

## REFERENCES

- Ackerman, K. B. 1997. Practical Handbook of Warehousing. 4th Edition., USA: Chapman & Hall
- Brochure of standard platform hand truck 2004. (On line) Available from: <http://www.advancedhandling.com> (08, Dec 04)
- Chase, R., Aquilano N., and Jacob F. 1998. Production and Operation Management. International Edition, US: McGraw-Hill
- Chorafas, D. N. 1974. Warehousing Planning, Organising and Controlling the storage and distribution of goods., USA: Macmillan Press Ltd
- Daniels R. L., Rummelb J. L. and Schantz R. 1998. Theory and methodology: A model for warehouse order picking. European journal of operational research 105: 1-17
- Imbeau, D and Laberge, M. 2005. Work factors affecting manual materials handling in a warehouse superstore. International journal of industrial ergonomics 35: 33-46
- Jenkins, C.H. 1968. Modern Warehouse Management., USA: McGraw-Hill.
- Matzliacha, B. and Tzur, M. 2000. Storage management of items in two levels of availability. European journal of operational research 121: 363-379
- Mulcahy, D. E. 1994. Warehouse Distribution and Operations Handbook., USA: McGraw-Hill
- Numpon Tungsub. 1995. An utilization improvement of a warehouse for air-conditioning Industry. Master's Thesis, Department of Industrial Engineering, Graduate School, Chulalongkorn University

- Panika Chaitamart. 2000. An efficiency improvement of warehousing management. Master's Thesis Department of Industrial Engineering, Graduate School, Chulalongkorn University
- Petersen, C. G. and Aase, G. 2004. A comparison of picking, storage, and routing policies in manual order picking. International journal of production economics 92: 11-19
- Plossl, G. and Wight, O. 1967. Production and Inventory control., principles and techniques, US: Prentice Hall, 1967
- Pongpat Phetrungrueng. 1996. An efficiency improvement of warehousing operations: a case study of air conditioner warehouse. Master's Thesis, Department of Industrial Engineering, Graduate School, Chulalongkorn University
- Pranee Kammarabootra. 1979. Warehouse Management., Master's Thesis, Department of Accountancy, Graduate School, Chulalongkorn University.
- Schneider, H. and Rinks, D.B. 1991. Empirical study of a new procedure for allocating safety stock in a wholesale inventory system. International journal of production economics 24: 181-189
- Sirang Klankamsorn. 1997. Development of a software for warehouse management system. Master's Thesis, Department of Industrial Engineering, Graduate School, Chulalongkorn University
- Teerapoj Charojrochkul. 1999. Improvement of material handling routing in warehouses and transportation operations in an automotive parts industry. Master's Thesis, Department of Industrial Engineering, Graduate School, Chulalongkorn University

- Tompkins, J. A. and Smith, J. D., eds. 1988. The Warehouse Management Handbook. USA: McGraw-Hill
- Tompkins, J. A., et al. 1996. Facilities Planning. 2nd edition., USA: John Wiley & Sons.
- Van den Berg, J. P. and Zijm, W. H. M. 1999. Models for warehouse management: Classification and examples. International journal of production economics 59: 519-528
- Vetchasart, D. 1997. Inventory Control and Storing Equipment Design., Master's Thesis, Department of Industrial Engineering, Graduate School, Chulalongkorn University
- Warman, J. 1983. Warehouse Management. UK: Heinemann.
- Water, C.D.J. 1992. Inventory Control and Management. Chichester, UK: John Wiley & Sons

## **APPENDICES**

**APPENDIX A**  
**DATA FROM INVOICE, RECEIPT AND RECORDING BOOK**  
**(MAY TO AUGUST 2004)**

### **Data from the invoices and the recording book**

As it was mentioned before, this warehouse has no such a system to record movement in and out of items then quantity of each item in a warehouse must be derived from other documents or calculations. To find an average quantity of each item in warehouse concerns with 2 files from administration. They are the invoices from suppliers, receipt to customer and a purchasing recording book of administration.

These sources provide useful information about delivery date, quantity of each item at receiving and ordering date. Ordering date is a date that administrators order items from suppliers and it is recorded in purchasing recording book of administration. A delivery date is a date that suppliers deliver items to a warehouse and it shows in an invoice from suppliers.

Average received quantity (R) is derived from received quantity in the invoices from suppliers. In this thesis, Average received quantity (R) of each item is the average value of the first 5 received quantity in the invoices from suppliers during May to August 2004.

Before this study, there is no record about safety stock of each item in the warehouse. Thus, data collection to find the safety stock of each item had operated during May to August 2004. The data collection had done by administrators. Before administrator orders item to store in a warehouse, warehousing staffs need to check the stock of that item and record it in a purchasing recording book of administration during May to August 2004. Safety stock of each item derives from the average value of the first 5 records of item's stock before administrators made an order of that item during May to August 2004.

As a result, the data of ordering quantity, safety stock, receiving and shipping date are showed in the following tables:

Table A.1: Data of ordering quantity from invoice during May to August 2004

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Cotton wool: Shell, pot, JoJo	10	12	13	5	10	10
27 baht cotton wool	10	10	10	10	10	10
a cigarette lighter: AS	5	4	3	1	8	9
a cigarette lighter: Black Star	5	5	8	2	4	6
a cigarette lighter: Pilot	5	5	5	5	5	5
a cigarette lighter: Red Star	5	4	3	1	8	9
a cigarette lighter: Red Tai-Yo	50	65	42	75	31	37
a cigarette lighter: Tai-Yo	57	52	36	81	86	30
A gas oven: lighter grade A	5	5	5	5	5	5
A gas oven: lighter grade C	20	18	22	15	26	19
Adhesive tape for wiring( Black)	30	28	35	24	34	29
Adhesive tape for wiring( Black) TOV	10	8	4	16	10	12
Adhesive tape for wiring( Blue)	25	32	25	16	18	34
Adhesive tape for wiring( Green)	25	35	25	12	28	25
Adhesive tape for wiring( Red)	25	45	22	18	21	19
Adhesive tape for wiring( White)	25	32	19	28	19	27
Adhesive tape for wiring( Yellow)	25	26	29	14	24	32
Aluminium foil: long	10	10	10	10	10	10
Aluminium foil: short	10	12	13	9	7	9
Aluminium Mop	20	20	20	20	20	20
Artificial clay: big size	10	14	8	12	8	8
Artificial clay: small size	10	5	8	17	12	8
Back cleaning brush: Twin	10	14	11	10	8	7
Back scratching stick	10	8	11	6	10	15
Badminton: ball	4	2	4	6	4	4
Basket: 436, Shopsticks	1	1	1	1	1	1
Basket: CS 014	3	3	3	3	3	3
Basket: CS 433 grade A	6	6	6	6	6	6
Basket: Spoon, one slot	2	2	2	2	2	2
Bath room cleaner: Jackie, Pink	10	12	8	7	15	8
Bath roon cleaning brush	50	56	42	62	55	35
Bath roon cleaning brush: Fish	5	5	5	5	5	5
Bath roon cleaning brush: Hama	10	10	10	10	10	10
Bath roon cleaning brush: Sack	4	4	4	4	4	4
Belanine spoon: long	20	25	16	22	14	23
Belanine spoon: short	20	27	18	14	15	26
Book: 10 baht	6	8	4	9	4	5
Book: 5 baht	4	4	2	6	4	4
Book: Drawing,Small	3	3	3	3	3	3
Book: tearable papert, Big	5	5	4	6	5	5
Book: tearable papert, Small	2	2	2	2	2	2
Book: tearable papert, without line,Big	3	3	3	3	3	3
Book: tearable papert, without line,Small	2	2	2	2	2	2
Bottle cleaning brush: B1 with sponge	2	2	2	2	2	2
Bottle cleaning brush: Rabbit	2	2	2	2	2	2
Bottle cleaning brush: Twin head	2	2	2	2	2	2
Bottle opener: 200	2	2	2	2	2	2
Bottle opener: 777	5	5	5	5	5	5
Bottle opener: 900	2	2	2	2	2	2
Bottle opener: A80	50	45	57	26	75	47
Bowl 16cm, grade A, with handle	4	4	4	4	4	4
Bowl 16cm, grade B, Mix	5	5	5	5	5	5
Bowl 18cm, grade B, dark	4	3	3	4	5	5
Bowl 20A	9	15	12	5	6	7
Bowl 20cm, grade A, dark	8	8	8	8	8	8
Bowl 20cm, grade B, dark	4	4	4	4	4	4

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Brooch in Pack	3	3	3	3	3	3
Brooch: Bee, 1	100	125	125	100	85	65
Brooch: Bee, 2	100	100	98	75	122	105
Brooch: Bee, 3	100	100	100	100	100	100
Brooch: grade A	5	5	5	5	5	5
Brooch: Lucky	5	5	5	5	5	5
Brooch: Rose, 0	100	100	100	100	100	100
Brooch: Rose, 1	100	152	85	49	88	126
Brooch: Rose, 2	100	122	85	74	96	123
Brooch: Rose, 3	100	65	79	136	134	86
Brooch: Rose, 4	100	100	100	100	100	100
Brooch: tiny, Gold	10	8	15	7	10	10
Brooch: tiny, White	20	22	15	18	26	19
Broom: water broomy	30	36	15	32	35	32
Broom: water Samor	10	12	14	8	8	8
Brush: Black meal of coconut	5	5	5	5	5	5
Brush: Brass 5 rows	2	2	2	2	2	2
Brush: Brass 6 rows	2	2	2	2	2	2
Brush: Brass 7 rows	2	2	2	2	2	2
Brush: Brass,3 Roses	10	10	10	10	10	10
Brush: Brass,Coin	12	11	12	17	10	10
Brush: Brass,Hama	10	10	10	10	10	10
Brush: Brass,Tiger	12	8	15	16	10	11
Brush: Brown meal of coconut	6	6	6	6	6	6
Brush: Nylon, Color	5	5	5	5	5	5
Brush: Nylon, Hama	10	12	8	5	14	11
Brush: Rose, Brass	10	10	10	10	10	10
Brush: Rose, Milk color	10	10	12	12	8	8
Brush: Rose, Tramsparent color	10	8	4	12	13	13
Buddism Ordaining set: Red	10	12	4	15	14	5
Buddism Ordaining set: Yellow	10	15	6	4	15	10
Can opener: 5 rings	10	10	10	10	10	10
CD Cleanser set	3	4	2	5	1	3
Cement cleaning Sponge: Tree	10	10	10	10	10	10
Chair: CS grade B	3	3	3	3	3	3
Chair: M, Big	3	3	3	3	3	3
chemical pen: pilot, small, Black	2	2	2	2	2	2
chemical pen: pilot, small, Blue	2	2	2	2	2	2
chemical pen: pilot, small, Red	2	2	2	2	2	2
Chopstick	5	4	8	4	3	6
Cigarette and lighter container: gastank. blue	2	2	2	2	2	2
Cigarette and lighter container: gastank. orange	2	2	2	2	2	2
Cleaning frill: Dozen pack	10	2	4	8	16	20
Cleaning frill: Kilo	5	3	3	5	6	8
Cleaning sponge with net: Merrysponge	10	6	7	17	12	8
Cleaning sponge with net: Modern	5	5	5	5	5	5
Cleaning sponge with net:House wife	10	5	8	12	16	9
Cleaning sponge with scrubber: Modern	10	16	12	7	5	10
Cleaning sponge: 3M, 2 purpose	50	54	78	34	19	65
Cleaning sponge: Hama, L	3	3	3	3	3	3
Cleaning sponge: Tree, L	10	7	15	6	12	10
Cleaning sponge: Tree, M	5	5	5	5	5	5
Cleaning sponge: Tree, S	5	5	5	5	5	5
Cleaning stainless frill: Big brite	10	10	10	10	10	10
Cleaning stainless frill: Poly	30	29	42	19	25	35
Cleaning tube	20	25	15	16	25	19



Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Clipboard A5	2	1	1	5	0	3
Clipper: Black 108	3	5	1	2	4	3
Clipper: Black 109	3	2	4	5	1	3
Clipper: Black 110	10	10	10	10	10	10
Clipper: Black 111	10	10	10	10	10	10
Clipper: Black 112	20	32	15	24	12	17
Clipper: White 0	20	32	15	24	12	17
Clipper: White 2	30	30	30	30	30	30
Clipper: White 3	30	45	25	31	30	19
Clipper: White 4	30	30	30	30	30	30
Clipper: White 5	30	45	25	31	30	19
Clipping Blade: Dragonfly	5	4	3	7	6	5
Clipping Blade: Sakura	2	2	1	5	1	1
Clothes for floor cleaning( Mob)	5	5	8	3	4	5
Clothes hanger: 222 ( wire)	5	2	8	4	5	6
Clothes hanger: 222 ,plastic	10	12	15	9	8	6
Clothes hanger: 3 rings	20	19	16	18	25	22
Clothes hanger: 5 holes	5	5	4	3	8	5
Clothes hanger: 5 rings	20	22	15	23	19	21
Clothes hanger: 599, Black	6	5	8	4	6	7
Clothes hanger: Aluminium, 639	5	5	5	5	5	5
Clothes hanger: Aluminium, 646	6	6	6	6	6	6
Clothes hanger: C1	20	20	20	20	20	20
Clothes hanger: No.799	5	4	8	3	5	5
Clothes hanger: PF221	20	20	16	15	22	27
Clothes hanger: red heart-shaped, 55	20	19	34	12	9	26
Clothes hanger: red heart-shaped, 99	10	9	9	16	8	8
Clothes hanger: Round Shape	5	5	5	5	5	5
Clothes hanger: Square Mini	5	5	5	5	5	5
Clothes hanger: Square, Twin	5	5	4	5	6	5
Clothes hanger: Umbrella	10	9	7	6	12	16
Comb: grade A No.801	5	5	5	5	5	5
Comb: grade A No.802	5	5	5	5	5	5
Comb: grade A No.803	5	5	5	5	5	5
Comb: grade A No.804	5	5	5	5	5	5
Comb: grade A No.805	5	5	5	5	5	5
Comb: grade A No.811A	4	2	6	2	4	6
Comb: Haie clipper, plastic	30	28	44	15	28	35
Comb: Haie clipper, stainless	10	5	17	4	19	5
Cone No1	5	5	5	5	5	5
Cone No2	5	5	5	5	5	5
Cone No3	5	5	5	5	5	5
Cone No4	5	5	5	5	5	5
Cone No5	5	5	5	5	5	5
Cotton butts: 100 pieces in pack	10	8	5	17	10	10
Cotton butts: 100 pieces in pack	5	5	5	5	5	5
Cotton butts: 100 pieces in pack	2	2	2	2	2	2
Cotton butts: 50 pieces in pack	10	8	8	6	15	13
Cotton butts: Fancy Giant size pot	10	5	4	7	15	19
Cotton butts: Fancy Jumbo Shell Pot	2	2	2	2	2	2
Cotton butts: Fancy Pot 2 slots	5	4	9	5	4	3
Cotton butts: Square box, pineapple	10	10	10	10	10	10
Cotton butts: transparent small size pot	10	8	14	15	8	5
Cotton wool: Ambulance bus	10	2	8	15	12	13
Cup 514: Transparent pattern	3	3	3	3	3	3
Cup 514: White pattern	2	2	2	2	2	2

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Cup 688: Sakura. small	3	3	3	3	3	3
Cup: 002 with Handle	10	8	7	15	14	6
Cup: 004 with Handle. Cartoon pattern	10	14	11	5	7	13
Cup: 204 with Handle	4	4	4	4	4	4
Cup: 205 with Handle	4	4	4	4	4	4
Cup: 404 with Handle	7	7	7	7	7	7
Cup: 45 Mitsu with Handle	20	20	20	20	20	20
Cup: 475	5	5	5	5	5	5
Cup: 639 Sakura, stripe with Cover	6	6	6	6	6	6
Cup: 733 with Handle	10	10	10	10	10	10
Cup: A3 with Handle	10	10	10	10	10	10
Cup: Arale	5	5	5	5	5	5
Cup: Freshy	20	18	25	24	12	21
Cup: Frog style 2012	8	8	8	8	8	8
Cup: Kitty style 2013	8	7	7	9	9	8
Cup: Marble 004	10	8	15	14	4	9
Cup: P.S. 10 ounces	10	8	8	9	11	14
Cup: P.S. 12 ounces	10	12	13	5	4	16
Cup: P.S. 70 ounces	10	10	10	10	10	10
Cup: Transparent, pineapple pattern	5	5	5	5	5	5
Cup: Wine	2	2	2	2	2	2
Curtain hooker: Color 1	2	1	3	1	2	3
Curtain hooker: Color 2	2	2	1	2	3	2
Curtain hooker: Color 3	2	2	1	6	1	0
Curtain hooker: Color 4	2	5	1	1	1	2
Curtain hooker: Color 5	2	1	1	3	2	3
Cutter 30-K	2	2	5	1	1	1
Cutter 44-K	3	3	1	1	5	5
Cutter ST-10	3	5	5	1	1	3
Cutter ST-100	3	5	5	1	1	3
Cutter ST-9	3	5	5	1	1	3
Cutter: 3 pieces	4	6	2	8	2	2
CutterPI Colorful	5	1	1	5	0	3
CutterPI with Blade	5	2	2	3	2	1
Dipper with short handle	1	1	1	1	1	1
Dish liquid cleanser: Cleo	50	85	34	25	44	62
Dish liquid cleanser: Sunny Wash 800cc	10	8	6	5	18	13
Dish soap cleanser	25	29	18	22	27	29
Doctor gloves: L	5	3	4	5	8	5
Doctor gloves: M	10	8	12	10	10	10
Doctor gloves: S	20	16	14	18	35	17
Dog chain: 20x6	3	2	3	4	4	2
Dog chain: 22x6	3	3	2	3	4	3
Dog chain: 25x6	3	3	1	5	2	4
Dog chain: 30x6	3	2	4	2	3	4
Dog chain: 35x6	3	3	4	3	3	2
Dog chain: 45x6	3	6	5	2	1	1
Drawer lock	20	10	25	14	28	23
Dry Alcohol cup	5	5	5	5	5	5
Dry cell: CAT, Big	20	20	20	20	20	20
Dry cell: CAT, Small	50	54	50	36	45	65
Dry cell: Chinese, 2A	20	25	16	23	15	21
Dry cell: Chinese, 3A	3	3	1	2	2	2
Dry cell: Panasonic, 2A, Alkarine	2	3	1	2	2	2
Dry cell: Panasonic, 2A, black	2	2	2	2	2	2
Dry cell: Panasonic, 2A, green	5	7	5	5	4	4

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Dry cell: Panasonic, 2A, red	2	3	1	2	2	2
Dry cell: Panasonic, 3A, black	2	4	2	2	1	1
Dry cell: Panasonic, 3A,Alkarine	2	4	2	2	1	1
Dry cell: Panasonic, 9V, square shape	2	2	2	2	2	2
Dry cell: Panasonic,size C, Middle	3	3	3	3	3	3
Dry cell: Panasonic,size D, Big	5	5	4	3	8	5
Elastic fabric 1 inche wide	5	5	4	8	3	5
Elastic fabric 10	2	1	1	3	3	2
Elastic fabric 11	2	1	4	3	1	1
Elastic fabric 14	2	3	1	1	1	4
Elastic fabric 16	2	4	1	1	1	3
Elastic fabric 3/4 inche wide	5	3	4	8	9	1
Elastic fabric 4	2	4	3	1	1	1
Elastic fabric 6	2	1	1	3	2	3
Elastic fabric 8	2	1	4	1	1	3
Envelope: airplane pattern	2	2	3	1	3	1
Envelope: Cartoon pattern	2	2	1	1	5	1
Envelope: National flag pattern	2	4	1	2	2	1
Envelope: Pink stripe	3	3	3	3	3	3
Envelope: Standard size, Cartoon	2	2	2	2	2	2
Envelope: Standard size, Color	3	3	3	3	3	3
Envelope: White long	2	3	3	2	1	1
Envelope: White stripe	5	4	4	5	7	5
Fabric cleaning Brush:003	30	35	35	25	24	31
Fabric cleaning Brush:031	20	14	18	24	32	12
Fabric cleaning Brush:707	6	6	5	7	7	5
Fabric cleaning Brush:Eastman 2 colors	50	53	48	64	35	50
Fabric cleaning Brush:Eastman, Bone	20	15	14	22	24	25
Fabric cleaning Brush:flat iron shape,brass	50	48	57	49	45	51
Fabric cleaning Brush:JCJ	20	18	22	22	15	23
Fabric cleaning Brush:Nylon 888	10	8	4	15	13	10
Fabric cleaning Brush:Nylon, flat iron	50	87	65	25	41	32
Fabric cleaning Brush:Nylon. flat iron.china	5	5	5	5	5	5
Fabric cleaning Brush:Rainbow, Samor	20	21	35	10	14	20
Fabric cleaning Brush:Samor, White fiber	20	18	19	25	18	20
Fabric cleaning soap: 3 stars	3	3	3	3	3	3
Fabric cleaning soap: Carus crane	3	3	3	3	3	3
Fabric Gloves: eagle, colorful, nylon	40	33	29	32	41	65
Fabric Gloves: eye, size 10-12	10	12	11	10	8	9
Fabric Gloves: eye, size 132	10	10	8	9	15	8
Fabric Gloves: eye, size 5-7	10	28	10	8	3	1
Fabric Gloves: eye, size 7-9	10	13	12	10	8	7
Fabric Gloves: eye, white, 125	10	8	14	6	7	15
Fabric Gloves: golden fish, colorful, nylon	10	8	10	12	10	10
Fabric Gloves: hot protector	4	3	5	4	4	4
Fabric Gloves: peacock, long, nylon	20	25	18	12	26	19
Fabric Gloves: peacock, sailclothes	20	25	24	13	15	23
Fabric Gloves: peacock,white, nylon	20	29	12	13	18	28
Fabric Gloves: Red rim	50	58	74	26	35	57
Fabric Gloves: Special weaver, rabbit	10	15	10	8	7	10
Fabric Gloves: Sun	20	22	28	14	20	16
Fabric Gloves: Sun, sailclothes	10	9	11	12	10	8
Fabric Gloves: white color, yellow rim	20	18	14	10	28	30
Fabric Gloves:Sun, nylon	20	13	18	27	17	25
Fabric Hanger: Big Bee	3	3	3	3	3	3
Fabric Hanger: Big flowers	3	3	3	3	3	3

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Fabric Hanger: Daily	3	3	3	3	3	3
Fabric Hanger: Green flowers	5	5	5	5	5	5
Fabric pincher: 16 pieces, Ploy	10	10	10	10	10	10
Fabric pincher: 18 pieces, CS	10	13	13	8	7	9
Fabric pincher: 18 pieces, round shape, Flower	24	36	22	18	20	24
Fabric pincher: 18 pieces, round shape, Merry	10	8	12	7	15	8
Fabric pincher: 18pieces, turbine	10	8	8	7	15	12
Fabric pincher: 24 pieces, Put	20	32	15	14	21	18
Fabric pincher: 30 pieces, CS	20	20	20	20	20	20
Fabric pincher: 30 pieces, Put	20	22	32	15	14	17
Fabric pincher: Big size	10	10	10	10	10	10
Fabric pincher: Japaneese	20	22	15	18	20	25
Fabric pincher: Wooden	10	7	9	12	12	10
Fabric Softener: Pink	5	8	7	2	4	4
Fabric Softener: Sky-blue	5	5	5	5	5	5
Fabric Whitner	10	12	8	7	15	8
Feathers stick	3	3	3	3	3	3
Feet cleaning sponge: Jolly	10	10	10	10	10	10
Flashlight. Chinese, Colorful plastic	5	5	4	3	8	5
Flashlight, Gun A2500	10	10	10	10	10	10
Flashlight, Gun A2600	10	10	13	13	8	6
Flashlight, Gun S2200	10	13	15	8	6	8
Flashlight. Panasonic, FF-137	5	7	5	5	4	4
Flashlight. Panasonic, FF-327	5	5	4	3	8	5
Flashlight, PF-127	5	5	5	5	5	5
Flashlight, Tiger 300	10	10	13	13	8	6
Flashlight, Tiger 500	3	3	3	3	3	3
Flashlight, Tiger 700	2	2	2	2	2	2
Flipper used for frying:	1	1	1	1	1	1
Flipper used for frying: with holes	1	1	1	1	1	1
Floor cleaning brush: Nylon, Rose	10	8	15	7	5	15
Floor cleaning sponge: Rose	10	10	10	10	10	10
Floor cleaning sponge: Tree	10	8	6	15	17	4
Full head Hat: A3	10	15	12	10	8	5
Full head Hat: loinclothes	6	7	11	5	4	3
Full head Hat: loinclothes with cap	4	6	2	4	3	5
Glass Cleaner: Buka	20	32	15	32	5	16
Grilling sieve	5	5	4	4	6	6
Hair Jel: Jenny	2	2	2	2	2	2
High Cup: 355 with Cover	2	2	2	2	2	2
Hot Stick Glue: Big	3	4	4	2	1	4
Hot Stick Glue: Small	3	3	1	1	5	5
Hot water pouch: Big, Kangaroo	3	3	3	3	3	3
Hot water pouch: small	10	10	10	10	10	10
Hot water pouch: stripe pattern, small	5	5	5	5	5	5
Ice canteen:Perfect, No.999-M5	3	3	3	3	3	3
Ice canteen:Star S, No. 592	5	5	5	5	5	5
Ice tray: pumpkin	4	1	7	1	5	6
Indigo: Big bottle, Chicken	3	3	3	3	3	3
Indigo: Big bottle, Crown	2	2	2	2	2	2
Indigo: big square shape, Crown	4	6	2	4	3	5
Indigo: bottle Mokey	2	2	2	2	2	2
Indigo: Medium bottle, Chicken	2	2	2	2	2	2
Indigo: Small bottle, Chicken	2	2	2	2	2	2
Indigo: square shape, Crown	20	18	22	15	26	19
Indigo: square shape, Monkey	2	2	2	2	2	2

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Indigo: Squarel bottle, Chicken	2	2	2	2	2	2
Indigo:Liquid, Chicken	2	2	2	2	2	2
Kerosine: Jun	50	65	42	75	31	37
Knife: Chinese 103	50	50	50	50	50	50
Knife: Chinese 104A	20	10	30	24	12	24
Knife: Chinese 106W	20	20	20	20	20	20
Knife: Chinese 108	20	15	18	24	24	19
Knife: Chinese 109	20	21	17	22	20	20
Knife: Chinese 1105	20	10	30	24	12	24
Knife: Chinese 1168	20	20	20	20	20	20
Knife: Chinese 1174	20	15	18	24	24	19
Knife: Chinese 1177	20	21	17	22	20	20
Knife: Chinese 1178	20	21	17	22	20	20
Knife: Chinese 202	12	11	12	10	12	15
Knife: Chinese 204	12	12	12	12	12	12
Knife: Chinese 205	12	11	12	10	12	15
Knife: Kiwi 172	10	10	10	10	10	10
Knife: Kiwi 173	10	10	10	10	10	10
Knife: Kiwi 193	50	68	50	41	36	55
Knife: Kiwi 194	50	50	50	50	50	50
Knife: Kiwi 195	50	68	50	41	36	55
Knife: Kiwi 21	10	15	8	12	5	10
Knife: Kiwi 22	10	10	10	10	10	10
Knife: Kiwi 246	10	10	10	10	10	10
Knife: Kiwi 247	10	12	13	9	7	9
Knife: Kiwi 474	20	10	30	24	12	24
Knife: Kiwi 475	20	20	20	20	20	20
Knife: Kiwi 476	20	15	18	24	24	19
Knife: Kiwi 477	20	21	17	22	20	20
Knife: Kiwi 501	50	84	34	51	21	60
Knife: Kiwi 502	50	50	48	36	64	52
Knife: Vegetable, Wildman .small	10	12	13	9	7	9
Knife: Vegetable, Wildman 1 blade	10	10	10	10	10	10
Knife: Vegetable, Wildman 2 blades	10	10	10	10	10	10
Ladle: Belanine	20	32	15	21	14	18
Ladle: Chinese pattern	3	3	4	4	1	3
Ladle: Colorful handle	10	15	8	12	5	10
Latex glue 5 Baht	2	2	5	1	1	1
Latex glue10 Baht	3	5	5	1	1	3
Leather polish: Kiwi, Black	8	9	15	8	4	4
Leather polish: Kiwi, Brown	7	2	8	4	12	9
Leather polish: Kiwi, Classic Black	5	5	5	5	5	5
Leather polish: Kiwi, Classic Brown	5	2	4	9	5	5
Light bulb of Flashlight: 24V No.1	2	2	3	1	2	2
Light bulb of Flashlight: 24V No.2	2	2	2	2	2	2
Light bulb of Flashlight: 24V No.3	2	3	1	1	1	4
Light bulb of Flashlight: 24V No.4	2	2	1	1	1	5
Light bulb of Flashlight: 24V No.5	2	1	1	3	2	3
Light bulb: Superlamp 200W	20	25	18	16	22	19
Lubricant oil for machinery: flat bottle	5	6	7	4	6	2
Lubricant oil for machinery: round bottle	10	8	15	12	8	7
Lunch box 584-2	4	5	4	3	4	4
Lunch box 921	2	1	1	3	2	3
Lunch box 922	4	8	2	3	2	5
Lunch box 923	3	3	3	3	3	3
Magnifying glass	2	1	2	1	3	3

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Meji color pen	3	3	5	2	2	3
Menthol: Mid	5	5	5	5	5	5
Mentholated ointment	2	2	2	2	2	2
Metal polisher: Big. Brasso	10	10	10	10	10	10
Metal polisher: Medium. Brasso	10	12	8	7	15	8
Metal polisher:Big. Vnol	20	2	17	22	28	31
Metal polisher:Small. Brasso	50	65	42	75	31	37
Metal polisher:Small. Vnol	20	32	15	32	5	16
Milk bottle: Kid, Chinesee	5	5	5	5	5	5
Mirror with Plastic frame	10	6	7	14	10	13
Mirror with Swinger	2	2	2	2	2	2
Mirror: bath room	6	6	6	6	6	6
Mirror: Flower 10x14 .hang	5	5	5	5	5	5
Mirror: Flower 12x16 .hang	5	5	5	5	5	5
Mirror: Flower 14x20 .hang	3	3	3	3	3	3
Mirror: Flower 7x10 .hang	10	10	10	10	10	10
Mirror: Flower 8x12 .hang	10	6	7	14	10	13
Mirror: Flower No.10	20	28	14	16	21	21
Mirror: Flower No.12	10	5	8	7	15	15
Mirror: Flower No.4	10	10	10	10	10	10
Mirror: Flower No.5	10	10	10	10	10	10
Mirror: Flower No.6	30	25	15	34	36	40
Mirror: Flower No.7	30	30	30	30	30	30
Mirror: Flower No.8	20	20	20	20	20	20
Mirror: Flower No.9	20	15	22	16	22	25
Mosquitoes wiping stick container	20	25	18	19	24	14
Mosquitoes wiping stick container: long	3	2	5	3	3	2
Mop with round fabric	10	12	8	7	15	8
Mosquitoes wiping joss stick: Dragon	20	20	20	20	20	20
Mosquitoes wiping reagent: Ko-Yo-15	10	8	6	5	18	13
Mothball: ATM. big	10	10	10	10	10	10
Mothball: ATM. small	10	10	10	10	10	10
Mothball: Big pack 1x2	5	5	5	5	5	5
Mothball: Jumbo size	5	5	5	5	5	5
Mothball: Kilo	10	10	10	10	10	10
Mothball: Small pack	10	10	10	10	10	10
Nail cleaning brush: Big, transparent	5	5	5	5	5	5
Nail cleaning brush: flat iron shape	6	6	6	6	6	6
Nail cutter: 129	10	10	10	10	10	10
Nail cutter: 211	5	5	5	5	5	5
Nail cutter: 309	5	5	5	5	5	5
Nail cutter: 600	5	5	5	5	5	5
Nail cutter: 602	5	5	5	5	5	5
Nail cutter: 777. 211	50	45	52	51	39	63
Nail cutter: 999, Big	50	50	50	50	50	50
Nail cutter: 999, Small	100	100	100	100	100	100
Nail polisher: Big size	5	5	5	5	5	5
Nail polisher: Small size	2	2	2	2	2	2
Nail polisher: Square bottle	10	10	10	10	10	10
Nipple: Akasen L	5	5	5	5	5	5
Nipple: Akasen M	5	5	5	5	5	5
Nipple: Akasen S	5	5	5	5	5	5
Nipple: Kiki L	5	5	5	5	5	5
Nipple: Kiki M	5	5	5	5	5	5
Nipple: Kiki S	5	5	5	5	5	5
Nipple: Pegen, L	2	2	2	2	2	2

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Nipple: Pegen, M	2	2	2	2	2	2
Nipple: Pegen, S	2	2	2	2	2	2
Olive oil: Big size	5	5	5	5	5	5
Olive oil: Small size	2	2	2	2	2	2
One baht cotton wool	4	4	4	4	4	4
Padlock: black, long 32mm	40	55	40	32	39	34
Padlock: black, long 38mm	30	30	30	30	30	30
Padlock: black, long 38mm	2	2	2	2	2	2
Padlock: black, long 50mm	10	10	10	10	10	10
Padlock: black, short 25mm 999	100	100	100	100	100	100
Padlock: black, short 32mm	40	65	45	23	32	35
Padlock: black, short 32mm 999	3	3	3	3	3	3
Padlock: black, short 38 mm	40	40	40	40	40	40
Padlock: black, short 38mm 999	2	2	2	2	2	2
Padlock: black, short 50mm 5 rings	4	4	4	4	4	4
Padlock: black, short 50mm 5 rings	3	3	3	3	3	3
Padlock: black, short 50mm 999	10	10	10	10	10	10
Padlock: brass, long 32mm	40	26	34	85	22	33
Padlock: brass, long 38mm	30	22	51	26	22	29
Padlock: brass, short 20 mm	50	38	75	45	42	50
Padlock: brass, short 32mm	80	125	74	65	49	87
Padlock: gold, long 25mm	20	20	20	20	20	20
Padlock: gold, long 32mm	3	1	5	3	4	2
Padlock: gold, long 38mm 5 rings	3	3	3	3	3	3
Padlock: gold, long 50mm	10	10	10	10	10	10
Padlock: gold, long 50mm	2	2	2	2	2	2
Padlock: gold, short 25mm	10	5	4	7	15	19
Padlock: gold, short 32mm	3	3	3	3	3	3
Padlock: gold, short 38mm	80	78	95	102	70	55
Padlock: gold, short 38mm	5	5	5	5	5	5
Padlock: gold, short 50mm	20	20	20	20	20	20
Padlock: gold, short 50mm	4	2	6	2	5	5
Padlock: Solo 25mm, pack	100	100	100	100	100	100
Padlock: Solo 30mm No.84	10	15	12	8	4	11
Padlock: Solo 35mm, pack	20	20	20	20	20	20
Padlock: Solo 35mm, pack	5	6	4	2	5	8
Padlock: Solo 40mm, pack	20	20	20	20	20	20
Padlock: Solo 40mm, pack	5	5	5	5	5	5
Padlock: Solo 45mm, pack	5	7	10	2	2	4
Padlock: Solo 50mm	20	25	15	8	34	18
Padlock: Solo 50mm, pack	5	11	4	3	5	2
Padlock: Solo 55mm, pack	5	5	5	5	5	5
Padlock: VITA long, 40mm	10	5	12	22	4	7
Padlock: VITA long, 45mm	10	10	10	10	10	10
Padlock: VITA long, 50mm	10	8	14	5	9	14
Padlock: VITA short, 40mm	10	6	14	14	8	8
Padlock: VITA short, 45mm	10	10	10	10	10	10
Padlock: VITA short, 50mm	10	21	8	4	6	11
Padlock: Wolf 20mm	100	35	87	125	156	97
Padlock: Wolf 20mm	2	2	2	2	2	2
Padlock: Wolf 25mm	50	50	50	50	50	50
Padlock: Wolf 25mm	2	2	2	2	2	2
Padlock: Wolf 30mm	50	50	50	50	50	50
Padlock: Wolf 30mm	2	2	2	2	2	2
Padlock: Wolf 40mm	10	10	10	10	10	10
Padlock: Wolf 40mm	2	2	2	2	2	2

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Padlock: Wolf 50mm	10	10	10	10	10	10
Padlock: Wolf 50mm	3	3	3	3	3	3
Padlock: World 50mm	3	3	3	3	3	3
Painting brush: No.1	4	7	4	5	7	2
Painting brush: No.1.5	4	3	4	9	5	4
Painting brush: No.2	4	8	3	4	5	5
Painting brush: No.2.5	2	1	1	2	5	1
Painting brush: No.3	2	2	1	1	3	3
Painting brush: No.4	2	3	2	5	0	0
Pan cleaning brush: meal of coconut 2014	10	8	7	14	12	9
paper card: gold seam 007	10	6	12	12	10	10
paper card:Thai	20	15	17	23	27	18
paper card:Winner	2	3	1	3	1	2
Pen: Diamond	5	5	8	2	5	5
Pen: Lancer 626 Blue	5	5	8	2	5	5
Pen: Lancer 813 Black	3	3	3	3	3	3
Pen: Lancer 813 Blue	4	3	5	6	4	2
Pen: Lancer 813 Red	3	3	5	2	3	2
Pen: Lancer 825 Black	6	8	7	4	6	5
Pen: Lancer 825 Blue	7	9	8	4	7	7
Pen: Lancer 825 Red	7	9	8	4	7	7
Pen: Lancer 878 Black	10	10	10	10	10	10
Pen: Lancer 878 Blue	10	8	15	12	9	6
Pen: Lancer 878 Red	10	15	8	12	6	9
Pen: Lancer 915 Black	3	3	3	3	3	3
Pen: Lancer 915 Blue	4	3	5	6	4	2
Pen: Lancer 915 Red	3	3	5	2	3	2
Pencil: muti-head	2	2	2	2	2	2
Pencil: muti-head, Diamond	12	15	12	8	14	11
Perfume gel: G&G	3	2	5	6	1	1
Photo Album: Big size	5	5	5	5	5	5
Photo Album: Jumbo size	5	5	5	5	5	5
Photo Album: Medium size	5	5	5	5	5	5
Photo Album: Small size	10	4	8	9	11	18
pincer with cutting head: diamond	20	28	28	24	12	8
pincer with sharp head: diamond	20	28	28	24	12	8
pincer: diamond	40	38	46	25	48	43
Pingpong ball: orande	2	3	2	2	2	1
Pingpong ball: white	1	1	1	1	1	1
Plastic bag with lock	5	5	5	5	5	5
Plastic binder	10	10	10	10	10	10
Plastic bucket: 3.5	6	5	4	5	7	9
Plastic bucket: Black 16	4	6	4	2	5	3
Plastic bucket: Black 18	6	4	5	8	9	4
Plastic bucket: Yellow 2.5	10	12	14	8	7	9
Plastic bucket: Yellow 3.5	6	5	5	7	7	6
Plastic bucket: Yellow 4.5	5	5	5	5	5	5
plastic card:Winner 222	5	3	1	2	4	3
Plastic fork: short	3	3	3	3	3	3
Plastic spoon: long	3	3	2	5	3	2
Plastic spoon: short	5	5	4	8	1	7
Plastic spoon-fork	20	20	20	20	20	20
Plug head: Black	10	10	10	10	10	10
Plug head: White	10	12	10	13	11	4
Plug Receptable head: Black	6	6	4	7	5	8
Pollution filter clothes: blue	20	15	22	27	22	14



Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Pot mender	5	3	7	6	5	4
Power line of a flat iron	3	3	3	3	3	3
Power line of a frying pan	3	3	5	2	1	4
Power line of a pot	3	1	2	4	3	5
Power plug receptable: 10M, AMC	5	5	4	3	8	5
Power plug receptable: 10M, Motto	10	13	15	8	6	8
Power plug receptable: 2001-10	5	5	4	3	8	5
Power plug receptable: 2001-11	5	5	5	5	5	5
Power plug receptable: 2001-5	5	5	4	3	8	5
Power plug receptable: 2001-8	5	5	4	3	8	5
Power plug receptable: 2001-9	5	5	5	5	5	5
Power plug receptable: 20M, AMC	5	5	2	3	8	7
Power plug receptable: 5M, Motto	10	13	15	8	6	8
Power plug receptable: 8M, AMC	5	5	4	3	8	5
Power plug receptable: Nagas 10M	10	13	15	8	6	8
Power plug receptable: Nagas 5M	10	10	13	13	8	6
Power plug receptable: Nagas 8M	10	13	15	8	6	8
Power plug receptable: NS-1 Nakashi	5	5	2	3	8	7
Power plug receptable:SU1, triangle shape	5	5	5	5	5	5
Price tag Shooter	4	3	4	8	4	1
Price Tag sticker	10	8	7	15	10	10
Pumping tube : plastic	10	14	2	19	8	7
Razor : 4 pieces in one pack	3	3	3	3	3	3
Razor : Double blades SuperMax	5	4	3	7	6	5
Razor : Fancy	10	12	15	8	3	12
Razor : Feather	3	1	4	2	2	6
Razor : Gillette Thin 2	50	52	54	58	32	54
Razor : Green Sayuri	2	2	2	2	2	-
Razor : Karat	5	5	7	4	4	5
Razor : S.Doll	5	5	5	5	5	5
Razor : single blades Gillette Click	25	23	24	28	25	25
Razor : with 2 blades	5	5	5	4	3	8
Razor : with Nail cutter	3	3	1	1	4	1
Razor : Yellow Sayuri	3	1	4	2	2	6
Razor :Doctorll	5	5	5	5	5	5
Razor :TCI Set	5	5	7	4	4	5
Razor Blade: Atta	10	10	14	8	6	12
Razor Blade: Dorgo	5	4	3	7	6	5
Razor Blade: Feather	2	2	1	5	1	1
Razor Blade: SuperMax	2	2	2	2	2	2
Razor Blade: SuperStainless	3	3	2	1	5	4
Razor Blade: Superthin	3	3	2	1	5	4
Refilled Gas: Buca, Jumbo	20	18	22	15	26	19
Refilled Gas: Buca, Small	5	5	8	2	4	6
Ring: 500 pieces : chain	5	4	8	4	3	6
Ring: Big size	10	12	14	8	8	8
Ring: Medium size	3	1	2	5	6	1
Ring: Small size	2	4	1	1	2	2
Rubber binder: big	5	5	5	5	5	5
Rubber binder: small	5	5	5	5	5	5
Rubber gloves: Canon, L	1	1	1	1	1	1
Rubber gloves: Canon, M	1	1	1	1	1	1
Rubber gloves: Canon, S	1	1	1	1	1	1
Rubber gloves: Dragon, L	5	5	5	5	5	5
Rubber gloves: Dragon, M	5	5	5	5	5	5
Rubber gloves: Dragon, S	5	5	5	5	5	5

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Rubber gloves: OK, 7.5, cream color	1	1	1	1	1	1
Rubber gloves: OK, 7.5, orange color	1	1	1	1	1	1
Rubber gloves: OK, 8.5, cream color	1	1	1	1	1	1
Rubber gloves: OK, 8.5, orange color	1	1	1	1	1	1
Rubber gloves: Panda, Black, L	1	1	1	1	1	1
Rubber gloves: Panda, Black, M	1	1	1	1	1	1
Rubber gloves: Panda, Black, S	1	1	1	1	1	1
Rubber gloves: Panda, Goose, 7.5, Pink	1	1	1	1	1	1
Rubber gloves: Panda, Goose, 8.5, Pink	1	1	1	1	1	1
Rubber gloves: Panda, Orange, L	4	4	4	4	4	4
Rubber gloves: Panda, Orange, M	3	3	3	3	3	3
Rubber gloves: Panda, Orange, S	3	3	3	3	3	3
Rubber gloves: PVC, White, M	10	8	4	6	15	17
Rubber gloves: Sun, Orange,L	1	1	1	1	1	1
Rubber gloves: Sun, Orange,M	1	1	1	1	1	1
Rubber gloves: Sun, Orange,S	1	1	1	1	1	1
Rug: egg shape	4	3	8	1	5	3
Rug: heart shape	4	3	4	5	3	5
Rug: round shape	4	5	4	5	4	2
Rug: small	5	8	4	6	5	2
Rug: square shape	4	4	5	3	7	1
Rug: weaved	6	4	5	7	5	9
Sauce bottle: Orange	2	2	2	2	2	2
Sauce bottle: Transparency	3	3	3	3	3	3
Saving box: Big cylinder A	1	1	1	1	1	1
Saving box: Fat A	4	4	4	4	4	4
Saving box: Giant, A	2	2	2	2	2	2
Saving box: Medium A	2	2	2	2	2	2
Saving box: Medium A, Kid	2	2	2	2	2	2
Saving box: Medium B	2	2	2	2	2	2
Saving box: Star, S100-4	2	2	2	2	2	2
Saving box: Star, S1005-4	2	2	2	2	2	2
Saving box: Tiny A	3	3	3	3	3	3
Scissors: 8 inches, 999	1	1	1	1	1	1
Scissors: Bee, 304	1	1	1	1	1	1
Scissors: Chtnese yellow handle	5	4	5	3	6	7
Scissors: Jasmine	5	8	4	3	6	4
Scissors: Meti, Rabbit	40	48	22	54	44	32
Scissors: Orange handle	60	65	58	72	44	61
Scissors: paper set	10	12	8	4	18	8
Scissors: Rose, 304	5	6	8	2	3	6
Scissors: Rose, 33	40	35	42	45	32	46
Scissors: Rose, 538	40	35	42	45	32	46
Scissors: Rose, 917	40	35	42	45	32	46
Scissors: Rubber handle size 1	2	5	2	1	1	1
Scissors: Rubber handle size 2	2	3	2	2	1	2
Scissors: Rubber handle size 3	2	3	1	2	1	3
Scissors: thread, black	12	15	12	8	12	13
Scissors: Wildman 03A	20	18	22	26	16	18
Scissors: Wildman 04A	20	32	14	11	17	26
Scissors: Wildman 05A	20	18	22	26	16	18
Screw driver 2 pieces in set	2	3	4	2	1	1
Screw driver 4 pieces in set	40	52	32	24	58	34
Screw driver for electrical test	50	35	42	65	57	51
Screw driver for watch	5	2	5	1	8	9
Screw driver with 3 inches punch head	48	67	48	29	36	60

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Screw driver with 4 inches punch head	48	67	48	29	36	60
Screw driver with switching head	3	3	4	3	0	5
Scrubber with Handle: Black	20	18	12	25	14	31
Scrubber with sponge: Merrybrit. Twin	20	18	22	34	11	15
Scrubber: 3M	50	54	78	34	19	65
Scrubber: Bigsize 1mx2m	5	5	5	5	5	5
Scrubber: Diamond	10	10	10	10	10	10
Scrubber: Elephant	10	10	10	10	10	10
Scrubber: Merbrite, Original	20	15	24	18	22	21
Scrubber: Set 10	3	3	3	3	3	3
Scrubber: Set 11	3	3	3	3	3	3
Scrubber: Set 14	3	3	3	3	3	3
Scrubber: Set 1x3	4	5	2	7	1	5
Shoe brush: Herping	10	12	14	8	8	8
Shoe polish: big, black	10	10	10	10	10	10
Shoe polish: small, black	20	32	15	32	5	16
Shoe polish: small, brown	10	12	8	7	15	8
Shoe rope: 24 inches, Black	1	1	1	1	1	1
Shoe rope: 24 inches, Black, Big	1	1	1	1	1	1
Shoe rope: 24 inches, Black, Flat	1	1	1	1	1	1
Shoe rope: 24 inches, Brown	1	1	1	1	1	1
Shoe rope: 24 inches, Brown, Big	1	1	1	1	1	1
Shoe rope: 24 inches, Brown, Flat	1	1	1	1	1	1
Shoe rope: 24 inches, Dark brown	1	1	1	1	1	1
Shoe rope: 24 inches, Dark brown, Big	1	1	1	1	1	1
Shoe rope: 24 inches, Dark brown, Flat	1	1	1	1	1	1
Shoe rope: 24 inches, White	1	1	1	1	1	1
Shoe rope: 24 inches, White, Big	1	1	1	1	1	1
Shoe rope: 24 inches, White, Flat	1	1	1	1	1	1
Shoe rope: 36 inches, Black	1	1	1	1	1	1
Shoe rope: 36 inches, Black, Big	1	1	1	1	1	1
Shoe rope: 36 inches, Black, Flat	1	1	1	1	1	1
Shoe rope: 36 inches, Brown	1	1	1	1	1	1
Shoe rope: 36 inches, Brown, Big	1	1	1	1	1	1
Shoe rope: 36 inches, Brown, Flat	1	1	1	1	1	1
Shoe rope: 36 inches, Dark brown	1	1	1	1	1	1
Shoe rope: 36 inches, Dark brown, Big	1	1	1	1	1	1
Shoe rope: 36 inches, Dark brown, Flat	1	1	1	1	1	1
Shoe rope: 36 inches, White	1	1	1	1	1	1
Shoe rope: 36 inches, White, Big	1	1	1	1	1	1
Shoe rope: 36 inches, White, Flat	1	1	1	1	1	1
Shoe rope: 42 inches, Black, Big	1	1	1	1	1	1
Shoe rope: 42 inches, Black, Flat	2	2	2	2	2	2
Shoe rope: 42 inches, Brown, Big	1	1	1	1	1	1
Shoe rope: 42 inches, Brown, Flat	2	2	2	2	2	2
Shoe rope: 42 inches, Dark brown, Big	1	1	1	1	1	1
Shoe rope: 42 inches, Dark brown, Flat	2	2	2	2	2	2
Shoe rope: 42 inches, Mix, Flat	3	3	3	3	3	3
Shoe rope: 42 inches, White, Big	1	1	1	1	1	1
Shoe rope: 42 inches, White, Flat	2	2	2	2	2	2
Shoe rope: 48 inches, Black, Flat	1	1	1	1	1	1
Shoe rope: 48 inches, Brown, Flat	1	1	1	1	1	1
Shoe rope: 48 inches, White, Flat	1	1	1	1	1	1
Shoe rope: 60 inches, Black, Big	1	1	1	1	1	1
Shoe rope: 60 inches, Black, Flat	1	1	1	1	1	1
Shoe rope: 60 inches, Brown, Big	1	1	1	1	1	1

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Shoe rope: 60 inches, Brown, Flat	1	1	1	1	1	1
Shoe rope: 60 inches, White, Big	1	1	1	1	1	1
Shoe rope: 60 inches, White, Flat	1	1	1	1	1	1
Shoe rubber: G2-1	50	62	68	24	56	40
Shoe rubber: G2-4	50	50	50	50	50	50
Shoe rubber: G3-1	50	38	24	72	80	36
Shoe rubber: G3-4	50	31	52	49	93	25
Shoe rubber: Kiwi, Black	8	9	15	8	4	4
Shoe rubber: Kiwi, Brown	5	4	9	6	3	3
Shoe rubber: Kiwi, White	5	5	4	2	8	6
Shoe supporter: Lady, 10 kgs	2	2	2	2	2	2
Shoe supporter: Man, 10 kgs	2	2	2	2	2	2
Shoes hanger	5	3	5	7	5	5
Short Clipping Blade: Dragonfly	10	10	14	8	6	12
Shower cap: cartoon pattern, big	4	6	3	5	3	3
Shower cap: cartoon pattern, small	4	2	5	2	6	5
Shower cap: finesse, big	4	5	7	2	2	4
Shower cap: finesse, small	4	5	5	3	3	4
Shower cap:big	4	4	4	4	4	4
Shower cap:small	4	3	8	3	4	2
Shower sponge : Jolly 001	2	2	2	2	2	2
Shower sponge : Jolly 002	3	3	3	3	3	3
Shower sponge : Jolly 003	2	2	2	2	2	2
Shower sponge : Jolly 004	15	18	11	21	8	17
Shower sponge with Shower Cream	4	2	5	3	6	4
Shower sponge: Natural	10	5	8	15	16	6
Showering head spray	20	18	14	25	26	17
shrink adhesive tape 1 inche	5	5	3	5	7	5
shrink adhesive tape 1 inche big size	5	12	3	2	5	3
shrink adhesive tape 1.5 inche big size	5	3	5	8	7	2
shrink adhesive tape 2 inche big size	5	11	4	6	2	2
shrink adhesive tape 3/4 inche	5	3	5	5	4	8
shrink adhesive tape 3/4 inche big size	5	5	6	5	4	5
Soap box: 2 slots	10	14	12	7	11	6
Soap box: 351P Transparent	2	2	2	2	2	2
Soap box: 351P White	2	2	2	2	2	2
Soap box: 771	5	5	5	5	5	5
Soap box: Kiak	6	3	4	9	8	6
Soap box: Pearl	10	15	11	5	7	12
Soap box: Shinjung	6	6	6	6	6	6
Soap box: Transparent stripes	5	5	5	5	5	5
Soap box: White stripes	5	5	5	5	5	5
Soap: Big Tamamrine	2	2	2	2	2	2
Soap: Ginger	5	5	5	5	5	5
Soap: kok-leang	5	5	5	5	5	5
Soap: Laura	5	5	5	5	5	5
Soap: Small Cucumber	2	2	2	2	2	2
Soap: Tamarine	2	2	2	2	2	2
Soap: Ya-Un	10	10	10	10	10	10
Socks: business, Mix color	15	14	20	17	11	13
Socks: short, Mix color	10	21	5	5	10	9
Spoon: Elephant, short	10	7	14	8	13	8
Spoon: Panda, short	20	27	18	14	15	26
Spoon: short, Zebra	10	15	4	17	3	11
Stainless Cutter L-120	5	2	2	3	2	1
Stainless spoon: coffee	10	7	14	8	13	8

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Stainless spoon: Jet	10	6	3	18	12	11
Stainless spoon-fork#C	10	10	10	10	10	10
Staple wire	5	5	5	5	5	5
Stapler	5	5	5	5	5	5
Steel pot stand	5	3	6	4	8	4
Super Glue: Ateco	10	12	8	4	18	8
Super Glue: Chinesee	5	1	1	5	0	3
Super Glue: Kenji	5	2	2	3	2	1
Tape Cleanser set	3	1	4	5	2	3
Tape: 2 side glue. Loise size 1x1	20	32	15	24	12	17
Tape: Box closer: murky color	15	15	15	15	15	15
Tape: Box closer: transparency	10	15	12	6	7	10
Tape: Osaka 1meter	3	3	3	3	3	3
Tape: transparency 1 inche 36 yard	5	5	5	5	5	5
Tape: transparency 1/2 inche 10 yard	5	5	8	2	5	5
Tape: transparency 1/2 inche 3 yards	5	5	8	2	5	5
Tape: transparency 1/2 inche 36 yard, big	15	15	25	11	12	12
Tape: transparency 1/2 inche 36 yard, small	5	5	5	5	5	5
Tape: transparency 1/2 inche 72 yard	5	5	5	5	5	5
Tape: transparency 3/4 inche 36 yard	10	15	12	6	7	10
Tape: transparency 3/4 inche 72 yard	5	5	8	2	5	5
Ten baht cotton wool	5	5	5	5	5	5
Thread: 1 baht, YNC Black	2	2	2	2	2	2
Thread: 1 baht, YNC Dark gray	2	2	2	2	2	2
Thread: 1 baht, YNC Mix	2	2	2	2	2	2
Thread: 1 baht, YNC White	2	2	2	2	2	2
Thread: 1 baht, YNC Yellow	2	2	2	2	2	2
Thread: 10 baht set, Mix	5	5	5	5	5	5
Thread: 10 baht set, White-Black	5	5	5	5	5	5
Thread: A Black	3	3	3	3	3	3
Thread: A Dark gray	3	3	3	3	3	3
Thread: A Mix	3	3	3	3	3	3
Thread: A White	3	1	3	5	3	3
Thread: A White-Black	3	3	4	1	1	6
Thread: Pink set	2	2	2	2	2	2
Thread: Sailing ship, Black	10	11	5	8	20	6
Thread: Sailing ship, Mix	10	10	10	10	10	10
Thread: Sailing ship, White	10	13	11	13	8	5
Tissue box	4	4	4	4	4	4
Toothbrush: 12 in one box, Mediu Victory	10	10	10	10	10	10
Toothbrush: 12 in one box, Soft Victory	20	13	15	22	24	26
Toothbrush: 3 in one pack JGA, transparent	3	3	3	3	3	3
Toothbrush: 3 in one pack JGA, turbid	3	3	1	1	4	1
Toothbrush: 30 in one box, Mediu Victory	10	10	10	10	10	10
Toothbrush: 30 in one box, Soft Victory	10	5	12	18	8	7
Toothbrush: CASA, 203	5	5	5	5	5	5
Toothbrush: CASA, 204	5	5	7	4	4	5
Toothbrush: CASA, 205	5	5	7	4	4	5
Toothbrush: CASA, 207	5	5	5	5	5	5
Toothbrush: CASA, 208	5	5	5	5	5	5
Toothbrush: CASA, 210	5	5	5	5	5	5
Toothbrush: Chinesee, Adult 650	3	3	3	3	3	3
Toothbrush: Chinesee, Adult 940	2	2	2	2	2	2
Toothbrush: Chinesee, Kid	2	2	2	2	2	2
Toothbrush: JAGA, 674	6	6	6	5	5	8
Toothbrush: JAGA, 690	6	6	6	6	6	6

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Toothbrush: JAGA, 698	6	5	3	3	9	10
Toothbrush: JAGA, 699	6	3	4	8	9	6
Toothbrush: JAGA, 739	6	2	5	8	6	9
Toothbrush: JAGA, 740	6	4	5	3	8	10
Toothbrush: Jomana	60	49	52	69	72	58
Toothbrush: Kid, Komo	5	5	5	5	5	5
Toothbrush: OralB Med.	10	10	10	10	10	10
Toothbrush: OralB Soft	20	12	18	25	24	21
Toothbrush: OSAKA, 204	6	6	6	6	6	6
Toothbrush: OSAKA, 205	6	6	6	6	6	6
Toothbrush: OSAKA, 206	6	6	6	6	6	6
Toothbrush: Popular Eastman	10	10	10	10	10	10
Toothbrush: Slim Victory	10	8	5	15	12	10
Toothbrush: Soft. transparent Eastman	20	12	18	25	24	21
Toothpast squeezer: murky	5	5	5	5	5	5
Toothpast squeezer: transparency	3	3	3	3	3	3
Toothpick : Kilo	3	3	3	3	3	3
Toothpick 1x10	10	8	9	15	16	2
Toothpick 2in1	10	12	8	9	11	10
Toothpick: Bamboo, Large	10	10	10	10	10	10
Toothpick: Bamboo, Medium	5	5	5	5	5	5
Toothpick: Bamboo, Small	2	2	2	2	2	2
Toothpick: Bandang, Medium	20	22	24	16	18	20
Topknot of Pot's cover: Big	1	1	1	1	1	1
Topknot of Pot's cover: Medium	1	1	1	1	1	1
Topknot of Pot's cover: Size	1	1	1	1	1	1
Tradition razor	5	4	3	7	6	5
trash dipper with handle slot: grade A	5	5	5	5	5	5
trash dipper: grade A	10	12	13	10	8	7
trash dipper: small size 345	4	6	5	2	3	4
U-lock: 3 pieces	20	20	20	20	20	20
U-lock: Harry Master, 115	20	20	20	20	20	20
U-lock: Harry Master, 55	20	20	20	20	20	20
U-lock: Harry Master, 75	20	20	20	20	20	20
U-lock: Harry Master, 95	20	20	20	20	20	20
Wall hooker 1x3	5	5	5	5	5	5
Wall hooker 1x8	5	5	5	5	5	5
Wall hooker: 3 in a row	2	2	2	2	2	2
Wall hooker: 4 in a row	2	2	2	2	2	2
Wall hooker: 5 in a row	2	2	2	2	2	2
Wall hooker: Fancy	3	3	3	3	3	3
Water bottle 1x3	4	3	5	6	2	4
Water bottle 1x3: Square shape	8	16	4	12	10	8
Water bottle 1x4	8	12	8	11	9	10
Water bottle: 558	2	2	2	2	2	2
Water bottle: Pumpkin 711	2	2	2	2	2	2
Water bottle: Pumpkin sport	2	2	2	2	2	2
Water bottle: pushed, small	2	2	2	2	2	2
Water canteen: 022	5	5	5	5	5	5
Water canteen: 999, soldier	10	15	4	17	3	11
Water canteen: 999-2.5, Perfect	3	3	3	3	3	3
Water canteen: Leo	2	2	2	2	2	2
Water canteen:Ice cream 618	2	2	2	2	2	2
Water canteen:Ikkusang8, No.468D	4	5	4	2	3	6
Water canteen:No.111	2	2	2	2	2	2
Water canteen:No.469X	2	2	2	2	2	2

Table A.1: Data of ordering quantity from invoice during May to August 2004 (Cont.)

English Name	Avg. Quantity Order	Ordering Quantity# 1	Ordering Quantity# 2	Ordering Quantity# 3	Ordering Quantity# 4	Ordering Quantity# 5
Water canteen:No.486D	3	3	3	3	3	3
Water canteen:No.486X	3	3	3	3	3	3
Water canteen:PB-395	3	3	3	3	3	3
Water canteen:PB-411	3	1	1	5	3	5
Water canteen:PB-426	3	4	4	3	2	2
Water canteen:PB-457	3	3	3	3	3	3
Water canteen:PB-487	2	2	2	2	2	2
Water canteen:PB-488	3	3	3	3	3	3
Water canteen:PB-493	3	3	3	3	3	3
Water canteen:PB-495	3	3	3	3	3	3
Water canteen:Tommy	2	2	2	2	2	2
Water canteen:n-ø	4	10	4	2	3	1
Water filter: 5 level	3	3	3	3	3	3
Water filter: Turbine	10	10	10	10	10	10
Water pourer: Big	12	22	11	5	11	11
Water pourer: Medium	5	5	5	5	5	5
Water pourer: Small	5	5	5	5	5	5
Water sprayer: 1008	5	5	5	5	5	5
Water sprayer: 2 in 1	6	6	6	6	6	6
Water sprayer: 589	10	11	16	8	5	10
Water sprayer: 590	10	15	12	8	7	8
Water sprayer: Bone shape, Murky	5	4	3	6	7	5
Water sprayer: Bone shape, transparency	5	5	5	5	5	5
Water sprayer: bottle gourd, Star S, 607	6	6	6	6	6	6
Water sprayer: Canon, Yellow	12	11	8	13	19	9
Water sprayer: foggy	50	62	45	71	33	39
Water sprayer: Lucky, Bell	12	12	12	12	12	12
Water sprayer: Smartwing	5	4	2	5	6	8
Water sprayer: Solo	6	4	5	8	10	3
Water sprayer: Taiwan, Transparency	15	22	12	11	15	15
Wax for Leather Shoe: Small	60	64	52	78	72	34
Whetstone	10	11	14	8	9	8
White board pen: pilot, Black	1	1	1	1	1	1
White board pen: pilot, Blue	1	1	1	1	1	1
White board pen: pilot, Red	1	1	1	1	1	1
Wine opener: 800	1	1	1	1	1	1
Wooden Brush: Rose, Clorful fiber	20	18	24	15	12	31
Wooden chopping block	10	15	8	12	5	10
Wooden Chopstick	5	5	5	5	5	5
Wooden color short pen	2	2	2	2	2	2
Wooden Pencil	2	2	2	2	2	2

Note:

Average of Quantity order= ( Sum of quantity order#1 to #5 )/5

Table A.2: Data of receiving date and ordering date during May to August 2004

English Name	Avg. interval of each ordering	Avg Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Cotton wool Shell, pot, JoJo	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
27 baht cotton wool	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
a cigarette lighter AS	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
a cigarette lighter Black Star	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
a cigarette lighter Pilot	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
a cigarette lighter Red Star	10	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
a cigarette lighter Rod Tai-Yo	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
a cigarette lighter Tai-Yo	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
A gas oven lighter grade A	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
A gas oven lighter grade C	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Adhesive tape for wiring( Black)	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Adhesive tape for wiring( Black) TOV	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Adhesive tape for wiring( Blue)	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Adhesive tape for wiring( Green)	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Adhesive tape for wiring( Red)	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Adhesive tape for wiring( White)	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Adhesive tape for wiring( Yellow)	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Aluminium foil long	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Aluminium foil short	10	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Aluminium Mop	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	10/6/2004	24/7/2004	17/8/2004
Artificial clay big size	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Artificial clay small size	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Back cleaning brush Twin	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Back scratching stick	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Badminton ball	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Basket 436, Shopsticks	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Basket CS 014	16	1.00	18/7/2004	8/2/2004	17/8/2004	9/11/2004	16/9/2004	17/7/2004	8/1/2004	16/8/2004	31/8/2004	15/9/2004
Basket CS 433 grade A	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Basket, Spoon, one slot	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Bath room cleaner Jackie, Pink	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Bath room cleaning brush	30	4.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Bath room cleaning brush Fish	30	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Bath room cleaning brush Hama	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Bath room cleaning brush Sack	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/5/2004	11/10/2004
Belamine spoon long	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Belamine spoon short	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Book 10 baht	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Book 5 baht	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Book Drawing-Small	25	2.00	6/8/2004	7/2/2004	26/7/2004	19/8/2004	9/12/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004	9/10/2004
Book tearable paper Big	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Book tearable paper Small	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Book tearable paper without line,Big	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Book tearable paper without line,Small	25	2.00	6/8/2004	7/2/2004	26/7/2004	19/8/2004	9/12/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004	9/10/2004
Bottle cleaning brush B1 with sponge	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Bottle cleaning brush Rabbit	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Bottle cleaning brush Twin head	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Bottle opener 200	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Bottle opener 777	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	25/5/2004	10/9/2004
Bottle opener 900	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Bottle opener A80	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Bowl 16cm, grade A, with handle	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Bowl 16cm, grade B, Mix	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Bowl 18cm, grade B, dark	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Bowl 20A	10	1.00	5/10/2004	19/5/2004	28/9/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Bowl 20cm, grade A, dark	10	1.00	5/10/2004	19/5/2004	28/9/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Bowl 20cm, grade B, dark	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Brooch in Pack	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Brooch Bee, 1	90	10.00	4/1/2004	29/6/2004	27/9/2004	26/12/2004	-	22/3/2004	19/6/2004	17/9/2004	16/12/2004	-
Brooch Bee, 2	90	10.00	4/1/2004	29/6/2004	27/9/2004	26/12/2004	-	22/3/2005	19/6/2005	17/9/2005	16/12/2005	-
Brooch Bee, 3	90	10.00	4/1/2004	29/6/2004	27/9/2004	26/12/2004	-	22/3/2006	19/6/2006	17/9/2006	16/12/2006	-
Brooch grade A	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Brooch Lucky	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Brooch Rose 0	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004



Table A.2:Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Brooch Rose 1	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
Brooch Rose 2	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
Brooch Rose 3	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
Brooch Rose 4	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Brooch tm. Gold	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Brooch tm. White	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Broom water brooms	20	4.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/6/2004	25/4/2004	5/9/2004	23/5/2004	6/6/2004
Broom water Samor	25	4.00	28/7/2004	16/8/2004	9/9/2004	10/3/2004	28/10/2004	24/7/2004	8/12/2004	9/5/2004	30/9/2004	24/10/2004
Brush Black meal of coconut	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Brush Brass 5 rows	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Brush Brass 6 rows	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Brush Brass 7 rows	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Brush Brass 7 Roses	14	2.00	4/10/2004	23/4/2004	5/7/2004	20/5/2004	6/2/2004	4/8/2004	21/4/2004	5/5/2004	18/5/2004	31/5/2004
Brush Brass Cous	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	21/10/2004
Brush Brass Hama	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Brush Brass Tiger	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Brush Brown meal of coconut	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Brush Nylon Color	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Brush Nylon Hama	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Brush Rose Brass	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Brush Rose Milk color	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Brush Rose Transparent color	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Buddism Ordanning set: Red	15	4.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/6/2004	20/4/2004	5/4/2004	18/5/2004	6/1/2004
Buddism Ordanning set: Yellow	15	4.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	14/7/2004	28/8/2004	8/11/2004	25/8/2004	9/9/2004
Can opener 5 rings	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
CD Cleanser set	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Cement cleaning Sponge: Tree	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Chair CS grade B	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Chair M. Big	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
chemical pen pilot. small, Black	45	5.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	15/4/2004	28/5/2004	7/12/2004	25/8/2004	10/8/2004
chemical pen pilot. small, Blue	45	5.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	15/4/2004	28/5/2004	9/12/2004	25/8/2004	12/8/2004
chemical pen pilot. small, Red	45	5.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	15/4/2004	28/5/2004	8/12/2004	25/8/2004	11/8/2004
Chopstick	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Cigarette and lighter container: gastank. blue	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Cigarette and lighter container: gastank. orange	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Cleaning frill Dozen pack	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Cleaning frill: Kilo	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cleaning sponge with net: Merry sponge	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Cleaning sponge with net: Modern	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Cleaning sponge with net: House wife	20	5.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/5/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004
Cleaning sponge with scrubber: Modern	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Cleaning sponge 3M. 2 purpose	45	3.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/1/2004	15/5/2004	28/6/2004	8/12/2004	25/9/2004
Cleaning sponge Hama, L.	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Cleaning sponge Tree, L.	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Cleaning sponge Tree, M	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Cleaning sponge Tree, S	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Cleaning stainless frill: Big brite	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Cleaning stainless frill: Poly	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/11/2004	17/12/2004
Cleaning tube	60	1.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/4/2004	7/2/2004	30/8/2005	28/10/2005	26/12/2005
Clipboard A5	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Clipper Black 108	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Clipper Black 109	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Clipper Black 110	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Clipper Black 111	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Clipper Black 112	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Clipper White 0	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Clipper White 2	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Clipper White 3	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Clipper White 4	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Clipper White 5	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Clipping Blade: Dragonfly	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Clipping Blade: Sakura	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Clothes for floor cleaning( Mob)	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Clothes hanger: 222 ( wire)	5	1.00	5/12/2004	16/5/2004	20/5/2004	24/5/2004	28/5/2004	5/11/2004	15/5/2004	19/5/2004	23/5/2004	27/5/2004
Clothes hanger: 222 ,plastic	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Clothes hanger: 3 rings	1	0.00	8/7/2004	8/8/2004	8/9/2004	8/10/2004	8/11/2004	8/7/2004	8/8/2004	8/9/2004	8/10/2004	8/11/2004
Clothes hanger: 5 holes	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Clothes hanger: 5 rings	1	0.00	8/7/2004	8/8/2004	8/9/2004	8/10/2004	8/11/2004	8/7/2004	8/8/2004	8/9/2004	8/10/2004	8/11/2004
Clothes hanger: 599, Black	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Clothes hanger: Aluminium, 639	7	2.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/8/2004	14/5/2004	20/5/2004	26/5/2004	6/1/2004
Clothes hanger: Aluminium, 646	7	2.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/8/2004	14/5/2004	20/5/2004	26/5/2004	6/1/2004
Clothes hanger: C1	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Clothes hanger: No 799	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Clothes hanger: PF221	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Clothes hanger: red heart-shaped, 55	15	2.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Clothes hanger: red heart-shaped, 99	7	2.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/8/2004	14/5/2004	20/5/2004	26/5/2004	6/1/2004
Clothes hanger: Round Shape	15	2.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Clothes hanger: Square Mini	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	17/8/2004	26/9/2004
Clothes hanger: Square, Twin	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Clothes hanger: Umbrella	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Comb: grade A No.801	15	3.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Comb: grade A No.802	15	3.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Comb: grade A No.803	15	3.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Comb: grade A No.804	15	3.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Comb: grade A No.805	15	3.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Comb: grade A No.811A	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Comb: Hair clipper, plastic	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Comb: Hair clipper, stainless	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Cone No1	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Cone No2	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cone No3	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Cone No4	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Cone No5	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cotton buds: 100 pieces in pack	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Cotton buds: 100 pieces in pack	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Cotton buds: 100 pieces in pack	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cotton buds: 50 pieces in pack	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Cotton buds: Fancy Giant size pot	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Cotton buds: Fancy Jumbo Shell Pot	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Cotton buds: Fancy Pot 2 slots	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Cotton buds: Square box: pineapple	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cotton buds: transparent small size pot	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Cotton wool: Ambulance bus	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Cup: 514: Transparent pattern	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Cup: 514: White pattern	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Cup: 688 Sakura, small	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Cup: 002 with Handle	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Cup: 004 with Handle, Cartoon pattern	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cup: 204 with Handle	15	1.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Cup: 205 with Handle	15	1.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Cup: 404 with Handle	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Cup: 45 Mitsu with Handle	20	5.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/5/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004
Cup: 475	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Cup: 639 Sakura, stripe with Cover	15	1.00	18/7/2004	8/11/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Cup: 733 with Handle	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Cup: A3 with Handle	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Cup: Arale	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Cup: Freshy	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Cup: Frog style 2012	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Cup: Kitty style 2013	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Cup: Marble 004	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Cup: P.S 10 ounces	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	11/7/2004	26/8/2004	10/9/2004
Cup: P.S 12 ounces	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Cup: P.S 70 ounces	90	3.00	4/1/2004	29/6/2004	27/9/2004	26/12/2004	-	29/3/2006	26/6/2006	24/9/2006	23/12/2006	-
Cup: Transparent, pineapple pattern	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Cup: Wine	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Curtain hooker. Color 1	60	3.00	5/5/2004	7/3/2004	5/18/2004	29/10/2004	27/12/2004	5/2/2004	30/6/2004	28/8/2004	26/10/2004	24/12/2004
Curtain hooker. Color 2	60	3.00	7/6/2004	9/3/2004	11/2/2004	30/12/2004	28/02/2005	7/3/2004	31/8/2004	31/10/2004	27/12/2004	25/02/2005
Curtain hooker. Color 3	60	3.00	6/12/2004	7/10/2004	2/7/2004	10/6/2004	1/3/2005	6/9/2004	7/7/2004	9/4/2004	10/3/2004	31/12/2004
Curtain hooker. Color 4	60	3.00	6/12/2004	7/10/2004	2/7/2004	10/6/2004	1/3/2005	6/9/2004	7/7/2004	9/4/2004	10/3/2004	31/12/2004
Curtain hooker. Color 5	60	3.00	5/5/2004	7/3/2004	5/18/2004	29/10/2004	27/12/2004	5/2/2004	30/6/2004	28/8/2004	26/10/2004	24/12/2004
Cutter 30-K	15	2.00	4/10/2004	24/4/2004	4/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Cutter 44-K	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Cutter ST-10	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Cutter ST-100	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Cutter ST-9	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Cutter 3 pieces	7	2.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/8/2004	14/5/2004	20/5/2004	26/5/2004	6/1/2004
CutterPI Colorful	7	2.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/8/2004	14/5/2004	20/5/2004	26/5/2004	6/1/2004
CutterPI with Blade	35	2.00	4/10/2004	14/5/2004	17/6/2004	21/7/2004	24/8/2004	4/8/2004	5/12/2004	15/6/2004	19/7/2004	22/8/2004
Dipper with short handle	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Dish liquid cleanser. Cleo	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Dish liquid cleanser. Sunny Wash 800cc	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Dish soap cleanser	60	1.00	7/6/2004	9/3/2004	11/2/2004	30/12/2004	28/02/2005	7/1/2004	29/8/2004	29/10/2004	25/12/2004	23/02/2005
Doctor gloves. L	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Doctor gloves. M	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Doctor gloves. S	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Dog chain. 20x6	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Dog chain. 22x6	45	2.00	4/1/2004	15/5/2004	28/7/2004	8/11/2004	25/9/2004	30/3/2004	13/5/2004	26/7/2004	8/9/2004	23/9/2004
Dog chain. 25x6	45	2.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	18/4/2004	6/1/2004	15/7/2004	28/8/2004	10/11/2004
Dog chain. 30x6	45	2.00	4/10/2004	24/5/2004	8/7/2004	21/9/2004	11/3/2004	4/8/2004	22/5/2004	8/5/2004	19/9/2004	11/1/2004
Dog chain. 35x6	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Dog chain. 45x6	45	2.00	4/8/2004	22/5/2004	6/5/2004	19/7/2004	9/1/2004	4/6/2004	20/5/2004	3/6/2004	17/7/2004	30/8/2004
Drawer lock	60	1.00	7/6/2004	9/3/2004	11/2/2004	30/12/2004	28/02/2005	7/1/2004	29/8/2004	29/10/2004	25/12/2004	23/02/2005
Dry Alcohol cup	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Dry cell. CAT. Big	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Dry cell. CAT. Small	90	3.00	4/1/2004	29/6/2004	27/9/2004	26/12/2004	-	29/3/2004	26/6/2004	24/9/2004	23/12/2004	-
Dry cell. Chinese. 2A	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Dry cell. Chinese. 3A	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Dry cell. Panasonic. 2A. Alkaline	30	1.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	27/8/2004	25/9/2004	24/10/2004	22/11/2004	21/12/2004
Dry cell. Panasonic. 2A. black	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Dry cell. Panasonic. 2A. green	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/6/2004	31/5/2004
Dry cell. Panasonic. 2A. red	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Dry cell. Panasonic. 3A. black	30	1.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	27/8/2004	25/9/2004	24/10/2004	22/11/2004	21/12/2004
Dry cell. Panasonic. 3A. Alkaline	30	1.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	27/8/2004	25/9/2004	24/10/2004	22/11/2004	21/12/2004
Dry cell. Panasonic. 9V. square shape	30	1.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	27/8/2004	25/9/2004	24/10/2004	22/11/2004	21/12/2004
Dry cell. Panasonic. size C. Middle	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Dry cell. Panasonic. size D. Big	30	1.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	27/8/2004	25/9/2004	24/10/2004	22/11/2004	21/12/2004
Elastic fabric 1 inch wide	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Elastic fabric 10	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Elastic fabric 11	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	16/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Elastic fabric 14	25	2.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	16/4/2004	5/10/2004	6/3/2004	27/6/2004	21/7/2004
Elastic fabric 16	25	2.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	16/4/2004	5/10/2004	6/3/2004	27/6/2004	21/7/2004
Elastic fabric 3/4 inch wide	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Elastic fabric 4	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Elastic fabric 6	25	2.00	6/5/2004	29/6/2004	23/7/2004	16/8/2004	9/9/2004	6/3/2004	27/6/2004	21/7/2004	14/8/2004	9/7/2004
Elastic fabric 8	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	15/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Envelope. airplane pattern	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Envelope. Cartoon pattern	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Envelope. National flag pattern	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Envelope. Pink stripe	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Envelope. Standard size. Cartoon	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Envelope. Standard size. Color	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Envelope. White long	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Envelope. White stripe	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Fabric cleaning Brush.003	60	2.00	5/5/2004	7/3/2004	5/18/2004	29/10/2004	27/12/2004	5/2/2004	29/6/2004	27/8/2004	25/10/2004	23/12/2004
Fabric cleaning Brush.031	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Fabric cleaning Brush.707	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Fabric cleaning Brush. Eastman 2 colors	60	4.00	7/6/2004	9/3/2004	11/2/2004	30/12/2004	28/02/2005	7/4/2004	9/1/2004	11/1/2004	28/12/2004	26/02/2005
Fabric cleaning Brush. Eastman. Bone	45	4.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2004	30/5/2004	13/7/2004	26/8/2004	10/9/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Fabric cleaning Brush: flat iron shape, brass	45	4.00	20/4/2004	6/3/2004	17.7.2004	30.8.2004	13.10.2004	16/4/2004	30/5/2004	13.7.2004	26.8.2004	10.9.2004
Fabric cleaning Brush: JCI	45	2.00	4/4/2004	18/5/2004	7.1.2004	15.8.2004	28.9.2004	4/2/2004	16/5/2004	29.6.2004	13.8.2004	26.9.2004
Fabric cleaning Brush: Nylon 888	30	3.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	25/6/2004	27/7/2004	25.8.2004	23.9.2004	22/10/2004
Fabric cleaning Brush: Nylon, flat iron	45	4.00	20/4/2004	6/3/2004	17.7.2004	30.8.2004	13/10/2004	16/4/2004	30/5/2004	13.7.2004	26.8.2004	10.9.2004
Fabric cleaning Brush: Nylon, flat iron, china	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26/6/2004	28/7/2004	26.8.2004	24.9.2004	23/10/2004
Fabric cleaning Brush: Rainbow, Samor	25	4.00	28/7/2004	16/8/2004	9.9.2004	10.3.2004	28/10/2004	24/7/2004	8/12/2004	9.5.2004	30.9.2004	24/10/2004
Fabric cleaning Brush: Samor, White fiber	45	4.00	20/4/2004	6/3/2004	17.7.2004	30.8.2004	13/10/2004	16/4/2004	30/5/2004	13.7.2004	26.8.2004	10.9.2004
Fabric cleaning soap: 3 stars	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26/6/2004	28/7/2004	26.8.2004	24.9.2004	23/10/2004
Fabric cleaning soap: Carus crane	30	3.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	25/6/2004	27/7/2004	25.8.2004	23.9.2004	22/10/2004
Fabric Gloves: eagle, colorful, nylon	15	3.00	18/7/2004	8/1/2004	15.8.2004	25.9.2004	13/9/2004	15/7/2004	29/7/2004	8.12.2004	26.8.2004	9.10.2004
Fabric Gloves: eye, size 10-12	45	3.00	24/5/2004	6/3/2004	21.7.2004	6.3.2004	17/10/2004	21/5/2004	6/4/2004	13.7.2004	26.8.2004	10.9.2004
Fabric Gloves: eye, size 132	20	3.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.7.2004	26/4/2004	5.10.2004	24.5.2004	14.10.2004
Fabric Gloves: eye, size 5-7	60	3.00	5/5/2004	7/3/2004	31.8.2004	25.10.2004	27/12/2004	5/2.2004	30/6/2004	28.8.2004	26.10.2004	24.12.2004
Fabric Gloves: eye, size 7-9	45	3.00	4/10/2004	24/5/2004	8.7.2004	25.9.2004	11/3/2004	4/7.2004	21/5/2004	8.4.2004	18.9.2004	31.10.2004
Fabric Gloves: eye, white, 125	40	3.00	19/5/2004	6/2/2004	16.7.2004	26.8.2004	10/12/2004	16.5.2004	28/5/2004	6.2.2004	26.5.2004	20.7.2004
Fabric Gloves: golden fish, colorful, nylon	25	1.00	15/5/2004	6/8/2004	7.2.2004	26.7.2004	19.8.2004	14.5.2004	6.7.2004	7.1.2004	25.7.2004	18.8.2004
Fabric Gloves: hot protector	45	3.00	4/4/2004	18/5/2004	7.1.2004	15.8.2004	28.9.2004	4/1.2004	15/5/2004	28.6.2004	8.12.2004	25.9.2004
Fabric Gloves: peacock, long, nylon	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26.6.2004	28.7.2004	26.8.2004	24.9.2004	23/10/2004
Fabric Gloves: peacock, sailclothes	30	2.00	28/6/2004	26/9/2004	25.10.2004	25.11.2004	22/12/2004	26.8.2004	24.9.2004	23.10.2004	21.11.2004	20.12.2004
Fabric Gloves: peacock, white, nylon	20	3.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.7.2004	21/5/2004	8.4.2004	18.9.2004	31.10.2004
Fabric Gloves: Red rim	20	4.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.6.2004	25.4/2004	5.9.2004	23.5.2004	6.6.2004
Fabric Gloves: Special weaver, rabbit	20	1.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.9.2004	28.4/2004	5.12.2004	26.5.2004	6.9.2004
Fabric Gloves: Sun	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.8.2004	27.4/2004	5.11.2004	25.5.2004	6.8.2004
Fabric Gloves: Sun, sailclothes	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26.6.2004	28.7.2004	26.8.2004	24.9.2004	23/10/2004
Fabric Gloves: white color, yellow rim	25	1.00	18/4/2004	5/12/2004	6.5.2004	25.6.2004	23/7/2004	15.4.2004	5/9.2004	6.2.2004	26.8.2004	20.7.2004
Fabric Gloves: Sun, nylon	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	5.8.2004	27.4.2005	6.11.2004	25.5.2005	7.8.2004
Fabric Hanger: Big Bee	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26.6.2004	28.7.2004	26.8.2004	24.9.2004	23/10/2004
Fabric Hanger: Big flowers	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.8.2004	27.4/2004	5.11.2004	25.5.2004	6.8.2004
Fabric Hanger: Daily	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.8.2004	27.4/2004	5.11.2004	25.5.2004	6.8.2004
Fabric Hanger: Green flowers	25	2.00	15/5/2004	6/8/2004	7.2.2004	27.5.2004	19.8.2004	13.5.2004	6.6.2004	30.6.2004	24.7.2004	17.8.2004
Fabric pincher: 16 pieces, Ploy	10	2.00	5/10/2004	19/5/2004	28.5.2004	6.7.2004	16/6/2004	5.8.2004	17.5.2004	27.5.2004	6.5.2004	14.6.2004
Fabric pincher: 18 pieces, CS	7	1.00	5/10/2004	16/5/2004	22.5.2004	28.5.2004	6/3/2004	5.7.2004	13.5.2004	19.5.2004	25.5.2004	31.5.2004
Fabric pincher: 18 pieces, round shape, Flower	25	4.00	28/7/2004	16/8/2004	9.9.2004	10.3.2004	28.10.2004	24.7.2004	8.12.2004	9.5.2004	30.9.2004	24/10/2004
Fabric pincher: 18 pieces, round shape, Merry	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26.6.2004	28.7.2004	26.8.2004	24.9.2004	23/10/2004
Fabric pincher: 18 pieces, turbine	5	1.00	5/8.2004	5/12/2004	16.5.2004	20.5.2004	24/5/2004	5.7.2004	5.11.2004	15.5.2004	19.5.2004	23.5.2004
Fabric pincher: 24 pieces, Put	15	1.00	18/7.2004	8/1/2004	15.8.2004	26.8.2004	13/9/2004	17.7.2004	31.7.2004	14.8.2004	26.8.2004	9.12.2004
Fabric pincher: 30 pieces, CS	10	1.00	5/10/2004	19/5/2004	28.5.2004	6.7.2004	16/6/2004	5.9.2004	18.5.2004	27.5.2004	6.5.2004	15.6.2004
Fabric pincher: 30 pieces, Put	10	1.00	5/10/2004	19/5/2004	28.5.2004	6.7.2004	16/6/2004	5.9.2004	18.5.2004	27.5.2004	6.5.2004	15.6.2004
Fabric pincher: Big size	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.8.2004	27.4.2004	5.11.2004	25.5.2004	6.8.2004
Fabric pincher: Japanese	30	3.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	25.6.2004	27.7.2004	25.8.2004	23.9.2004	22/10/2004
Fabric pincher: Wooden	20	1.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.9.2004	28.4.2004	5.12.2004	26.5.2004	6.9.2004
Fabric Softener: Pink	7	1.00	5/10/2004	16/5/2004	22.5.2004	28.5.2004	6.3.2004	5.7.2004	13.5.2004	19.5.2004	25.5.2004	31.5.2004
Fabric Softener: Sky-blue	7	1.00	5/10/2004	16/5/2004	22.5.2004	28.5.2004	6.3.2004	5.7.2004	13.5.2004	19.5.2004	25.5.2004	31.5.2004
Fabric Whitener	10	2.00	28/8.2004	26/9/2004	25.10.2004	23.11.2004	22/12/2004	26.8.2004	24.9.2004	23.10.2004	21.11.2004	20.12.2004
Feathers stick	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26.6.2004	28.7.2004	26.8.2004	24.9.2004	23/10/2004
Fees cleaning sponge: Jolly	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	5.8.2004	27.4.2005	6.11.2004	25.5.2005	7.8.2004
Flashlight: Chinese, Colorful plastic	20	1.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	4.9.2004	28.4.2004	5.12.2004	25.5.2004	6.9.2004
Flashlight: Gun A2500	25	1.00	15/5/2004	6/8/2004	7.2.2004	26.7.2004	19.8.2004	14.5.2004	6.7.2004	7.1.2004	25.7.2004	18.8.2004
Flashlight: Gun A2600	25	1.00	15/5/2004	6/8/2004	7.2.2004	26.7.2004	19.8.2004	14.5.2004	6.7.2004	7.1.2004	25.7.2004	18.8.2004
Flashlight: Gun S2200	25	1.00	15/5/2004	6/8/2004	7.2.2004	26.7.2004	19.8.2004	14.5.2004	6.7.2004	7.1.2004	25.7.2004	18.8.2004
Flashlight: Panasonic, FF-137	15	1.00	18/7/2004	8/1/2004	15.8.2004	29.8.2004	13/9/2004	17.7.2004	31.7.2004	14.8.2004	26.8.2004	9.12.2004
Flashlight: Panasonic, FF-327	15	1.00	18/7/2004	8/1/2004	15.8.2004	29.8.2004	13/9/2004	17.7.2004	31.7.2004	14.8.2004	26.8.2004	9.12.2004
Flashlight: PF-127	15	1.00	18/7/2004	8/1/2004	15.8.2004	29.8.2004	13/9/2004	17.7.2004	31.7.2004	14.8.2004	26.8.2004	9.12.2004
Flashlight: Tiger 300	30	1.00	28/8.2004	26/9/2004	25.10.2004	23.11.2004	22/12/2004	27.8.2004	25.9.2004	24.10.2004	22.11.2004	21.12.2004
Flashlight: Tiger 500	30	1.00	28/8.2004	26/9/2004	25.10.2004	23.11.2004	22/12/2004	27.8.2004	25.9.2004	24.10.2004	22.11.2004	21.12.2004
Flashlight: Tiger 700	30	1.00	28/8.2004	26/9/2004	25.10.2004	23.11.2004	22/12/2004	27.8.2004	25.9.2004	24.10.2004	22.11.2004	21.12.2004
Flipper used for frying:	15	2.00	4/10/2004	24/4/2004	5.8.2004	22.5.2004	6/5/2004	4.8.2004	5/2.2004	26.5.2004	19.6.2004	14.7.2004
Flipper used for frying: with holes	15	2.00	4/10/2004	24/4/2004	5.8.2004	22.5.2004	6/5/2004	4.8.2004	5/2.2004	26.5.2004	19.6.2004	14.7.2004
Floor cleaning brush: Nylon, Rose	15	2.00	4/10/2004	24/4/2004	5.8.2004	22.5.2004	6/5/2004	4.8.2004	5/2.2004	26.5.2004	19.6.2004	14.7.2004
Floor cleaning sponge: Rose	20	2.00	4/10/2004	29/4/2004	13.5.2004	27.5.2004	6/10/2004	5.8.2004	27.4.2005	6.11.2004	25.5.2005	7.8.2004
Floor cleaning sponge: Tree	15	1.00	18/7/2004	8/1/2004	15.8.2004	29.8.2004	13/9/2004	17.7.2004	31.7.2004	14.8.2004	26.8.2004	9.12.2004
Full head Hat: A3	30	2.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	26.6.2004	28.7.2004	26.8.2004	24.9.2004	23/10/2004
Full head Hat: linclothes	30	3.00	28/6/2004	30/7/2004	28.8.2004	26.9.2004	25/10/2004	25.6.2004	27.7.2004	25.8.2004	23.9.2004	22/10/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Full head Hat: loinclothes with cap	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Glass Cleaner: Buka	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Grilling sieve	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Hair Jel: Jemmy	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
High Cup: 355 with Cover	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Hot Suck Glue: Big	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Hot Suck Glue: Small	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Hot water pouch: Big: Kangaroo	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Hot water pouch: small	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Hot water pouch: stripe pattern, small	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Ice canteen Perfect: No 999-M5	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	5/8/2004
Ice canteen Star S: No 592	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Ice tray: pumpkin	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Indigo: Big bottle: Chicken	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Indigo: Big bottle: Crown	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Indigo: big square shape: Crown	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Indigo: bottle: Mokej	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Indigo: Medium bottle: Chicken	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Indigo: Small bottle: Chicken	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Indigo: square shape: Crown	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	23/10/2004
Indigo: square shape: Monkey	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Indigo: Square bottle: Chicken	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
Indigo: Liquid: Chicken	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Kerosene: Jun	25	5.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/9/2004	7/3/2004	27/7/2004	20/8/2004
Knife: Chinese: 103	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 104A	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 106W	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 108	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 109	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 1105	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 1168	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 1174	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 1177	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 1178	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 202	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 204	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Chinese: 205	30	5.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	23/8/2004	21/9/2004	20/10/2004	18/10/2004	17/12/2004
Knife: Kiwi: 172	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Knife: Kiwi: 173	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Knife: Kiwi: 193	26	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Knife: Kiwi: 194	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 195	36	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 21	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 22	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 246	36	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 247	36	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 474	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 475	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 476	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 477	36	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Knife: Kiwi: 501	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Knife: Kiwi: 502	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Knife: Vegetable: Wildman ,small	36	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Knife: Vegetable: Wildman 1 blade	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Knife: Vegetable: Wildman 2 blades	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Ladle: Belanine	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Ladle: Chinese pattern	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Ladle: Colorful handle	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Latex glue 5 Baht	10	3.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Latex glue 10 Baht	15	3.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Leather polish: Kiwi, Black	36	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Leather polish: Kiwi, Brown	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Leather polish: Kiwi, Classic Black	36	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Leather polish: Kwi, Classic Brown	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Light bulb of Flashlight: 24V No.1	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Light bulb of Flashlight: 24V No.2	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Light bulb of Flashlight: 24V No.3	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Light bulb of Flashlight: 24V No.4	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Light bulb of Flashlight: 24V No.5	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Light bulb, Superlamp 200W	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Lubricant oil for machinery: flat bottle	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Lubricant oil for machinery: round bottle	15	2.00	4/10/2004	24/4/2004	9/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Lunch box 584-2	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/04	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Lunch box 921	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Lunch box 922	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Lunch box 923	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Magnifying glass	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Meji color pen	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Menthol Mid	45	2.00	4/1/2004	15/5/2004	28/7/2004	8/11/2004	25/9/2004	30/3/2004	13/5/2004	26/7/2004	8/9/2004	23/9/2004
Mentholated ointment	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Metal polisher Big, Brasso	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Metal polisher Medium, Brasso	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Metal polisher Big Vnol	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Metal polisher Small, Brasso	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
Metal polisher Small, Vnol	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Milk bottle: Kid, Chinese	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Mirror with Plastic frame	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Mirror with Swinger	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Mirror: bath room	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Mirror Flower 10x14 ,hang	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Mirror Flower 12x16 ,hang	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Mirror Flower 14x20 ,hang	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Mirror Flower 7x10 ,hang	40	2.00	28/6/2004	8/9/2004	9/7/2004	10/6/2004	11/4/2004	26/6/2004	8/7/2004	9/5/2004	10/4/2004	11/2/2004
Mirror Flower 8x12 ,hang	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Mirror: Flower No.10	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Mirror: Flower No.12	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Mirror: Flower No.4	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Mirror: Flower No.5	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Mirror: Flower No.6	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Mirror: Flower No.7	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Mirror: Flower No.8	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Mirror: Flower No.9	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Mosquitoes wiping stick container	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Mosquitoes wiping stick container: long	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Mop with round fabric	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Mosquitoes wiping joss stick Dragon	25	2.00	4/10/2004	5/4/2004	2/8/2004	21/6/2004	15/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Mosquitoes wiping reagent: Ko-Yo-15	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Mothball ATM, big	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Mothball ATM, small	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Mothball Big pack 1x2	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Mothball Jumbo size	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Mothball Kilo	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Mothball: Small pack	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Nail cleaning brush Big, transparent	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2005	5/11/2004	25/5/2004	6/8/2004
Nail cleaning brush flat iron shape	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Nail cutter: 129	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Nail cutter: 211	45	2.00	4/1/2004	15/5/2004	28/7/2004	8/11/2004	25/9/2004	30/3/2004	13/5/2004	26/7/2004	8/9/2004	23/9/2004
Nail cutter: 309	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Nail cutter: 600	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Nail cutter: 602	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
Nail cutter: 777, 211	75	1.00	20/5/2004	18/7/2004	15/9/2004	13/11/2004	19/5/2004	17/7/2004	14/9/2004	11/12/2004	1/10/2005	1/10/2005
Nail cutter: 999, Big	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Nail cutter: 999, Small	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Nail polisher Big size	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Nail polisher Small size	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Nail polisher: Square bottle	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004



Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Padlock Wolf 50mm	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Padlock Wolf 50mm	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Padlock World 50mm	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Painting brush No 1	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Painting brush: No 1.5	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Painting brush: No 2	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Painting brush: No 2.5	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Painting brush: No 3	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Painting brush: No 4	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Pan cleaning brush meal of coconut 2014	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
paper card gold seam 007	25	2.00	6/8/2004	7/2/2004	26/7/2004	19/8/2004	9/12/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004	9/9/2004
paper card Thai	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
paper card Winner	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Pen Diamond	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Pen Lancer 626 Blue	45	4.00	26/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2004	30/5/2004	13/7/2004	26/8/2004	10/9/2004
Pen Lancer 813 Black	45	4.00	26/4/2005	7/3/2004	17/7/2005	30/8/2005	13/10/2005	16/4/2005	30/5/2005	13/7/2005	26/8/2005	11/9/2004
Pen Lancer 813 Red	45	4.00	26/4/2007	9/3/2004	17/7/2007	30/8/2007	13/10/2007	16/4/2007	30/5/2007	13/7/2007	26/8/2007	13/9/2004
Pen Lancer 815 Blue	45	4.00	26/4/2006	8/3/2004	17/7/2006	30/8/2006	13/10/2006	16/4/2006	30/5/2006	13/7/2006	26/8/2006	12/9/2004
Pen Lancer 825 Black	45	4.00	26/4/2008	10/3/2004	17/7/2008	30/8/2008	13/10/2008	16/4/2008	30/5/2008	13/7/2008	26/8/2008	14/9/2004
Pen Lancer 825 Blue	45	4.00	26/4/2010	12/3/2004	17/7/2010	30/8/2010	13/10/2010	16/4/2010	30/5/2010	13/7/2010	26/8/2010	16/9/2004
Pen Lancer 825 Red	45	4.00	26/4/2009	11/3/2004	17/7/2009	30/8/2009	13/10/2009	16/4/2009	30/5/2009	13/7/2009	26/8/2009	15/9/2004
Pen Lancer 878 Black	45	4.00	26/4/2011	13/3/2004	17/7/2011	30/8/2011	13/10/2011	16/4/2011	30/5/2011	13/7/2011	26/8/2011	17/9/2004
Pen Lancer 878 Blue	45	4.00	26/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2013	30/5/2013	13/7/2013	26/8/2013	19/9/2004
Pen Lancer 878 Red	45	4.00	26/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2012	30/5/2012	13/7/2012	26/8/2012	18/9/2004
Pen Lancer 915 Black	45	4.00	26/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2014	30/5/2014	13/7/2014	26/8/2014	20/9/2004
Pen Lancer 915 Blue	45	4.00	26/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2016	30/5/2016	13/7/2016	26/8/2016	22/9/2004
Pen Lancer 915 Red	45	4.00	26/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2015	30/5/2015	13/7/2015	26/8/2015	21/9/2004
Pencil multi-head	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Pencil multi-head Diamond	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Perfume gel G&G	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Photo Album Big size	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
Photo Album Jumbo size	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Photo Album Medium size	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Photo Album Small size	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
pincer with cutting head: diamond	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
pincer with sharp head: diamond	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	20/7/2004	9/2/2004	16/10/2004
pincer: diamond	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Pingpong ball orange	25	1.00	4/10/2004	5/4/2004	28/5/2004	23/6/2004	17/7/2004	4/9/2004	5/3/2004	27/5/2004	22/6/2004	16/7/2004
Pingpong ball white	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/2/2004	18/8/2004
Plastic bag with lock	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Plastic binder	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Plastic bucket 3.5	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Plastic bucket Black 16	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Plastic bucket Black 18	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Plastic bucket Yellow 2.5	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Plastic bucket Yellow 3.5	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Plastic bucket Yellow 4.5	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
plastic card Winner 222	45	2.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	22/5/2004	6/5/2004	19/7/2004	9/2/2004	15/10/2004
Plastic fork short	60	2.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/1/2004	29/6/2004	27/8/2004	25/10/2004	23/12/2004
Plastic spoon long	60	2.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/1/2004	29/6/2004	27/8/2004	25/10/2004	23/12/2004
Plastic spoon: short	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Plastic spoon-fork	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Plug head Black	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Plug head White	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Plug Receptable head Black	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Pollution filter clothes blue	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Pot mender	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Power line of a flat iron	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	16/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Power line of a frying pan	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Power line of a pot	25	2.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	16/4/2004	5/10/2004	6/3/2004	27/6/2004	21/7/2004
Power plug receptable 10M, AMC	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Power plug receptable 10M, Motto	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Power plug receptable 2001-10	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004



Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Power plug receptable 2001-11	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Power plug receptable 2001-5	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Power plug receptable 2001-8	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Power plug receptable 2001-9	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Power plug receptable 20M, AMC	45	2.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	18/4/2004	6/1/2004	15/7/2004	28/8/2004	10/11/2004
Power plug receptable 5M, Moxto	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Power plug receptable 8M, AMC	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Power plug receptable Nagas 10M	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Power plug receptable Nagas 5M	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Power plug receptable Nagas 8M	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Power plug receptable NS-1 Nakashi	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Power plug receptable SUI. triangle shape	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Price tag Shooter	30	2.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/8/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Price Tag sticker	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Pumping tube plastic	45	2.00	4/8/2004	22/5/2004	6/5/2004	19/7/2004	9/1/2004	4/6/2004	20/5/2004	3/6/2004	17/7/2004	30/8/2004
Razor 4 pieces in one pack	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Razor Double blades SuperMax	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Razor Fancy	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Razor Feather	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Razor Gillette Thin 2	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	11/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Razor Green Sayuri	60	2.00	7/6/2004	9/3/2004	11/2/2004	30/12/2004	-	7/2/2004	30/8/2004	30/10/2004	26/12/2004	-
Razor Karat	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Razor S Doll	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Razor single blades Gillette Click	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Razor with 2 blades	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Razor with Nail cutter	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Razor Yellow Sayuri	60	2.00	6/12/2004	7/10/2004	9/7/2004	10/6/2004	1/3/2005	6/8/2004	7/6/2004	9/3/2004	10/2/2004	31/12/2004
Razor Doctorll	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Razor TCI Set	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Razor Blade Atta	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Razor Blade Dorgo	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Razor Blade Feather	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Razor Blade SuperMax	45	2.00	4/10/2004	24/5/2004	8/7/2004	21/9/2004	11/3/2004	4/8/2004	22/5/2004	8/5/2004	19/9/2004	11/11/2004
Razor Blade SuperStainless	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Razor Blade Superthin	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Refilled Gas Buca, Jumbo	25	2.00	6/8/2004	7/2/2004	26/7/2004	19/8/2004	9/12/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004	9/10/2004
Refilled Gas Buca, Small	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Ring 500 pieces chain	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Ring Big size	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Ring Medium size	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Ring Small size	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Rubber binder big	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Rubber binder small	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Rubber gloves Canon, L	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Rubber gloves Canon, M	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Rubber gloves Canon, S	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Rubber gloves Dragon, L	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Rubber gloves Dragon, M	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Rubber gloves Dragon, S	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Rubber gloves OK, 7.5, cream color	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Rubber gloves OK, 7.5, orange color	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Rubber gloves OK, 8.5, cream color	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Rubber gloves OK, 8.5, orange color	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Rubber gloves Panda, Black, L	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Rubber gloves Panda, Black, M	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Rubber gloves Panda, Black, S	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Rubber gloves Panda, Goose, 7.5, Pink	14	1.00	18/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004	17/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Rubber gloves Panda, Goose, 8.5, Pink	14	1.00	18/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004	17/7/2004	30/7/2004	13/8/2004	27/8/2004	9/11/2004
Rubber gloves Panda, Orange, L	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Rubber gloves Panda, Orange, M	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Rubber gloves Panda, Orange, S	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Rubber gloves PVC, White, M	60	3.00	5/9/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/2/2004	30/6/2004	28/8/2004	26/10/2004	24/12/2004
Rubber gloves Sun, Orange, L	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Rubber gloves Sun, Orange, M	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Rubber gloves Sun, Orange, S	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Rug egg shape	15	4.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/6/2004	20/4/2004	5/4/2004	18/5/2004	6/1/2004
Rug heart shape	15	4.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	14/7/2004	28/8/2004	8/11/2004	25/8/2004	9/9/2004
Rug round shape	15	4.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	14/7/2004	28/8/2004	8/11/2004	25/8/2004	9/9/2004
Rug small	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Rug square shape	15	4.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/6/2004	20/4/2004	5/4/2004	18/5/2004	6/1/2004
Rug weaved	20	5.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/5/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004
Sauce bottle Orange	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Sauce bottle Transparency	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Saving box Big cylinder A	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Saving box Fat A	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Saving box Giant, A	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Saving box Medium A	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Saving box Medium A, Kid	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Saving box Medium B	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Saving box Star, S100-4	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Saving box Star, S1005-4	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Saving box Tim A	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Scissors 8 inches, 999	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Scissors Bcc, 304	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Scissors Chinese yellow handle	30	5.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	7/3/2004	17/5/2007	31/5/2007	14/7/2007	27/8/2007
Scissors Jasmine	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Scissors Mei, Rabbit	25	2.00	18/4/2004	5/12/2004	6/5/2004	29/6/2005	23/7/2004	16/4/2004	5/10/2004	6/3/2004	27/6/2004	21/7/2004
Scissors Orange handle	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Scissors paper set	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Scissors Rose, 304	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004
Scissors Rose, 33	25	2.00	18/4/2004	5/12/2004	6/5/2004	29/6/2005	23/7/2004	16/4/2004	5/10/2004	6/3/2004	27/6/2004	21/7/2004
Scissors Rose, 538	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Scissors Rose, 917	25	2.00	6/5/2004	29/6/2004	23/7/2004	16/8/2004	9/9/2004	6/3/2004	27/6/2004	21/7/2004	14/8/2004	9/7/2004
Scissors Rubber handle size 1	45	5.00	4/8/2004	22/5/2004	6/5/2004	19/7/2004	9/1/2004	4/3/2004	17/5/2004	31/5/2004	14/7/2004	27/8/2004
Scissors Rubber handle size 2	45	5.00	5/8/2004	22/5/2005	7/5/2004	19/7/2005	10/1/2004	5/3/2004	17/5/2005	31/5/2005	14/7/2005	27/8/2005
Scissors Rubber handle size 3	45	5.00	6/8/2004	22/5/2006	8/5/2004	19/7/2006	11/1/2004	6/3/2004	17/5/2006	31/5/2006	14/7/2006	27/8/2006
Scissors thread, black	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Scissors Wildman 03A	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	15/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Scissors Wildman 04A	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	15/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Scissors Wildman 05A	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	15/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Screw driver 2 pieces in set	45	2.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	18/4/2004	6/1/2004	15/7/2004	28/8/2004	10/11/2004
Screw driver 4 pieces in set	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Screw driver for electrical test	60	3.00	6/12/2004	7/10/2004	9/7/2004	10/6/2004	1/3/2005	6/9/2004	7/7/2004	9/4/2004	10/3/2004	31/12/2004
Screw driver for watch	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Screw driver with 3 inches punch head	60	3.00	5/5/2004	7/1/2004	31/8/2004	29/10/2004	27/12/2004	5/2/2004	30/6/2004	28/8/2004	26/10/2004	24/12/2004
Screw driver with 4 inches punch head	60	3.00	7/6/2004	9/1/2004	11/2/2004	30/12/2004	28/02/2005	7/3/2004	31/8/2004	31/10/2004	27/12/2004	25/02/2005
Screw driver with switching head	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Scrubber with Handle Black	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Scrubber with sponge Merrybit Twin	25	2.00	6/8/2004	7/2/2004	26/7/2004	19/8/2004	9/12/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004	5/10/2004
Scrubber 3M	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	5/10/2004
Scrubber Bigsize 1mx2m	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Scrubber Diamond	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Scrubber Elephant	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Scrubber Merrybit, Original	25	2.00	6/8/2004	7/2/2004	26/7/2004	19/8/2004	9/12/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004	5/10/2004
Scrubber Set 10	15	3.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	5/10/2004
Scrubber Set 11	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Scrubber Set 14	15	3.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	5/10/2004
Scrubber Set 1x3	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Shoe brush Herping	45	4.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2004	30/5/2004	13/7/2004	26/8/2004	10/9/2004
Shoe polish big, black	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Shoe polish small, black	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Shoe polish small, brown	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Shoe rope 24 inches, Black	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Shoe rope 24 inches, Black, Big	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Shoe rope 24 inches, Black, Flat	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Shoe rope 24 inches, Brown	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004



Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
shrink adhesive tape 1 inche big size	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
shrink adhesive tape 1.5 inche big size	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
shrink adhesive tape 2 inche big size	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
shrink adhesive tape 3/4 inche	20	5.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/5/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004
shrink adhesive tape 3/4 inche big size	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Soap box: 2 slots	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Soap box: 351P Transparent	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Soap box: 351P White	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Soap box: 771	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Soap box: Kiak	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Soap box: Pearl	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Soap box: Shinjung	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Soap box: Transparent stripes	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Soap box: White stripes	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Soap Big Tamamine	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Soap Ginger	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Soap: kok-leang	60	3.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/2/2004	30/6/2004	28/8/2004	26/10/2004	24/12/2004
Soap: Laura	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Soap: Small Cucumber	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/8/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Soap: Tamarine	30	2.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Soap: Ya-Un	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Socks: business, Mix color	30	2.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Socks: short, Mix color	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Spoon: Elephant, short	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Spoon: Panda, short	20	4.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	25/4/2004	5/9/2004	23/5/2004	6/10/2004
Spoon: short, Zebra	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Stainless Cutter L-120	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Stainless spoon: coffee	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Stainless spoon: Jet	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Stainless spoon-fork+C	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Staple wire	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Stapler	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	26/4/2004	5/10/2004	25/5/2004	14/7/2004
Steel pot stand	30	1.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	27/8/2004	25/9/2004	24/10/2004	22/11/2004	21/12/2004
Super Glue: Ateco	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
Super Glue: Chinese	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Super Glue: Kenji	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Tape Cleanser set	30	2.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Tape: 2 side glue, Loose size 1x1	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: Box closer: murky color	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	5/12/2004
Tape: Box closer: transparency	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Tape: Osaka 1meter	15	2.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	16/7/2004	30/7/2004	13/8/2004	27/8/2004	9/12/2004
Tape: transparency 1 inche 36 yard	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 1/2 inche 10 yard	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 1/2 inche 3 yards	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 1/2 inche 36 yard, big	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 1/2 inche 36 yard, small	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 1/2 inche 72 yard	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 3/4 inche 36 yard	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Tape: transparency 3/4 inche 72 yard	30	3.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Ten bahit cotton wool	30	2.00	28/8/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Thread: 1 bahit, YNC Black	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	5/12/2004
Thread: 1 bahit, YNC Dark gray	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	5/12/2004
Thread: 1 bahit, YNC Mix	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	5/12/2004
Thread: 1 bahit, YNC White	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	5/12/2004
Thread: 1 bahit, YNC Yellow	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	5/12/2004
Thread: 10 bahit set, Mix	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Thread: 10 bahit set, White-Black	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Thread: A Black	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Thread: A Dark gray	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Thread: A Mix	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Thread: A White	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Thread: A White-Black	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Thread: Pink set	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2005	6/11/2004	25/5/2005	7/8/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Thread Sailing ship, Black	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Thread Sailing ship, Mix	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Thread Sailing ship, White	10	1.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/9/2004	18/5/2004	27/5/2004	6/6/2004	15/6/2004
Tissue box	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Toothbrush 12 in one box, Medium Victory	60	4.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/3/2004	31/6/2004	29/8/2004	27/10/2004	25/12/2004
Toothbrush 12 in one box, Soft Victory	60	4.00	7/6/2004	9/3/2004	11/2/2004	10/12/2004	28/02/2005	7/4/2004	9/1/2004	11/1/2004	28/12/2004	26/02/2005
Toothbrush 3 in one pack JGA, transparent	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Toothbrush 3 in one pack JGA, turbid	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Toothbrush 30 in one box, Medium Victory	45	4.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2004	30/5/2004	13/7/2004	26/8/2004	10/9/2004
Toothbrush 30 in one box, Soft Victory	30	4.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/3/2004	31/6/2004	29/8/2004	27/10/2004	25/12/2004
Toothbrush CASA, 203	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Toothbrush CASA, 204	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Toothbrush CASA, 205	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Toothbrush CASA, 207	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Toothbrush CASA, 208	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Toothbrush CASA, 210	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Toothbrush Chinese, Adult 650	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Toothbrush Chinese, Adult 940	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush Chinese, Kid	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Toothbrush JAGA, 674	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush JAGA, 690	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush JAGA, 698	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush JAGA, 699	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush JAGA, 739	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush JAGA, 740	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Toothbrush Jomana	60	2.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/3/2004	29/6/2004	27/8/2004	25/10/2004	23/12/2004
Toothbrush Kid, Komo	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Toothbrush OralB Med	25	2.00	4/10/2004	5/4/2004	28/5/2004	21/6/2004	16/7/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Toothbrush OralB Soft	25	2.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	16/4/2004	5/10/2004	6/3/2004	27/6/2004	21/7/2004
Toothbrush OSAKA, 204	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Toothbrush OSAKA, 205	30	2.00	28/6/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Toothbrush OSAKA, 206	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Toothbrush Popular Eastman	45	4.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2004	30/5/2004	13/7/2004	26/8/2004	10/9/2004
Toothbrush Slim Victory	30	4.00	5/5/2004	7/3/2004	31/8/2004	29/10/2004	27/12/2004	5/3/2004	31/6/2004	29/8/2004	27/10/2004	25/12/2004
Toothbrush Soft, transparent Eastman	45	4.00	20/4/2004	6/3/2004	17/7/2004	30/8/2004	13/10/2004	16/4/2004	30/5/2004	13/7/2004	26/8/2004	10/9/2004
Toothpaste squeezer, murky	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Toothpaste squeezer, transparency	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Toothpick : Nile	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Toothpick 1x10	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	5/8/2004	27/4/2004	6/11/2004	25/5/2004	7/8/2004
Toothpick 2in1	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Toothpick Bamboo, Large	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Toothpick Bamboo, Medium	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Toothpick Bamboo, Small	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	5/12/2004	26/5/2004	6/9/2004	6/9/2004
Toothpick Bandang, Medium	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	26/8/2004	10/9/2004
Topknot of Pot's cover, Big	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Topknot of Pot's cover, Medium	30	2.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	26/6/2004	28/7/2004	26/8/2004	24/9/2004	23/10/2004
Topknot of Pot's cover, Size	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Tradition razor	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
trash dipper with handle slot, grade A	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
trash dipper, grade A	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
trash dipper, small size 345	10	2.00	5/10/2004	19/5/2004	28/5/2004	6/7/2004	16/6/2004	5/8/2004	17/5/2004	27/5/2004	6/5/2004	14/6/2004
U-lock, 3 pieces	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
U-lock, Harry Master, 115	60	2.00	6/12/2004	7/10/2004	9/7/2004	10/6/2004	1/3/2005	6/8/2004	7/6/2004	9/3/2004	10/2/2004	31/12/2004
U-lock, Harry Master, 55	45	2.00	4/4/2004	18/5/2004	7/1/2004	15/8/2004	28/9/2004	4/2/2004	16/5/2004	29/6/2004	13/8/2004	26/9/2004
U-lock, Harry Master, 75	60	2.00	6/12/2004	7/10/2004	9/7/2004	10/6/2004	1/3/2005	6/8/2004	7/6/2004	9/3/2004	10/2/2004	31/12/2004
U-lock, Harry Master, 95	60	2.00	6/12/2004	7/10/2004	9/7/2004	10/6/2004	1/3/2005	6/8/2004	7/6/2004	9/3/2004	10/2/2004	31/12/2004
Wall hooker 1x3	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/7/2004	21/5/2004	8/4/2004	18/9/2004	31/10/2004
Wall hooker 1x8	25	3.00	18/4/2004	5/12/2004	6/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Wall hooker 3 in a row	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Wall hooker, 4 in a row	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Wall hooker, 5 in a row	7	1.00	5/10/2004	16/5/2004	22/5/2004	28/5/2004	6/3/2004	5/7/2004	13/5/2004	19/5/2004	25/5/2004	31/5/2004
Wall hooker, Fancy	30	1.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Water bottle 1x3	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004

Table A.2: Data of receiving date and ordering date during May to August 2004 (Cont.)

English Name	Avg. Interval of each ordering	Avg. Lead time	Receiving Date#1	Receiving Date#2	Receiving Date#3	Receiving Date#4	Receiving Date#5	Ordering date#1	Ordering date#2	Ordering date#3	Ordering date#4	Ordering date#5
Water bottle 1x3, Square shape	25	3.00	18/4/2004	5/12/2004	1/5/2004	29/6/2004	23/7/2004	15/4/2004	5/9/2004	6/2/2004	26/6/2004	20/7/2004
Water bottle 1x4	30	3.00	28/6/2004	30/7/2004	25/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Water bottle 558	30	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water bottle: Pumpkin 711	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	23/5/2004	6/8/2004
Water bottle: Pumpkin sport	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water bottle: pushod, small	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water canteen: 022	30	1.00	28/6/2004	30/7/2004	25/8/2004	26/9/2004	25/10/2004	27/6/2004	29/7/2004	27/8/2004	25/9/2004	24/10/2004
Water canteen: 999, soldier	30	2.00	28/8/2004	26/9/2004	24/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Water canteen 999-2.5, Perfect	15	2.00	4/10/2004	24/4/2004	5/8/2004	22/5/2004	6/5/2004	4/8/2004	5/2/2004	26/5/2004	19/6/2004	14/7/2004
Water canteen: Leo	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Water canteen lcc cream 618	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Water canteen: IkkusangR, No 468D	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water canteen No 111	15	1.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	17/7/2004	31/7/2004	14/8/2004	28/8/2004	9/12/2004
Water canteen: No 469X	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water canteen: No 486D	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water canteen No 486X	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water canteen PB-395	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water canteen PB-411	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Water canteen PB-426	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water canteen PB-457	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Water canteen PB-487	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water canteen PB-488	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Water canteen PB-493	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water canteen PB-495	20	3.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Water canteen Tommy	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Water canteen: n-b	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water filter: 5 level	30	3.00	28/6/2004	30/7/2004	25/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Water filter: Turbine	15	3.00	18/7/2004	8/1/2004	15/8/2004	29/8/2004	13/9/2004	15/7/2004	29/7/2004	8/12/2004	26/8/2004	9/10/2004
Water pourer: Big	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water pourer: Modium	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water pourer: Small	25	2.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	13/5/2004	6/6/2004	30/6/2004	24/7/2004	17/8/2004
Water sprayer 1008	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Water sprayer: 2 in 1	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Water sprayer: 589	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water sprayer 590	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Water sprayer: Bone shape, Murky	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004
Water sprayer: Bone shape, transparency	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Water sprayer: bottle gourd, Star S, 607	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Water sprayer: Canon Yellow	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Water sprayer: foggy	30	3.00	28/6/2004	30/7/2004	25/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Water sprayer: Lucky, Bell	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Water sprayer: Smartwing	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	25/8/2004	10/9/2004
Water sprayer Solo	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Water sprayer: Taiwan, Transparency	25	1.00	15/5/2004	6/8/2004	7/2/2004	26/7/2004	19/8/2004	14/5/2004	6/7/2004	7/1/2004	25/7/2004	18/8/2004
Wax for Leather Shoe: Small	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Whetstone	45	1.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	23/5/2004	6/6/2004	12/7/2004	12/2004	16/11/2004
White board pen: pilot, Black	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
White board pen: pilot, Blue	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
White board pen: pilot, Red	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Wine opener 800	45	3.00	24/5/2004	6/7/2004	21/7/2004	9/3/2004	17/10/2004	21/5/2004	6/4/2004	13/7/2004	25/8/2004	10/9/2004
Wooden Brush: Rose, Clorful fiber	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Wooden chopping block	30	3.00	28/6/2004	30/7/2004	28/8/2004	26/9/2004	25/10/2004	25/6/2004	27/7/2004	25/8/2004	23/9/2004	22/10/2004
Wooden Chopstick	20	2.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/8/2004	27/4/2004	5/11/2004	25/5/2004	6/8/2004
Wooden color short pen	20	1.00	4/10/2004	29/4/2004	13/5/2004	27/5/2004	6/10/2004	4/9/2004	28/4/2004	5/12/2004	26/5/2004	6/9/2004
Wooden Pencil	30	2.00	28/8/2004	26/9/2004	25/10/2004	23/11/2004	22/12/2004	26/8/2004	24/9/2004	23/10/2004	21/11/2004	20/12/2004

Note

Avg. Interval of each ordering = (( ordering date#5-ordering date#4)+ ( ordering date#4-ordering date#3).....+ ( ordering date#2-ordering date#1))/ 5

Avg. Lead time =(receiving date#1-ordering date#1)+(receiving date#2-ordering date#2).....+(receiving date#5-ordering date#5))/5

Table A.3: Data of safety stock from the recording book during May to August 2004

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Cotton wool: Shell, pot, JoJo	2	2	2	2	2	2
27 baht cotton wool	1	1	1	1	1	1
a cigarette lighter: AS	0	0	0	0	0	0
a cigarette lighter: Black Star	0	0	0	0	0	0
a cigarette lighter: Pilot	0	0	0	0	0	0
a cigarette lighter: Red Star	0	0	0	0	0	0
a cigarette lighter: Red Tai-Yo	5	5	5	5	5	5
a cigarette lighter: Tai-Yo	5	5	5	5	5	5
A gas oven: lighter grade A	1	1	1	1	1	1
A gas oven: lighter grade C	3	3	3	3	3	3
Adhesive tape for wiring( Black)	3	5	6	2	1	1
Adhesive tape for wiring( Black) TOV	0	0	0	0	0	0
Adhesive tape for wiring( Blue)	0	0	0	0	0	0
Adhesive tape for wiring( Green)	0	0	0	0	0	0
Adhesive tape for wiring( Red)	0	0	0	0	0	0
Adhesive tape for wiring( White)	0	0	0	0	0	0
Adhesive tape for wiring( Yellow)	0	0	0	0	0	0
Aluminium foil: long	2	2	2	2	2	2
Aluminium foil: short	2	2	2	2	2	2
Aluminium Mop	2	2	2	2	2	2
Artificial clay: big size	2	2	2	1	5	0
Artificial clay: small size	1	0	1	1	1	2
Back cleaning brush: Twin	2	2	2	2	2	2
Back scratching stick	0	0	0	0	0	0
Badminton: ball	0	0	0	0	0	0
Basket: 436, Shopsticks	0	0	0	0	0	0
Basket: CS 014	1	1	1	1	1	1
Basket: CS 433 grade A	1	1	1	1	1	1
Basket: Spoon, one slot	0	0	0	0	0	0
Bath room cleaner: Jackie, Pink	3	3	3	3	3	3
Bath room cleaning brush	6	9	7	4	4	6
Bath room cleaning brush: Fish	1	1	1	1	1	1
Bath room cleaning brush: Hama	1	1	1	1	1	1
Bath room cleaning brush: Sack	1	1	1	1	1	1
Belanine spoon: long	2	2	2	2	2	2
Belanine spoon: short	2	2	2	2	2	2
Book: 10 baht	1	1	1	1	1	1
Book: 5 baht	1	1	1	1	1	1
Book: Drawing, Small	0	0	0	0	0	0
Book: tearable papert, Big	1	1	1	1	1	1
Book: tearable papert, Small	0	0	0	0	0	0
Book: tearable papert, without line. Big	1	1	1	1	1	1
Book: tearable papert, without line. Small	0	0	0	0	0	0
Bottle cleaning brush: B1 with sponge	1	1	1	1	1	1
Bottle cleaning brush: Rabbit	1	1	1	1	1	1
Bottle cleaning brush: Twin head	1	1	1	1	1	1
Bottle opener: 200	1	1	1	1	1	1
Bottle opener: 777	1	1	1	1	1	1
Bottle opener: 900	1	1	1	1	1	1
Bottle opener: A80	5	5	5	5	5	5
Bowl 16cm, grade A, with handle	1					
Bowl 16cm, grade B, Mix	1					
Bowl 18cm, grade B, dark	1					
Bowl 20A	3					
Bowl 20cm, grade A, dark	3					
Bowl 20cm, grade B, dark	1					
Brooch in Pack	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Brooch: Bee, 1	0	0	0	0	0	0
Brooch: Bee, 2	0	0	0	0	0	0
Brooch: Bee, 3	0	0	0	0	0	0
Brooch: grade A	0	0	0	0	0	0
Brooch: Lucky	1	1	1	1	1	1
Brooch: Rose, 0	0	0	0	0	0	0
Brooch: Rose, 1	0	0	0	0	0	0
Brooch: Rose, 2	0	0	0	0	0	0
Brooch: Rose, 3	0	0	0	0	0	0
Brooch: Rose, 4	0	0	0	0	0	0
Brooch: tiny, Gold	1	1	1	1	1	1
Brooch: tiny, White	1	1	1	1	1	1
Broom: water broomy	2	2	2	2	2	2
Broom: water Samor	1	1	1	1	1	1
Brush: Black meal of coconut	1	1	1	1	1	1
Brush: Brass 5 rows	0	0	0	0	0	0
Brush: Brass 6 rows	0	0	0	0	0	0
Brush: Brass 7 rows	0	0	0	0	0	0
Brush: Brass,3 Roses	4	5	7	6	1	1
Brush: Brass,Coin	2	2	2	2	2	2
Brush: Brass,Hama	2	2	2	2	2	2
Brush: Brass,Tiger	2	2	2	2	2	2
Brush: Brown meal of coconut	1	1	1	1	1	1
Brush: Nylon, Color	1	1	1	1	1	1
Brush: Nylon, Hama	2	2	2	2	2	2
Brush: Rose, Brass	1	1	1	1	1	1
Brush: Rose, Milk color	2	2	2	2	2	2
Brush: Rose, Transparent color	2	2	2	2	2	2
Buddism Ordaining set: Red	2	4	2	3	1	0
Buddism Ordaining set: Yellow	2	3	3	2	1	1
Can opener: 5 rings	2	2	2	2	2	2
CD Cleanser set	0	0	0	0	0	0
Cement cleaning Sponge: Tree	2	2	2	2	2	2
Chair: CS grade B	0	0	0	0	0	0
Chair: M, Big	0	0	0	0	0	0
chemical pen: pilot, small, Black	0	0	0	0	0	0
chemical pen: pilot, small, Blue	0	0	0	0	0	0
chemical pen: pilot, small, Red	0	0	0	0	0	0
Chopstick	0	0	0	0	0	0
Cigarette and lighter container: gastank, blue	0	0	0	0	0	0
Cigarette and lighter container: gastank, orang	0	0	0	0	0	0
Cleaning frill: Dozen pack	0	0	0	0	0	0
Cleaning frill: Kilo	0	0	0	0	0	0
Cleaning sponge with net: Merrysponge	2	2	2	2	2	2
Cleaning sponge with net: Modern	1	1	1	1	1	1
Cleaning sponge with net:House wife	2	2	2	2	2	2
Cleaning sponge with scrubber: Modern	2	2	2	2	2	2
Cleaning sponge: 3M, 2 purpose	2	2	2	2	2	2
Cleaning sponge: Hama. L	0	0	0	0	0	0
Cleaning sponge: Tree. L	2	2	2	2	2	2
Cleaning sponge: Tree. M	1	1	1	1	1	1
Cleaning sponge: Tree. S	1	1	1	1	1	1
Cleaning stainless frill: Big brite	2	2	2	2	2	2
Cleaning stainless frill: Poly	3	3	3	3	3	3
Cleaning tube	0	0	0	0	0	0
Clipboard A5	0	0	0	0	0	0
Clipper: Black 108	1	1	1	1	1	1



Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Clipper: Black 109	1	1	1	1	1	1
Clipper: Black 110	1	1	1	1	1	1
Clipper: Black 111	2	2	2	2	2	2
Clipper: Black 112	2	2	2	2	2	2
Clipper: White 0	2	2	2	2	2	2
Clipper: White 2	5	5	4	6	5	5
Clipper: White 3	5	5	5	5	5	5
Clipper: White 4	5	5	5	5	5	5
Clipper: White 5	5	8	3	6	3	5
Clipping Blade: Dragonfly	1	1	1	1	1	1
Clipping Blade: Sakura	0	0	0	0	0	0
Clothes for floor cleaning( Mob)	1	1	2	2	0	0
Clothes hanger: 222 ( wire)	1	1	1	1	1	1
Clothes hanger: 222 ,plastic	2	2	2	2	2	2
Clothes hanger: 3 rings	10	8	15	8	7	12
Clothes hanger: 5 holes	1	1	1	1	1	1
Clothes hanger: 5 rings	10	10	10	10	10	10
Clothes hanger: 599. Black	0	0	0	0	0	0
Clothes hanger: Aluminium. 639	1	1	1	1	1	1
Clothes hanger: Aluminium. 646	2	2	2	2	2	2
Clothes hanger: CI	3	3	3	3	3	3
Clothes hanger: No.799	1	1	1	1	1	1
Clothes hanger: PF221	2	2	2	2	2	2
Clothes hanger: red heart-shaped. 55	5	5	5	5	5	5
Clothes hanger: red heart-shaped, 99	2	2	2	2	2	2
Clothes hanger: Round Shape	1	1	1	1	1	1
Clothes hanger: Square Mini	0	0	0	0	0	0
Clothes hanger: Square. Twin	1	1	1	1	1	1
Clothes hanger: Umbrella	2	2	2	2	2	2
Comb: grade A No.801	1	1	1	1	1	1
Comb: grade A No.802	1	1	1	1	1	1
Comb: grade A No.803	1	1	1	1	1	1
Comb: grade A No.804	1	1	1	1	1	1
Comb: grade A No.805	1	1	1	1	1	1
Comb: grade A No.811A	1	1	1	1	1	1
Comb: Haie clipper. plastic	5	5	5	5	5	5
Comb: Haie clipper. stainless	3	3	3	3	3	3
Cone No1	0	0	0	0	0	0
Cone No2	0	0	0	0	0	0
Cone No3	0	0	0	0	0	0
Cone No4	0	0	0	0	0	0
Cone No5	0	0	0	0	0	0
Cotton butts: 100 pieces in pack	2	2	2	2	2	2
Cotton butts: 100 pieces in pack	1	1	1	1	1	1
Cotton butts: 100 pieces in pack	0	0	0	0	0	0
Cotton butts: 50 pieces in pack	2	2	2	2	2	2
Cotton butts: Fancy Giant size pot	1	1	1	1	1	1
Cotton butts: Fancy Jumbo Shell Pot	0	0	0	0	0	0
Cotton butts: Fancy Pot 2 slots	1	1	1	1	1	1
Cotton butts: Square box, pineapple	1	1	1	1	1	1
Cotton butts: transparent small size pot	1	1	1	1	1	1
Cotton wool: Ambulance bus	0	0	0	0	0	0
Cup 514: Transparent pattern	1	1	1	1	1	1
Cup 514: White pattern	0	0	0	0	0	0
Cup 688: Sakura. small	1	1	1	1	1	1
Cup: 002 with Handle	2	2	2	2	2	2
Cup: 004 with Handle, Cartoon pattern	1	1	1	1	1	1

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Cup: 204 with Handle	1	1	1	1	1	1
Cup: 205 with Handle	1	1	1	1	1	1
Cup: 404 with Handle	1	1	1	1	1	1
Cup: 45 Mitsu with Handle	4	2	8	4	4	2
Cup: 475	2	2	2	2	2	2
Cup: 639 Sakura, stripe with Cover	1	1	1	1	1	1
Cup: 733 with Handle	2	2	2	2	2	2
Cup: A3 with Handle	0	0	0	0	0	0
Cup: Arale	1	1	1	1	1	1
Cup: Freshy	5	5	5	5	5	5
Cup: Frog style 2012	2	2	2	2	2	2
Cup: Kitty style 2013	2	2	2	2	2	2
Cup: Marble 004	1	1	1	1	1	1
Cup: P.S. 10 ounces	0	0	0	0	0	0
Cup: P.S. 12 ounces	0	0	0	0	0	0
Cup: P.S. 70 ounces	0	0	0	0	0	0
Cup: Transparent, pineapple pattern	2	2	2	2	2	2
Cup: Wine	0	0	0	0	0	0
Curtain hooker: Color 1	0	0	0	0	0	0
Curtain hooker: Color 2	0	0	0	0	0	0
Curtain hooker: Color 3	0	0	0	0	0	0
Curtain hooker: Color 4	0	0	0	0	0	0
Curtain hooker: Color 5	0	0	0	0	0	0
Cutter 30-K	0	0	0	0	0	0
Cutter 44-K	1	1	1	1	1	1
Cutter ST-10	1	1	1	1	1	1
Cutter ST-100	0	0	0	0	0	0
Cutter ST-9	1	1	1	1	1	1
Cutter: 3 pieces	1	1	1	1	1	1
CutterPI Colorful	1	1	1	1	1	1
CutterPI with Blade	1	1	1	1	1	1
Dipper with short handle	0	0	0	0	0	0
Dish liquid cleanser: Cleo	5	5	5	5	5	5
Dish liquid cleanser: Sunny Wash 800cc	0	0	0	0	0	0
Dish soap cleanser	0	0	0	0	0	0
Doctor gloves: L	0	0	0	0	0	0
Doctor gloves: M	2	2	2	2	2	2
Doctor gloves: S	2	2	2	2	2	2
Dog chain: 20x6	0	0	0	0	0	0
Dog chain: 22x6	0	0	0	0	0	0
Dog chain: 25x6	0	0	0	0	0	0
Dog chain: 30x6	0	0	0	0	0	0
Dog chain: 35x6	0	0	0	0	0	0
Dog chain: 45x6	0	0	0	0	0	0
Drawer lock	0	0	0	0	0	0
Dry Alcohol cup	0	0	0	0	0	0
Dry cell: CAT, Big	3	1	4	5	2	3
Dry cell: CAT, Small	3	3	1	5	1	5
Dry cell: Chinese, 2A	2	2	2	2	2	2
Dry cell: Chinese, 3A	2	2	2	2	2	2
Dry cell: Panasonic, 2A, Alkarine	0	0	0	0	0	0
Dry cell: Panasonic, 2A, black	0	0	0	0	0	0
Dry cell: Panasonic, 2A, green	1	1	1	1	1	1
Dry cell: Panasonic, 2A, red	0	0	0	0	0	0
Dry cell: Panasonic, 3A, black	0	0	0	0	0	0
Dry cell: Panasonic, 3A, Alkarine	0	0	0	0	0	0
Dry cell: Panasonic, 9V, square shape	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Dry cell: Panasonic,size C, Middle	1	1	1	1	1	1
Dry cell: Panasonic,size D, Big	1	1	1	1	1	1
Elastic fabric 1 inche wide	1	1	1	3	0	0
Elastic fabric 10	0	0	0	0	0	0
Elastic fabric 11	0	0	0	0	0	0
Elastic fabric 14	0	0	0	0	0	0
Elastic fabric 16	0	0	0	0	0	0
Elastic fabric 3/4 inche wide	1	2	1	0	1	1
Elastic fabric 4	0	0	0	0	0	0
Elastic fabric 6	0	0	0	0	0	0
Elastic fabric 8	0	0	0	0	0	0
Envelope: airplane pattern	0	0	0	0	0	0
Envelope: Cartoon pattern	0	0	0	0	0	0
Envelope: National flag pattern	0	0	0	0	0	0
Envelope: Pink stripe	0	0	0	0	0	0
Envelope: Standard size, Cartoon	0	0	0	0	0	0
Envelope: Standard size, Color	1	1	1	1	1	1
Envelope: White long	0	0	0	0	0	0
Envelope: White stripe	1	1	1	1	1	1
Fabric cleaning Brush:003	0	0	0	0	0	0
Fabric cleaning Brush:031	3	3	3	3	3	3
Fabric cleaning Brush:707	2	2	2	2	2	2
Fabric cleaning Brush:Eastman 2 colors	3	3	3	3	3	3
Fabric cleaning Brush:Eastman, Bone	3	3	3	3	3	3
Fabric cleaning Brush:flat iron shape.brass	5	5	5	5	5	5
Fabric cleaning Brush:JCJ	0	0	0	0	0	0
Fabric cleaning Brush:Nylon 888	2	2	2	2	2	2
Fabric cleaning Brush:Nylon, flat iron	5	5	5	5	5	5
Fabric cleaning Brush:Nylon, flat iron,china	0	0	0	0	0	0
Fabric cleaning Brush:Rainbow, Samor	3	3	3	3	3	3
Fabric cleaning Brush:Samor, White fiber	3	3	3	3	3	3
Fabric cleaning soap: 3 stars	0	0	0	0	0	0
Fabric cleaning soap: Carus crane	0	0	0	0	0	0
Fabric Gloves: eagle. colorful, nylon	5	5	7	0	5	8
Fabric Gloves: eye. size 10-12	1	1	1	3	0	0
Fabric Gloves: eye. size 132	1	2	1	2	0	0
Fabric Gloves: eye. size 5-7	1	1	2	2	0	0
Fabric Gloves: eye. size 7-9	1	1	0	1	0	3
Fabric Gloves: eye. white, 125	1	1	1	0	1	2
Fabric Gloves: golden fish, colorful, nylon	0	0	0	0	0	0
Fabric Gloves: hot protector	0	0	0	0	0	0
Fabric Gloves: peacock, long, nylon	0	0	0	0	0	0
Fabric Gloves: peacock, sailclothes	3	4	2	5	3	1
Fabric Gloves: peacock,white, nylon	3	2	6	7	0	0
Fabric Gloves: Red rim	8	8	7	12	15	8
Fabric Gloves: Special weaver, rabbit	1	1	0	1	3	0
Fabric Gloves: Sun	5	6	8	0	4	7
Fabric Gloves: Sun, sailclothes	5	2	5	5	4	9
Fabric Gloves: white color, yellow rim	0	0	0	0	0	0
Fabric Gloves:Sun, nylon	3	1	5	2	3	4
Fabric Hanger: Big Bee	0	0	0	0	0	0
Fabric Hanger: Big flowers	0	0	0	0	0	0
Fabric Hanger: Daily	0	0	0	0	0	0
Fabric Hanger: Green flowers	1	1	1	1	1	1
Fabric pincher: 16 pieces, Ploy	2	2	2	2	2	2
Fabric pincher: 18 pieces, CS	2	2	2	2	2	2
Fabric pincher: 18 pieces, round shape, Flowe	6	9	7	4	4	6

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Fabric pincher: 18 pieces, round shape, Merry	1	1	1	1	1	1
Fabric pincher: 18pieces, turbine	2	2	2	2	2	2
Fabric pincher: 24 pieces, Put	3	3	3	3	3	3
Fabric pincher: 30 pieces, CS	3	3	3	3	3	3
Fabric pincher: 30 pieces, Put	5	5	5	5	5	5
Fabric pincher: Big size	3	3	3	3	3	3
Fabric pincher: Japaneese	3	3	3	3	3	3
Fabric pincher: Wooden	0	0	0	0	0	0
Fabric Softener: Pink	1	1	1	1	1	1
Fabric Softener: Sky-blue	1	1	1	1	1	1
Fabric Whitner	1	1	1	1	1	1
Feathers stick	0	0	0	0	0	0
Feet cleaning sponge: Jolly	2	2	2	2	2	2
Flashlight, Chinese, Colorful plastic	1	1	1	1	1	1
Flashlight, Gun A2500	0	0	0	0	0	0
Flashlight, Gun A2600	0	0	0	0	0	0
Flashlight, Gun S2200	0	0	0	0	0	0
Flashlight, Panasonic, FF-137	1	1	1	1	1	1
Flashlight, Panasonic, FF-327	1	1	1	1	1	1
Flashlight, PF-127	1	1	1	1	1	1
Flashlight, Tiger 300	1	1	1	1	1	1
Flashlight, Tiger 500	0	0	0	0	0	0
Flashlight, Tiger 700	0	0	0	0	0	0
Flipper used for frying:	0	0	0	0	0	0
Flipper used for frying: with holes	0	0	0	0	0	0
Floor cleaning brush: Nylon, Rose	2	2	2	2	2	2
Floor cleaning sponge: Rose	1	1	1	1	1	1
Floor cleaning sponge: Tree	1	1	1	1	1	1
Full head Hat: A3	2	2	1	5	1	1
Full head Hat: Ioinclothes	1	1	1	0	1	2
Full head Hat: Ioinclothes with cap	0	0	0	0	0	0
Glass Cleaner: Buka	3	3	3	3	3	3
Grilling sieve	0	0	0	0	0	0
Hair Jel: Jenny	0	0	0	0	0	0
High Cup: 355 with Cover	0	0	0	0	0	0
Hot Stick Glue: Big	1	1	1	1	1	1
Hot Stick Glue: Small	1	1	1	1	1	1
Hot water pouch: Big, Kangaroo	0	0	0	0	0	0
Hot water pouch: small	2	2	2	2	2	2
Hot water pouch: stripe pattern, small	1	1	1	1	1	1
Ice canteen:Perfect, No.999-M5	0	0	0	0	0	0
ice canteen:Star S, No. 592	1	1	1	1	1	1
Ice tray: pumpkin	0	0	0	0	0	0
Indigo: Big bottle, Chicken	0	0	0	0	0	0
Indigo: Big bottle, Crown	0	0	0	0	0	0
Indigo: big square shape, Crown	0	0	0	0	0	0
Indigo: bottle Mokey	0	0	0	0	0	0
Indigo: Medium bottle, Chicken	0	0	0	0	0	0
Indigo: Small bottle, Chicken	0	0	0	0	0	0
Indigo: square shape, Crown	3	3	3	3	3	3
Indigo: square shape, Monkey	0	0	0	0	0	0
Indigo: Squarel bottle, Chicken	0	0	0	0	0	0
Indigo:Liquid, Chicken	0	0	0	0	0	0
Kerosine: Jun	5	5	5	5	5	5
Knife: Chinese 103	0	0	0	0	0	0
Knife: Chinese 104A	0	0	0	0	0	0
Knife: Chinese 106W	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Knife: Chinesee 108	0	0	0	0	0	0
Knife: Chinesee 109	0	0	0	0	0	0
Knife: Chinesee 1105	0	0	0	0	0	0
Knife: Chinesee 1168	0	0	0	0	0	0
Knife: Chinesee 1174	0	0	0	0	0	0
Knife: Chinesee 1177	0	0	0	0	0	0
Knife: Chinesee 1178	0	0	0	0	0	0
Knife: Chinesee 202	0	0	0	0	0	0
Knife: Chinesee 204	0	0	0	0	0	0
Knife: Chinesee 205	0	0	0	0	0	0
Knife: Kiwi 172	2	2	2	2	2	2
Knife: Kiwi 173	2	2	2	2	2	2
Knife: Kiwi 193	10	10	10	10	10	10
Knife: Kiwi 194	10	15	9	12	8	6
Knife: Kiwi 195	10	8	14	7	6	15
Knife: Kiwi 21	2	2	2	2	2	2
Knife: Kiwi 22	2	2	2	2	2	2
Knife: Kiwi 246	2	3	2	1	3	1
Knife: Kiwi 247	2	2	4	2	1	1
Knife: Kiwi 474	5	5	5	5	5	5
Knife: Kiwi 475	5	7	4	4	2	8
Knife: Kiwi 476	5	10	6	1	5	3
Knife: Kiwi 477	5	5	5	5	5	5
Knife: Kiwi 501	10	10	10	10	10	10
Knife: Kiwi 502	10	15	9	12	8	6
Knife: Vegetable, Wildman .small	2	2	2	2	2	2
Knife: Vegetable, Wildman 1 blade	2	2	2	2	2	2
Knife: Vegetable, Wildman 2 blades	2	2	2	2	2	2
Ladle: Belanine	0	0	0	0	0	0
Ladle: Chinesee pattern	0	0	0	0	0	0
Ladle: Colorful handle	1	1	1	1	1	1
Latex glue 5 Baht	0	0	0	0	0	0
Latex glue 10 Baht	0	0	0	0	0	0
Leather polish: Kiwi, Black	1	1	1	1	1	1
Leather polish: Kiwi, Brown	1	1	1	1	1	1
Leather polish: Kiwi, Classic Black	1	1	1	1	1	1
Leather polish: Kiwi, Classic Brown	1	1	1	1	1	1
Light bulb of Flashlight: 24V No.1	0	0	0	0	0	0
Light bulb of Flashlight: 24V No.2	0	0	0	0	0	0
Light bulb of Flashlight: 24V No.3	1	1	1	1	1	1
Light bulb of Flashlight: 24V No.4	1	1	1	1	1	1
Light bulb of Flashlight: 24V No.5	0	0	0	0	0	0
Light bulb: Superlamp 200W	0	0	0	0	0	0
Lubricant oil for machinery: flat bottle	1	1	0	2	2	0
Lubricant oil for machinery: round bottle	2	3	1	3	1	2
Lunch box 584-2	1	1	1	1	1	1
Lunch box 921	0	0	0	0	0	0
Lunch box 922	1	1	1	1	1	1
Lunch box 923	1	1	1	1	1	1
Magnifying glass	0	0	0	0	0	0
Meji color pen	0	0	0	0	0	0
Menthol: Mid	0	0	0	0	0	0
Mentholated ointment	1	1	1	1	1	1
Metal polisher: Big, Brasso	2	2	2	2	2	2
Metal polisher: Medium, Brasso	1	1	1	1	1	1
Metal polisher: Big, Vnol	2	2	2	2	2	2
Metal polisher: Small, Brasso	3	3	3	3	3	3

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Metal polisher: Small, Vnol	2	2	2	2	2	2
Milk bottle: Kid, Chinesee	2	2	2	2	2	2
Mirror with Plastic frame	1	1	1	1	1	1
Mirror with Swinger	0	0	0	0	0	0
Mirror: bath room	0	0	0	0	0	0
Mirror: Flower 10x14 ,hang	1	1	1	1	1	1
Mirror: Flower 12x16 ,hang	1	1	1	1	1	1
Mirror: Flower 14x20 ,hang	1	1	1	1	1	1
Mirror: Flower 7x10 ,hang	1	1	1	1	1	1
Mirror: Flower 8x12 ,hang	1	1	1	1	1	1
Mirror: Flower No.10	3	3	3	3	3	3
Mirror: Flower No.12	1	1	1	1	1	1
Mirror: Flower No.4	1	1	1	1	1	1
Mirror: Flower No.5	1	1	1	1	1	1
Mirror: Flower No.6	5	5	5	5	5	5
Mirror: Flower No.7	5	5	5	5	5	5
Mirror: Flower No.8	3	3	3	3	3	3
Mirror: Flower No.9	3	3	3	3	3	3
Mosquitoes wiping stick container	2	2	5	1	0	2
Mosquitoes wiping stick container: long	0	0	0	0	0	0
Mop with round fabric	2	2	2	2	2	2
Mosquitoes wiping joss stick: Dragon	2	2	2	2	2	2
Mosquitoes wiping reagent: Ko-Yo-15	1	1	1	1	1	1
Mothball: ATM, big	2	2	2	2	2	2
Mothball: ATM, small	2	2	2	2	2	2
Mothball: Big pack 1x2	0	0	0	0	0	0
Mothball: Jumbo size	0	0	0	0	0	0
Mothball: Kilo	2	2	2	2	2	2
Mothball: Small pack	1	1	1	1	1	1
Nail cleaning brush: Big, transparent	1	1	1	1	1	1
Nail cleaning brush: flat iron shape	1	1	1	1	1	1
Nail cutter: 129	2	2	2	2	2	2
Nail cutter: 211	0	0	0	0	0	0
Nail cutter: 309	1	1	1	1	1	1
Nail cutter: 600	1	1	1	1	1	1
Nail cutter: 602	0	0	0	0	0	0
Nail cutter: 777, 211	0	0	0	0	0	0
Nail cutter: 999, Big	0	0	0	0	0	0
Nail cutter: 999, Small	0	0	0	0	0	0
Nail polisher: Big size	1	1	1	1	1	1
Nail polisher: Small size	0	0	0	0	0	0
Nail polisher: Square bottle	1	1	1	1	1	1
Nipple: Akasen L	1	1	1	1	1	1
Nipple: Akasen M	1	1	1	1	1	1
Nipple: Akasen S	1	1	1	1	1	1
Nipple: Kiki L	1	1	1	1	1	1
Nipple: Kiki M	1	1	1	1	1	1
Nipple: Kiki S	1	1	1	1	1	1
Nipple: Pegen, L	0	0	0	0	0	0
Nipple: Pegen, M	0	0	0	0	0	0
Nipple: Pegen, S	0	0	0	0	0	0
Olive oil: Big size	1	1	1	1	1	1
Olive oil: Small size	0	0	0	0	0	0
One baht cotton wool	0	0	0	0	0	0
Padlock: black, long 32mm	0	0	0	0	0	0
Padlock: black, long 38mm	0	0	0	0	0	0
Padlock: black, long 38mm	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Padlock: black, long 50mm	0	0	0	0	0	0
Padlock: black, short 25mm 999	10	8	12	15	5	10
Padlock: black, short 32mm	0	0	0	0	0	0
Padlock: black, short 32mm 999	0	0	0	0	0	0
Padlock: black, short 38 mm	0	0	0	0	0	0
Padlock: black, short 38mm 999	0	0	0	0	0	0
Padlock: black, short 50mm 5 rings	0	0	0	0	0	0
Padlock: black, short 50mm 5 rings	0	0	0	0	0	0
Padlock: black, short 50mm 999	0	0	0	0	0	0
Padlock: brass, long 32mm	0	0	0	0	0	0
Padlock: brass, long 38mm	0	0	0	0	0	0
Padlock: brass, short 20 mm	0	0	0	0	0	0
Padlock: brass, short 32mm	0	0	0	0	0	0
Padlock: gold, long 25mm	0	0	0	0	0	0
Padlock: gold, long 32mm	0	0	0	0	0	0
Padlock: gold, long 38mm 5 rings	0	0	0	0	0	0
Padlock: gold, long 50mm	2	2	2	2	2	2
Padlock: gold, long 50mm	0	0	0	0	0	0
Padlock: gold, short 25mm	1	1	1	1	1	1
Padlock: gold, short 32mm	0	0	0	0	0	0
Padlock: gold, short 38mm	10	10	10	10	10	10
Padlock: gold, short 38mm	0	0	0	0	0	0
Padlock: gold, short 50mm	0	0	0	0	0	0
Padlock: gold, short 50mm	0	0	0	0	0	0
Padlock: Solo 25mm, pack	0	0	0	0	0	0
Padlock: Solo 30mm No.84	0	0	0	0	0	0
Padlock: Solo 35mm, pack	0	0	0	0	0	0
Padlock: Solo 35mm, pack	0	0	0	0	0	0
Padlock: Solo 40mm, pack	0	0	0	0	0	0
Padlock: Solo 40mm, pack	0	0	0	0	0	0
Padlock: Solo 45mm, pack	0	0	0	0	0	0
Padlock: Solo 50mm	0	0	0	0	0	0
Padlock: Solo 50mm, pack	0	0	0	0	0	0
Padlock: Solo 55mm, pack	0	0	0	0	0	0
Padlock: VITA long, 40mm	2	2	2	2	2	2
Padlock: VITA long, 45mm	2	2	2	2	2	2
Padlock: VITA long, 50mm	2	2	2	2	2	2
Padlock: VITA short, 40mm	2	2	2	2	2	2
Padlock: VITA short, 45mm	2	2	2	2	2	2
Padlock: VITA short, 50mm	2	2	2	2	2	2
Padlock: Wolf 20mm	0	0	0	0	0	0
Padlock: Wolf 20mm	0	0	0	0	0	0
Padlock: Wolf 25mm	0	0	0	0	0	0
Padlock: Wolf 25mm	0	0	0	0	0	0
Padlock: Wolf 30mm	0	0	0	0	0	0
Padlock: Wolf 30mm	0	0	0	0	0	0
Padlock: Wolf 40mm	0	0	0	0	0	0
Padlock: Wolf 40mm	0	0	0	0	0	0
Padlock: Wolf 50mm	0	0	0	0	0	0
Padlock: Wolf 50mm	0	0	0	0	0	0
Padlock: World 50mm	0	0	0	0	0	0
Painting brush: No.1	1	1	0	2	2	0
Painting brush: No.1.5	1	1	0	2	1	1
Painting brush: No.2	1	2	1	1	0	1
Painting brush: No.2.5	0	0	0	0	0	0
Painting brush: No.3	0	0	0	0	0	0
Painting brush: No.4	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Pan cleaning brush: meal of coconut 2014	2	2	2	2	2	2
paper card: gold seam 007	1	2	1	1	1	0
paper card:Thai	1	1	0	3	1	0
paper card:Winner	0	0	0	0	0	0
Pen: Diamond	0	0	0	0	0	0
Pen: Lancer 626 Blue	1	1	1	1	1	1
Pen: Lancer 813 Black	0	0	0	0	0	0
Pen: Lancer 813 Blue	1	1	1	1	1	1
Pen: Lancer 813 Red	1	1	1	1	1	1
Pen: Lancer 825 Black	1	1	1	1	1	1
Pen: Lancer 825 Blue	1	1	1	1	1	1
Pen: Lancer 825 Red	1	1	1	1	1	1
Pen: Lancer 878 Black	1	1	1	1	1	1
Pen: Lancer 878 Blue	1	1	1	1	1	1
Pen: Lancer 878 Red	1	1	1	1	1	1
Pen: Lancer 915 Black	0	0	0	0	0	0
Pen: Lancer 915 Blue	1	1	1	1	1	1
Pen: Lancer 915 Red	1	1	1	1	1	1
Pencil: muti-head	0	0	0	0	0	0
Pencil: muti-head. Diamond	2	2	2	2	2	2
Perfume gel: G&G	0	0	0	0	0	0
Photo Album: Big size	0	0	0	0	0	0
Photo Album: Jumbo size	0	0	0	0	0	0
Photo Album: Medium size	0	0	0	0	0	0
Photo Album: Small size	0	0	0	0	0	0
pincer with cutting head: diamond	0	0	0	0	0	0
pincer with sharp head: diamond	2	3	1	3	2	1
pincer: diamond	4	8	4	4	3	1
Pingpong ball: orande	0	0	0	0	0	0
Pingpong ball: white	0	0	0	0	0	0
Plastic bag with lock	0	0	0	0	0	0
Plastic binder	0	0	0	0	0	0
Plastic bucket: 3.5	0	0	0	0	0	0
Plastic bucket: Black 16	0	0	0	0	0	0
Plastic bucket: Black 18	0	0	0	0	0	0
Plastic bucket: Yellow 2.5	2	2	2	2	2	2
Plastic bucket: Yellow 3.5	1	1	1	1	1	1
Plastic bucket: Yellow 4.5	0	0	0	0	0	0
plastic card:Winner 222	1	0	3	2	0	0
Plastic fork: short	0	0	0	0	0	0
Plastic spoon: long	0	0	0	0	0	0
Plastic spoon: short	1	1	1	1	1	1
Plastic spoon-fork	2	2	2	2	2	2
Plug head: Black	2	2	2	2	2	2
Plug head: White	1	1	1	1	1	1
Plug Receptable head: Black	1	1	1	1	1	1
Pollution filter clothes: blue	2	3	2	0	3	2
Pot mender	1	0	4	1	0	0
Power line of a flat iron	1	1	1	1	1	1
Power line of a frying pan	1	1	1	1	1	1
Power line of a pot	1	1	1	1	1	1
Power plug receptable: 10M. AMC	1	1	1	1	1	1
Power plug receptable: 10M, Motto	2	2	2	2	2	2
Power plug receptable: 2001-10	1	1	1	1	1	1
Power plug receptable: 2001-11	1	1	1	1	1	1
Power plug receptable: 2001-5	1	1	1	1	1	1
Power plug receptable: 2001-8	1	1	1	1	1	1



Table A.3:Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Power plug receptable: 2001-9	1	1	1	1	1	1
Power plug receptable: 20M, AMC	0	0	0	0	0	0
Power plug receptable: 5M, Motto	2	2	2	2	2	2
Power plug receptable: 8M, AMC	1	1	1	1	1	1
Power plug receptable: Nagas 10M	2	2	1	3	3	1
Power plug receptable: Nagas 5M	2	1	2	1	3	3
Power plug receptable: Nagas 8M	2	1	1	4	2	2
Power plug receptable: NS-1 Nakashi	1	1	1	1	1	1
Power plug receptable:SUI, triangle shape	1	1	1	1	1	1
Price tag Shooter	0	0	0	0	0	0
Price Tag sticker	1	1	1	1	1	1
Pumping tube : plastic	1	3	0	1	0	1
Razor : 4 pieces in one pack	1	1	1	1	1	1
Razor : Double blades SuperMax	0	0	0	0	0	0
Razor : Fancy	2	2	2	2	2	2
Razor : Feather	0	0	0	0	0	0
Razor : Gillette Thin 2	3	3	3	3	3	3
Razor : Green Sayuri	0	0	0	0	0	-
Razor : Karat	1	1	1	1	1	1
Razor : S.Doll	1	1	1	1	1	1
Razor : single blades Gillette Click	2	2	2	2	2	2
Razor : with 2 blades	0	0	0	0	0	0
Razor : with Nail cutter	1	1	1	1	1	1
Razor : Yellow Sayuri	0	0	0	0	0	0
Razor :Doctorll	1	1	1	1	1	1
Razor :TCI Set	1	1	1	1	1	1
Razor Blade: Atta	3	3	3	3	3	3
Razor Blade: Dorgo	0	0	0	0	0	0
Razor Blade: Feather	0	0	0	0	0	0
Razor Blade: SuperMax	0	0	0	0	0	0
Razor Blade: SuperStainless	0	0	0	0	0	0
Razor Blade: Superthin	0	0	0	0	0	0
Refilled Gas: Buca, Jumbo	2	2	2	2	2	2
Refilled Gas: Buca, Small	1	1	1	1	1	1
Ring: 500 pieces : chain	1	1	3	1	0	0
Ring: Big size	1	1	0	0	1	3
Ring: Medium size	1	1	0	1	3	0
Ring: Small size	1	1	0	2	2	0
Rubber binder: big	1	1	1	1	1	1
Rubber binder: small	1	1	1	1	1	1
Rubber gloves: Canon, L	0	0	0	0	0	0
Rubber gloves: Canon, M	0	0	0	0	0	0
Rubber gloves: Canon, S	0	0	0	0	0	0
Rubber gloves: Dragon, L	0	0	0	0	0	0
Rubber gloves: Dragon, M	0	0	0	0	0	0
Rubber gloves: Dragon, S	0	0	0	0	0	0
Rubber gloves: OK, 7.5, cream color	0	0	0	0	0	0
Rubber gloves: OK, 7.5, orange color	0	0	0	0	0	0
Rubber gloves: OK, 8.5, cream color	0	0	0	0	0	0
Rubber gloves: OK, 8.5, orange color	0	0	0	0	0	0
Rubber gloves: Panda, Black, L	0	0	0	0	0	0
Rubber gloves: Panda, Black, M	0	0	0	0	0	0
Rubber gloves: Panda, Black, S	0	0	0	0	0	0
Rubber gloves: Panda, Goose, 7.5, Pink	0	0	0	0	0	0
Rubber gloves: Panda, Goose, 8.5, Pink	0	0	0	0	0	0
Rubber gloves: Panda, Orange, L	0	0	0	0	0	0
Rubber gloves: Panda, Orange, M	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Rubber gloves: Panda, Orange, S	0	0	0	0	0	0
Rubber gloves: PVC, White, M	0	0	0	0	0	0
Rubber gloves: Sun, Orange,L	0	0	0	0	0	0
Rubber gloves: Sun, Orange,M	0	0	0	0	0	0
Rubber gloves: Sun, Orange,S	0	0	0	0	0	0
Rug: egg shape	1	1	0	2	0	2
Rug: heart shape	1	0	3	1	0	1
Rug: round shape	1	1	0	0	1	3
Rug: small	1	1	0	2	2	0
Rug: square shape	1	0	0	1	0	4
Rug: weaved	1	3	0	1	1	0
Sauce bottle: Orange	0	0	0	0	0	0
Sauce bottle: Transparency	0	0	0	0	0	0
Saving box: Big cylinder A	0	0	0	0	0	0
Saving box: Fat A	1	1	1	1	1	1
Saving box: Giant, A	0	0	0	0	0	0
Saving box: Medium A	0	0	0	0	0	0
Saving box: Medium A, Kid	0	0	0	0	0	0
Saving box: Medium B	0	0	0	0	0	0
Saving box: Star, S100-4	0	0	0	0	0	0
Saving box: Star, S1005-4	0	0	0	0	0	0
Saving box: Tiny A	0	0	0	0	0	0
Scissors: 8 inches, 999	2	2	2	2	2	2
Scissors: Bee, 304	0	0	0	0	0	0
Scissors: Chinese yellow handle	0	0	0	0	0	0
Scissors: Jasmine	1	1	1	1	1	1
Scissors: Meti, Rabbit	5	5	5	5	5	5
Scissors: Orange handle	10	10	10	10	10	10
Scissors: paper set	1	1	1	1	1	1
Scissors: Rose, 304	1	1	1	1	1	1
Scissors: Rose, 33	5	5	8	4	4	4
Scissors: Rose, 538	5	5	5	5	5	5
Scissors: Rose, 917	5	8	4	6	4	3
Scissors: Rubber handle size 1	1	1	1	1	1	1
Scissors: Rubber handle size 2	1	1	1	1	1	1
Scissors: Rubber handle size 3	1	1	1	1	1	1
Scissors: thread, black	2	2	2	2	2	2
Scissors: Wildman 03A	3	3	3	3	3	3
Scissors: Wildman 04A	3	5	2	3	4	1
Scissors: Wildman 05A	2	2	2	3	2	1
Screw driver 2 pieces in set	0	0	0	0	0	0
Screw driver 4 pieces in set	0	0	0	0	0	0
Screw driver for electrical test	0	0	0	0	0	0
Screw driver for watch	1	1	3	0	0	1
Screw driver with 3 inches punch head	0	0	0	0	0	0
Screw driver with 4 inches punch head	0	0	0	0	0	0
Screw driver with switching head	0	0	0	0	0	0
Scrubber with Handle: Black	2	2	2	2	2	2
Scrubber with sponge: Merrybrit, Twin	3	3	3	3	3	3
Scrubber: 3M	2	2	2	2	2	2
Scrubber: Bigsize 1mx2m	0	0	0	0	0	0
Scrubber: Diamond	1	1	1	1	1	1
Scrubber: Elephant	1	1	1	1	1	1
Scrubber: Merbrite, Original	5	5	5	5	5	5
Scrubber: Set 10	0	0	0	0	0	0
Scrubber: Set 11	0	0	0	0	0	0
Scrubber: Set 14	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Scrubber: Set 1x3	1	1	1	1	1	1
Shoe brush: Herping	1	1	1	1	1	1
Shoe polish: big, black	2	2	2	2	2	2
Shoe polish: small, black	2	2	2	2	2	2
Shoe polish: small, brown	2	2	2	2	2	2
Shoe rope: 24 inches, Black	0	0	0	0	0	0
Shoe rope: 24 inches, Black, Big	0	0	0	0	0	0
Shoe rope: 24 inches, Black, Flat	0	0	0	0	0	0
Shoe rope: 24 inches, Brown	0	0	0	0	0	0
Shoe rope: 24 inches, Brown, Big	0	0	0	0	0	0
Shoe rope: 24 inches, Brown, Flat	0	0	0	0	0	0
Shoe rope: 24 inches, Dark brown	0	0	0	0	0	0
Shoe rope: 24 inches, Dark brown, Big	0	0	0	0	0	0
Shoe rope: 24 inches, Dark brown, Flat	0	0	0	0	0	0
Shoe rope: 24 inches, White	0	0	0	0	0	0
Shoe rope: 24 inches, White, Big	0	0	0	0	0	0
Shoe rope: 24 inches, White, Flat	0	0	0	0	0	0
Shoe rope: 36 inches, Black	0	0	0	0	0	0
Shoe rope: 36 inches, Black, Big	0	0	0	0	0	0
Shoe rope: 36 inches, Black, Flat	0	0	0	0	0	0
Shoe rope: 36 inches, Brown	0	0	0	0	0	0
Shoe rope: 36 inches, Brown, Big	0	0	0	0	0	0
Shoe rope: 36 inches, Brown, Flat	0	0	0	0	0	0
Shoe rope: 36 inches, Dark brown	0	0	0	0	0	0
Shoe rope: 36 inches, Dark brown, Big	0	0	0	0	0	0
Shoe rope: 36 inches, Dark brown, Flat	0	0	0	0	0	0
Shoe rope: 36 inches, White	0	0	0	0	0	0
Shoe rope: 36 inches, White, Big	0	0	0	0	0	0
Shoe rope: 36 inches, White, Flat	0	0	0	0	0	0
Shoe rope: 42 inches, Black, Big	0	0	0	0	0	0
Shoe rope: 42 inches, Black, Flat	0	0	0	0	0	0
Shoe rope: 42 inches, Brown, Big	0	0	0	0	0	0
Shoe rope: 42 inches, Brown, Flat	0	0	0	0	0	0
Shoe rope: 42 inches, Dark brown, Big	0	0	0	0	0	0
Shoe rope: 42 inches, Dark brown, Flat	0	0	0	0	0	0
Shoe rope: 42 inches, Mix, Flat	0	0	0	0	0	0
Shoe rope: 42 inches, White, Big	0	0	0	0	0	0
Shoe rope: 42 inches, White, Flat	0	0	0	0	0	0
Shoe rope: 48 inches, Black, Flat	0	0	0	0	0	0
Shoe rope: 48 inches, Brown, Flat	0	0	0	0	0	0
Shoe rope: 48 inches, White, Flat	0	0	0	0	0	0
Shoe rope: 60 inches, Black, Big	0	0	0	0	0	0
Shoe rope: 60 inches, Black, Flat	0	0	0	0	0	0
Shoe rope: 60 inches, Brown, Big	0	0	0	0	0	0
Shoe rope: 60 inches, Brown, Flat	0	0	0	0	0	0
Shoe rope: 60 inches, White, Big	0	0	0	0	0	0
Shoe rope: 60 inches, White, Flat	0	0	0	0	0	0
Shoe rubber: G2-1	4	3	1	5	3	8
Shoe rubber: G2-4	4	4	4	4	4	4
Shoe rubber: G3-1	4	8	2	2	3	5
Shoe rubber: G3-4	4	3	5	6	4	2
Shoe rubber: Kiwi, Black	0	0	0	0	0	0
Shoe rubber: Kiwi, Brown	0	0	0	0	0	0
Shoe rubber: Kiwi, White	0	0	0	0	0	0
Shoe supporter: Lady, 10 kgs	0	0	0	0	0	0
Shoe supporter: Man, 10 kgs	0	0	0	0	0	0
Shoes hanger	0	0	0	0	0	0

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Short Clipping Blade: Dragonfly	1	1	1	1	1	1
Shower cap: cartoon pattern, big	0	0	0	0	0	0
Shower cap: cartoon pattern, small	0	0	0	0	0	0
Shower cap: finesse, big	0	0	0	0	0	0
Shower cap: finesse, small	0	0	0	0	0	0
Shower cap:big	0	0	0	0	0	0
Shower cap:small	0	0	0	0	0	0
Shower sponge : Jolly 001	0	0	0	0	0	0
Shower sponge : Jolly 002	0	0	0	0	0	0
Shower sponge : Jolly 003	0	0	0	0	0	0
Shower sponge : Jolly 004	3	3	3	3	3	3
Shower sponge with Shower Cream	1	1	1	1	1	1
Shower sponge: Natural	0	0	0	0	0	0
Showering head spray	0	0	0	0	0	0
shrink adhesive tape 1 inche	1	1	0	2	1	1
shrink adhesive tape 1 inche big size	0	0	0	0	0	0
shrink adhesive tape 1.5 inche big size	0	0	0	0	0	0
shrink adhesive tape 2 inche big size	0	0	0	0	0	0
shrink adhesive tape 3/4 inche	1	1	0	2	1	1
shrink adhesive tape 3/4 inche big size	0	0	0	0	0	0
Soap box: 2 slots	2	2	2	2	2	2
Soap box: 351P Transparent	0	0	0	0	0	0
Soap box: 351P White	0	0	0	0	0	0
Soap box: 771	2	2	2	2	2	2
Soap box: Kiak	2	2	2	2	2	2
Soap box: Pearl	1	1	1	1	1	1
Soap box: Shinjung	2	2	2	2	2	2
Soap box: Transparent stripes	2	2	2	2	2	2
Soap box: White stripes	2	2	2	2	2	2
Soap: Big Tamamrine	0	0	0	0	0	0
Soap: Ginger	0	0	0	0	0	0
Soap: kok-leang	0	0	0	0	0	0
Soap: Laura	0	0	0	0	0	0
Soap: Small Cucumber	0	0	0	0	0	0
Soap: Tamarine	0	0	0	0	0	0
Soap:Ya-Un	1	1	1	1	1	1
Socks: business, Mix color	3	3	4	1	4	3
Socks: short. Mix color	2	1	1	0	1	2
Spoon: Elephant, short	1	1	1	1	1	1
Spoon: Panda, short	3	3	3	3	3	3
Spoon: short, Zebra	1	1	1	1	1	1
Stainless Cutter L-120	1	1	1	1	1	1
Stainless spoon: coffee	1	1	1	1	1	1
Stainless spoon: Jet	1	1	1	1	1	1
Stainless spoon-fork#C	1	1	1	1	1	1
Staple wire	1	1	1	1	1	1
Stapler	1	1	1	1	1	1
Steel pot stand	1	4	1	0	0	0
Super Glue: Ateco	4	4	4	4	4	4
Super Glue: Chinese	1	1	1	1	1	1
Super Glue: Kenji	1	1	1	1	1	1
Tape Cleanser set	1	1	1	0	3	0
Tape: 2 side glue, Loise size 1x1	2	2	2	2	2	2
Tape: Box closer: murky color	2	2	2	2	2	2
Tape: Box closer: transparency	2	2	2	2	2	2
Tape: Osaka 1meter	1	1	1	1	1	1
Tape: transparency 1 inche 36 yard	0	0	0	0	0	0

199162562

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Tape: transparency 1/2 inche 10 yard	0	0	0	0	0	0
Tape: transparency 1/2 inche 3 yards	0	0	0	0	0	0
Tape: transparency 1/2 inche 36 yard, big	0	0	0	0	0	0
Tape: transparency 1/2 inche 36 yard. small	0	0	0	0	0	0
Tape: transparency 1/2 inche 72 yard	0	0	0	0	0	0
Tape: transparency 3/4 inche 36 yard	0	0	0	0	0	0
Tape: transparency 3/4 inche 72 yard	0	0	0	0	0	0
Ten baht cotton wool	0	0	0	0	0	0
Thread: 1 baht, YNC Black	0	0	0	0	0	0
Thread: 1 baht, YNC Dark gray	0	0	0	0	0	0
Thread: 1 baht, YNC Mix	0	0	0	0	0	0
Thread: 1 baht, YNC White	0	0	0	0	0	0
Thread: 1 baht, YNC Yellow	0	0	0	0	0	0
Thread: 10 baht set, Mix	1	1	1	1	1	1
Thread: 10 baht set, White-Black	1	1	1	1	1	1
Thread: A Black	0	0	0	0	0	0
Thread: A Dark gray	0	0	0	0	0	0
Thread: A Mix	0	0	0	0	0	0
Thread: A White	0	0	0	0	0	0
Thread: A White-Black	0	0	0	0	0	0
Thread: Pink set	0	0	0	0	0	0
Thread: Sailing ship, Black	2	2	2	2	2	2
Thread: Sailing ship, Mix	2	2	2	2	2	2
Thread: Sailing ship, White	2	2	2	2	2	2
Tissue box	0	0	0	0	0	0
Toothbrush: 12 in one box, Mediun Victory	1	1	1	1	1	1
Toothbrush: 12 in one box, Soft Victory	3	3	3	3	3	3
Toothbrush: 3 in one pack JGA, transparent	0	0	0	0	0	0
Toothbrush: 3 in one pack JGA, turbid	0	0	0	0	0	0
Toothbrush: 30 in one box, Mediun Victory	0	0	0	0	0	0
Toothbrush: 30 in one box, Soft Victory	0	0	0	0	0	0
Toothbrush: CASA, 203	0	0	0	0	0	0
Toothbrush: CASA, 204	0	0	0	0	0	0
Toothbrush: CASA, 205	0	0	0	0	0	0
Toothbrush: CASA, 207	0	0	0	0	0	0
Toothbrush: CASA, 208	0	0	0	0	0	0
Toothbrush: CASA, 210	0	0	0	0	0	0
Toothbrush: Chinese, Adult 650	0	0	0	0	0	0
Toothbrush: Chinese, Adult 940	0	0	0	0	0	0
Toothbrush: Chinese, Kid	0	0	0	0	0	0
Toothbrush: JAGA, 674	1	1	1	1	1	1
Toothbrush: JAGA, 690	1	1	1	1	1	1
Toothbrush: JAGA, 698	1	1	1	1	1	1
Toothbrush: JAGA, 699	1	1	1	1	1	1
Toothbrush: JAGA, 739	1	1	1	1	1	1
Toothbrush: JAGA, 740	1	1	1	1	1	1
Toothbrush: Jomana	3	3	3	3	3	3
Toothbrush: Kid, Komo	0	0	0	0	0	0
Toothbrush: OralB Med.	2	2	2	2	2	2
Toothbrush: OralB Soft	3	3	3	3	3	3
Toothbrush: OSAKA, 204	0	0	0	0	0	0
Toothbrush: OSAKA, 205	0	0	0	0	0	0
Toothbrush: OSAKA, 206	0	0	0	0	0	0
Toothbrush: Popular Eastman	0	0	0	0	0	0
Toothbrush: Slim Victory	2	2	2	2	2	2
Toothbrush: Soft, transparent Eastman	2	2	2	2	2	2
Toothpast squeezer: murky	1	1	1	1	1	1

Table A.3:Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Toothpast squeezer: transparency	0	0	0	0	0	0
Toothpick : Kilo	0	0	0	0	0	0
Toothpick 1x10	2	2	2	2	2	2
Toothpick 2in1	0	0	0	0	0	0
Toothpick: Bamboo, Large	2	2	2	2	2	2
Toothpick: Bamboo, Medium	1	1	1	1	1	1
Toothpick: Bamboo, Small	0	0	0	0	0	0
Toothpick: Bandang, Medium	2	2	2	2	2	2
Topknot of Pot's cover: Big	0	0	0	0	0	0
Topknot of Pot's cover: Medium	0	0	0	0	0	0
Topknot of Pot's cover: Size	0	0	0	0	0	0
Tradition razor	1	1	1	1	1	1
trash dipper with handle slot: grade A	2	2	2	2	2	2
trash dipper: grade A	3	3	3	3	3	3
trash dipper: small size 345	1	1	1	1	1	1
U-lock: 3 pieces	0	0	0	0	0	0
U-lock: Harry Master, 115	3	3	3	3	3	3
U-lock: Harry Master, 55	3	3	3	3	3	3
U-lock: Harry Master, 75	3	3	3	3	3	3
U-lock: Harry Master, 95	3	3	3	3	3	3
Wall hooker 1x3	1	1	1	1	1	1
Wall hooker 1x8	1	1	1	1	1	1
Wall hooker: 3 in a row	0	0	0	0	0	0
Wall hooker: 4 in a row	0	0	0	0	0	0
Wall hooker: 5 in a row	0	0	0	0	0	0
Wall hooker: Fancy	1	1	1	1	1	1
Water bottle 1x3	1	1	1	1	1	1
Water bottle 1x3: Square shape	2	2	2	2	2	2
Water bottle 1x4	2	2	2	2	2	2
Water bottle: 558	0	0	0	0	0	0
Water bottle: Pumpkin 711	0	0	0	0	0	0
Water bottle: Pumpkin sport	0	0	0	0	0	0
Water bottle: pushed, small	0	0	0	0	0	0
Water canteen: 022	1	1	1	1	1	1
Water canteen: 999, soldier	0	0	0	0	0	0
Water canteen: 999-2.5, Perfect	0	0	0	0	0	0
Water canteen: Leo	0	0	0	0	0	0
Water canteen:Ice cream 618	0	0	0	0	0	0
Water canteen:Ikkusang8, No.468D	1	1	1	1	1	1
Water canteen:No.111	1	1	1	1	1	1
Water canteen:No.469X	0	0	0	0	0	0
Water canteen:No.486D	0	0	0	0	0	0
Water canteen:No.486X	1	1	1	1	1	1
Water canteen:PB-395	1	1	1	1	1	1
Water canteen:PB-411	1	1	1	1	1	1
Water canteen:PB-426	1	1	1	1	1	1
Water canteen:PB-457	1	1	1	1	1	1
Water canteen:PB-487	0	0	0	0	0	0
Water canteen:PB-488	1	1	1	1	1	1
Water canteen:PB-493	1	1	1	1	1	1
Water canteen:PB-495	1	1	1	1	1	1
Water canteen:Tommy	0	0	0	0	0	0
Water canteen:n-8	1	1	1	1	1	1
Water filter: 5 level	0	0	0	0	0	0
Water filter: Turbine	2	2	2	2	2	2
Water pourer: Big	1	1	1	1	1	1
Water pourer: Medium	1	1	1	1	1	1

Table A.3: Data of safety stock from the recording book during May to August 2004(Cont.)

English Name	Avg. Safety stock	Safety stock#1	Safety stock#2	Safety stock#3	Safety stock#4	Safety stock#5
Water pourer: Small	1	1	1	1	1	1
Water sprayer: 1008	0	0	0	0	0	0
Water sprayer: 2 in 1	0	0	0	0	0	0
Water sprayer: 589	2	2	2	2	2	2
Water sprayer: 590	2	2	2	2	2	2
Water sprayer: Bone shape, Murky	0	0	0	0	0	0
Water sprayer: Bone shape, transparency	1	1	1	1	1	1
Water sprayer: bottle gourd, Star S, 607	0	0	0	0	0	0
Water sprayer: Canon, Yellow	2	2	2	2	2	2
Water sprayer: foggy	0	0	0	0	0	0
Water sprayer: Lucky, Bell	2	2	2	2	2	2
Water sprayer: Smartwing	0	0	0	0	0	0
Water sprayer: Solo	0	0	0	0	0	0
Water sprayer: Taiwan, Transparency	2	2	2	2	2	2
Wax for Leather Shoe: Small	5	5	5	5	5	5
Whetstone	0	0	0	0	0	0
White board pen: pilot, Black	0	0	0	0	0	0
White board pen: pilot, Blue	0	0	0	0	0	0
White board pen: pilot, Red	0	0	0	0	0	0
Wine opener: 800	10	10	10	10	10	10
Wooden Brush: Rose, Clorful fiber	4	2	5	6	4	5
Wooden chopping block	0	0	0	0	0	0
Wooden Chopstick	1	1	1	1	1	1
Wooden color short pen	0	0	0	0	0	0
Wooden Pencil	0	0	0	0	0	0

Note:

Average of Safety stock= ( Sum of Safety stock#1 to #5 )/5

**APPENDIX B**  
**ACTIVITY ANALYSIS CHART**



## Activity analysis chart

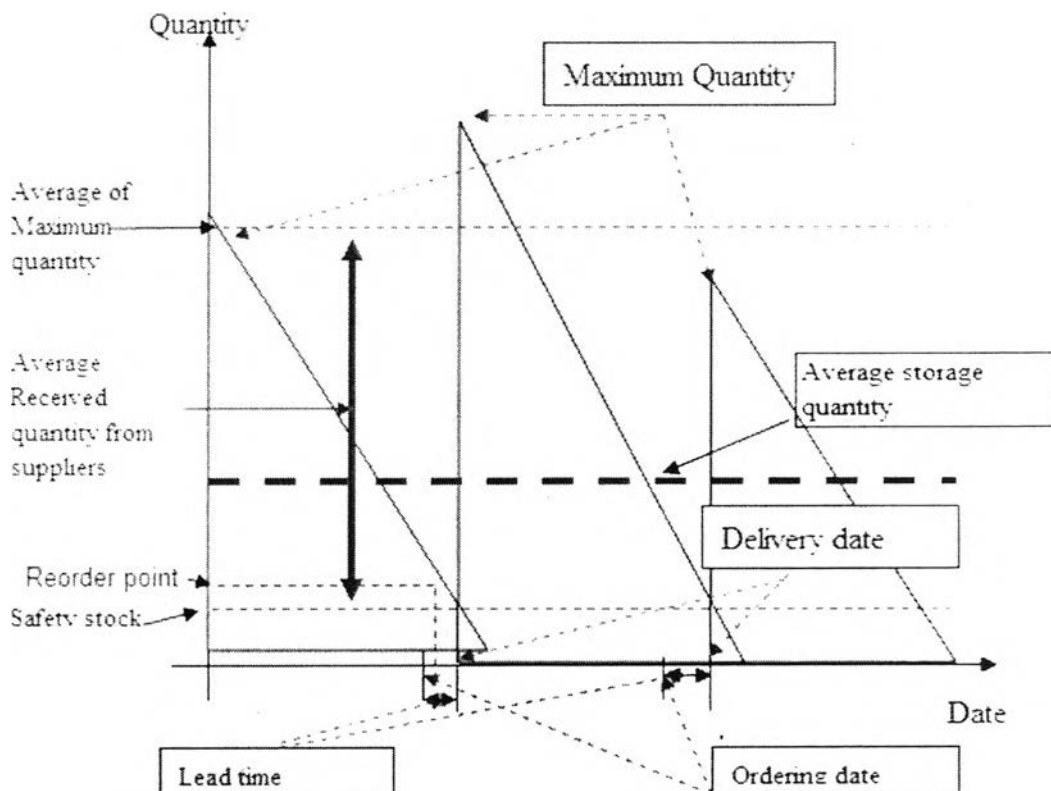
Analysis chart is the chart that contains the data of products in each stage of warehouse activity. This chart is used to plan the space requirement of each activity in a warehouse. There are 3 charts in this appendix and it is used to indicate the space requirement of 3 activities which are receiving, shipping and storage.

Most of data in these charts comes from the real measurement at each activity. However, there are some keys data in the chart that come from the calculation:

**Maximum storage quantity:** This data comes from the summation of the average safety stock and average quantity order. The average safety stock of each item comes from the table A.3 in appendix A. The average quantity order of each item comes from the table A.2 in appendix A.

The maximum storage quantity of each item (Q) = Average receiving quantity (R) + Safety stock (S)

Then, **the average storage quantity** of each item (Q) = (Average receiving quantity (R) + Safety stock (S)) x 0.5.



**Figure B.1-** Illustration of Average quantity of each item in stock

Table B.1: The receiving analysis chart (RAC)

English Name	Receiving Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
pincer diamond	carton ( small )	6.00	3.50	8.00	17.00	3.50	136.00	476.00	40.00	19.040.00	140.00
pincer with cutting head: diamond	carton ( small )	6.00	0.80	9.00	17.00	3.50	153.00	515.50	20.00	10.710.00	16.00
pincer with sharp head: diamond	carton ( small )	6.00	3.50	8.00	17.00	3.50	136.00	476.00	20.00	9.520.00	70.00
Screw driver 2 pieces in set	carton	360.00	24.00	28.00	28.00	40.00	784.00	31.360.00	2.00	62.720.00	48.00
Screw driver 4 pieces in set	carton ( small )	12.00	1.20	8.50	17.50	12.00	148.75	1.785.00	40.00	71.400.00	48.00
Screw driver for watch	carton	120.00	16.00	31.00	45.00	26.50	1.395.00	36.967.50	5.00	184.837.50	80.00
Screw driver with 3 inches punch head	carton ( small )	12.00	0.50	6.50	16.50	4.00	107.25	429.00	48.00	20.592.00	24.00
Screw driver with 4 inches punch head	carton ( small )	12.00	0.90	7.00	19.00	4.50	133.00	598.50	48.00	28.728.00	43.20
Screw driver for electrical test	carton ( small )	12.00	0.50	7.50	19.50	4.50	146.25	658.13	50.00	32.906.25	25.00
Screw driver with switching head	carton	480.00	27.00	38.00	2.00	38.00	76.00	2.888.00	3.00	8.664.00	81.00
Adhesive tape for wiring( Black) TOV	carton	250.00	9.50	35.00	35.00	19.00	1.225.00	23.275.00	10.00	232.750.00	95.00
Adhesive tape for wiring( Black)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	30.00	267.300.00	60.00
shrink adhesive tape 1 inch	carton	400.00	5.00	23.00	35.00	31.00	805.00	24.955.00	5.00	124.775.00	25.00
shrink adhesive tape 3/4 inch	carton	500.00	4.60	23.00	35.00	31.00	805.00	24.955.00	5.00	124.775.00	23.00
shrink adhesive tape 1 inch big size	carton	72.00	4.00	21.00	32.00	30.00	672.00	20.160.00	5.00	100.800.00	20.00
shrink adhesive tape 1.5 inch big size	carton	48.00	4.00	21.00	32.00	30.00	672.00	20.160.00	5.00	100.800.00	20.00
shrink adhesive tape 2 inch big size	carton	36.00	4.00	21.00	32.00	30.00	672.00	20.160.00	5.00	100.800.00	20.00
shrink adhesive tape 3/4 inch big size	carton	72.00	4.00	21.00	32.00	30.00	672.00	20.160.00	5.00	100.800.00	20.00
Adhesive tape for wiring( White)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	25.00	222.750.00	50.00
Adhesive tape for wiring( Green)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	25.00	222.750.00	50.00
Adhesive tape for wiring( Red)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	25.00	222.750.00	50.00
Adhesive tape for wiring( Blue)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	25.00	222.750.00	50.00
Adhesive tape for wiring( Yellow)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	25.00	222.750.00	50.00
Lubricant oil for machinery: round bottle	carton	144.00	12.00	35.00	40.00	29.00	1.400.00	40.600.00	1.00	406.000.00	120.00
Lubricant oil for machinery: flat bottle	carton	144.00	10.00	33.00	16.50	33.00	544.50	17.968.50	5.00	89.842.50	50.00
Painting brush: No.1	bundle(box)	60.00	2.00	9.00	20.00	32.00	180.00	5.760.00	4.00	23.040.00	8.00
Painting brush: No.1.5	bundle(box)	60.00	2.10	9.00	20.00	32.00	180.00	5.760.00	4.00	23.040.00	8.40
Painting brush: No.2	bundle(box)	60.00	2.20	13.00	22.00	29.00	286.00	8.294.00	4.00	33.176.00	8.80
Painting brush: No.2.5	bundle(box)	60.00	2.00	9.00	20.00	32.00	180.00	5.760.00	2.00	11.520.00	4.00
Painting brush: No.3	bundle(box)	60.00	2.20	9.00	20.00	32.00	180.00	5.760.00	2.00	11.520.00	4.40
Painting brush: No.4	bundle(box)	60.00	2.10	9.00	20.00	32.00	180.00	5.760.00	2.00	11.520.00	4.20
Showering head spray	carton	12.00	2.00	24.00	26.50	15.00	492.00	7.380.00	2.00	147.600.00	40.00
Cleaning tube	carton	12.00	1.20	19.00	24.00	11.00	456.00	5.016.00	2.00	100.320.00	24.00
Pumping tube: plastic	carton	120.00	11.00	33.00	65.00	63.00	2.145.00	135.135.00	10.00	1,351,350.00	110.00
Price Tag sticker	carton	10.00	4.00	13.00	30.00	23.00	390.00	8.970.00	10.00	89.700.00	40.00
Price tag Shooter	carton	30.00	11.00	48.00	31.00	41.00	1,488.00	61.008.00	4.00	244.032.00	44.00
Scissors: Rose, 304	carton	600.00	15.00	40.00	42.00	34.00	1,680.00	57.120.00	5.00	285.600.00	75.00
Scissors: Bee, 304	carton	600.00	15.00	40.00	42.00	34.00	1,680.00	57.120.00	1.00	57.120.00	15.00
Scissors: Orange handle	box	6.00	0.70	27.00	18.00	28.00	1,026.00	28.728.00	5.00	1,723.650.00	42.00
Scissors: Wildman 03A	box	12.00	0.50	9.00	20.00	8.00	180.00	1.440.00	20.00	28.800.00	10.00
Scissors: Wildman 04A	box	12.00	0.70	9.00	20.00	8.00	180.00	1.440.00	20.00	28.800.00	14.00
Scissors: Wildman 05A	box	12.00	1.20	10.00	25.00	12.00	250.00	3.000.00	20.00	60.000.00	24.00
Scissors: Rubber handle size 1	carton	120.00	21.00	23.00	55.00	23.00	1,265.00	29.095.00	2.00	58.190.00	42.00
Scissors: Rubber handle size 2	carton	120.00	19.00	21.00	54.00	23.00	1,242.00	28.566.00	2.00	57.132.00	38.00
Scissors: Rubber handle size 3	carton	120.00	18.00	26.00	21.00	42.00	546.00	22.932.00	2.00	45.864.00	36.00
Scissors: Chitnasec yellow handle	carton	84.00	10.00	18.00	22.00	15.00	396.00	5.940.00	5.00	29.700.00	50.00
Scissors: Rose, 33	box	12.00	0.50	8.50	20.00	8.00	170.00	1,360.00	40.00	54.400.00	20.00
Scissors: Rose, 538	box	12.00	0.50	8.50	20.00	8.00	170.00	1,360.00	40.00	54.400.00	20.00
Scissors: Rose, 917	box	12.00	0.50	8.50	20.00	8.00	170.00	1,360.00	40.00	54.400.00	20.00
Scissors: 8 inches, 999	carton	240.00	18.00	40.00	96.00	50.00	3,840.00	192.000.00	1.00	192.000.00	18.00
Scissors: Thread, black	box	240.00	4.50	13.00	44.50	15.00	578.50	8.677.50	12.00	104.130.00	54.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Scissors: Meti. Rabbit	box	12.00	0.60	10.00	15.50	5.00	155.00	775.00	40.00	31.000.00	24.00
Scissors: paper set	carton	690.00	17.00	43.00	22.50	30.50	967.50	29.508.75	10.00	295.087.50	170.00
Scissors: Jasmine	carton	600.00	10.00	32.00	37.00	30.00	1.184.00	35.520.00	5.00	177.600.00	50.00
Clipboard A5	carton	144.00	15.60	32.00	48.00	30.00	1.536.00	46.080.00	2.00	92.160.00	31.20
Super Glue: Kenji	carton	288.00	6.00	30.00	41.00	44.00	1.240.00	54.120.00	5.00	270.600.00	30.00
Super Glue: Chinese	carton	600.00	9.50	40.50	82.00	29.00	1.321.00	96.309.00	5.00	481.545.00	47.50
Super Glue: Ateco	carton	288.00	6.50	39.00	40.00	45.00	1.540.00	70.200.00	10.00	702.000.00	65.00
Hot Stiek Glue: Small	carton	3.750.00	25.00	32.00	64.00	17.50	2.048.00	35.840.00	1.00	107.520.00	75.00
Hot Stiek Glue: Big	carton	899.00	25.00	32.00	64.00	17.50	2.048.00	35.840.00	3.00	107.520.00	75.00
Latex glue10 Baht	carton	144.00	16.80	37.00	47.00	33.00	1.739.00	57.387.00	3.00	172.161.00	50.40
Latex glue 5 Baht	carton	288.00	14.40	38.50	42.00	30.00	1.617.00	48.510.00	2.00	97.020.00	28.50
Cutter 30-K	carton	240.00	6.60	20.00	39.50	24.00	790.00	18.960.00	2.00	37.920.00	13.20
Cutter 44-K	carton	120.00	3.00	20.00	39.50	24.00	790.00	18.960.00	3.00	56.880.00	9.00
CutterPI with Blade	carton	120.00	6.10	35.00	56.00	22.00	1.960.00	43.120.00	5.00	215.600.00	30.50
CutterPI Colorful	carton	120.00	5.10	22.00	45.50	23.00	1.001.00	21.023.00	5.00	115.115.00	25.50
Cutter ST-10	carton	240.00	4.20	27.50	34.00	25.00	935.00	23.375.00	3.00	70.125.00	12.60
Cutter ST-100	carton	120.00	5.50	21.00	48.00	16.00	1.008.00	16.128.00	1.00	48.384.00	16.50
Cutter ST-9	carton	240.00	2.60	23.50	28.00	21.00	658.00	13.818.00	1.00	41.454.00	7.50
Stainless Cutter L-120	carton	240.00	6.60	22.50	42.00	36.00	945.00	34.020.00	5.00	170.100.00	53.40
Cutter: 3 pieces	carton	60.00	8.00	27.00	37.00	44.00	999.00	43.956.00	4.00	175.824.00	32.00
Envelope: White long	carton	5.000.00	22.00	28.00	37.00	48.00	1.036.00	49.728.00	2.00	99.456.00	44.00
Envelope: Standard size, Cartoon	carton	5.000.00	17.00	27.00	60.00	35.00	1.620.00	56.700.00	2.00	113.400.00	34.00
Envelope: Standard size, Color	carton	5.000.00	17.00	27.00	60.00	35.00	1.620.00	56.700.00	3.00	170.100.00	51.00
Envelope: Cartoon pattern	carton	5.000.00	16.00	28.00	50.00	35.00	1.400.00	49.000.00	2.00	98.000.00	32.00
Envelope: White stripe	carton	5.000.00	16.00	28.00	50.00	35.00	1.400.00	49.000.00	5.00	245.000.00	57.00
Envelope: airplane pattern	carton	5.000.00	16.00	28.00	50.00	35.00	1.400.00	49.000.00	2.00	98.000.00	32.00
Envelope: Pink stripe	carton	5.000.00	16.00	28.00	50.00	35.00	1.400.00	49.000.00	3.00	147.000.00	48.00
Envelope: National flag pattern	carton	5.000.00	16.00	28.00	50.00	35.00	1.400.00	49.000.00	2.00	98.000.00	32.00
Stapler	carton	240.00	8.00	30.00	37.00	39.00	1.110.00	43.290.00	5.00	216.450.00	47.00
Staple wire	carton	30.00	17.00	23.00	38.00	22.00	874.00	19.228.00	5.00	96.140.00	85.00
Clipper: White 0	box	36.00	1.30	15.00	23.00	18.00	345.00	6.210.00	20.00	124.200.00	25.00
Clipper: White 2	box	36.00	5.00	11.50	17.50	6.00	201.25	1.207.50	30.00	36.225.00	20.00
Clipper: White 3	box	72.00	5.00	13.50	16.00	5.50	216.00	1.188.00	30.00	35.640.00	25.00
Clipper: White 4	box	144.00	0.70	11.50	17.50	6.50	201.25	1.308.13	30.00	39.243.75	27.00
Clipper: White 5	box	144.00	0.40	9.50	15.50	4.50	147.25	662.63	30.00	19.878.75	27.00
Clipper: Black 108	carton	720.00	25.70	44.00	51.00	31.00	2.244.00	69.564.00	1.00	208.692.00	77.10
Clipper: Black 109	carton	720.00	17.50	32.00	48.00	32.00	1.536.00	49.152.00	3.00	147.456.00	52.50
Clipper: Black 110	box	144.00	1.60	12.00	16.00	11.00	192.00	2.112.00	10.00	21.120.00	10.00
Clipper: Black 111	box	144.00	1.00	10.00	21.00	9.00	210.00	1.890.00	10.00	18.900.00	10.00
Clipper: Black 112	box	144.00	0.50	17.00	17.00	7.00	289.00	2.023.00	20.00	40.460.00	19.00
Tape: 2 side glue, Loise size 1x1	carton	288.00	4.20	25.00	36.00	31.00	900.00	27.900.00	20.00	558.000.00	84.00
Tape: Osaka 1meter	carton	600.00	8.20	40.00	51.00	26.00	2.040.00	51.040.00	3.00	159.120.00	24.60
Tape: Box closer: murky color	carton	72.00	4.50	28.00	36.00	30.00	1.008.00	30.240.00	15.00	453.600.00	67.50
Tape: Box closer: transparency	carton	72.00	4.50	28.00	36.00	30.00	1.008.00	30.240.00	10.00	302.400.00	45.00
Tape: transparency 1/2 inche 10 yard	carton	2.304.00	15.00	35.00	37.00	27.00	1.295.00	34.965.00	5.00	174.825.00	75.00
Tape: transparency 1/2 inche 36 yard, small	carton	288.00	9.60	29.00	42.00	17.00	1.218.00	20.706.00	5.00	103.530.00	48.00
Tape: transparency 1/2 inche 36 yard, big	carton	144.00	4.60	30.00	40.00	17.00	1.200.00	20.400.00	15.00	306.000.00	69.00
Tape: transparency 1/2 inche 3 yards	carton	1.440.00	8.00	34.00	50.00	20.00	1.700.00	34.000.00	5.00	170.000.00	40.00
Tape: transparency 1/2 inche 72 yard	carton	144.00	10.00	36.00	46.00	15.00	1.656.00	24.840.00	5.00	124.200.00	50.00
Tape: transparency 1 inche 36 yard	carton	72.00	4.60	30.00	40.00	17.00	1.200.00	20.400.00	5.00	102.000.00	23.00
Tape: transparency 3/4 inche 36 yard	carton	96.00	4.60	30.00	40.00	17.00	1.200.00	20.400.00	10.00	204.000.00	46.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Tape: transparency 3/4 inch 72 yard	carton	84.00	10.00	36.00	46.00	15.00	1.656.00	24.840.00	5.00	124.200.00	50.00
Pen Lancer 626 Blue	carton	1.000.00	6.50	36.00	43.00	16.00	1.548.00	24.768.00	5.00	123.840.00	32.50
Pen Lancer 813 Black	carton	1.000.00	7.80	36.00	43.00	16.00	1.548.00	24.768.00	3.00	74.304.00	23.40
Pen Lancer 813 Red	carton	1.000.00	7.80	36.00	43.00	16.00	1.548.00	24.768.00	3.00	74.304.00	23.40
Pen Lancer 813 Blue	carton	1.000.00	7.80	36.00	43.00	16.00	1.548.00	24.768.00	4.00	99.072.00	31.20
Pen Lancer 825 Black	carton	1.000.00	9.00	36.00	45.00	16.00	1.620.00	25.920.00	6.00	155.520.00	54.00
Pen Lancer 825 Red	carton	1.000.00	9.00	36.00	45.00	16.00	1.620.00	25.920.00	7.00	181.440.00	63.00
Pen Lancer 825 Blue	carton	1.000.00	9.00	36.00	45.00	16.00	1.620.00	25.920.00	7.00	181.440.00	63.00
Pen Lancer 878 Black	carton	1.000.00	6.50	50.00	45.00	11.00	1.350.00	14.850.00	10.00	148.500.00	65.00
Pen Lancer 878 Red	carton	1.000.00	6.50	50.00	45.00	11.00	1.350.00	14.850.00	10.00	148.500.00	65.00
Pen Lancer 878 Blue	carton	1.000.00	6.50	50.00	45.00	11.00	1.350.00	14.850.00	10.00	148.500.00	65.00
Pen Lancer 915 Black	carton	1.000.00	7.20	36.00	43.00	17.00	1.548.00	26.316.00	3.00	78.948.00	21.60
Pen Lancer 915 Red	carton	1.000.00	7.20	36.00	43.00	17.00	1.548.00	26.316.00	3.00	78.948.00	21.60
Pen Lancer 915 Blue	carton	1.000.00	7.20	36.00	43.00	17.00	1.548.00	26.316.00	4.00	105.264.00	28.80
Pen Diamond	carton	1.000.00	9.00	40.00	49.00	17.50	1.960.00	34.300.00	5.00	171.500.00	45.00
chemical pen pilot, small, Black	carton	1.728.00	21.60	36.50	47.50	29.00	1.733.75	50.278.75	2.00	100.557.50	43.20
chemical pen pilot, small, Red	carton	1.728.00	21.60	36.50	47.50	29.00	1.733.75	50.278.75	2.00	100.557.50	43.20
chemical pen pilot, small, Blue	carton	1.728.00	21.60	36.50	47.50	29.00	1.733.75	50.278.75	2.00	100.557.50	43.20
White board pen pilot, Black	carton	576.00	9.60	29.00	43.50	22.00	1.261.50	27.753.00	1.00	27.753.00	9.60
White board pen pilot, Red	carton	576.00	9.60	29.00	43.50	22.00	1.261.50	27.753.00	1.00	27.753.00	9.60
White board pen pilot, Blue	carton	576.00	9.60	29.00	43.50	22.00	1.261.50	27.753.00	1.00	27.753.00	9.60
Wooden Pencil	carton	144.00	25.00	30.00	41.00	47.00	1.230.00	57.810.00	2.00	115.620.00	50.00
Pencil multi-head	carton	2.880.00	20.00	42.00	52.00	35.00	2.184.00	76.440.00	2.00	152.880.00	40.00
Pencil: multi-head, Diamond	carton	288.00	2.20	21.50	21.50	16.00	462.25	7.396.00	12.00	88.752.00	26.40
Meji color pen	carton	240.00	15.00	31.00	67.00	31.00	2.077.00	64.387.00	3.00	193.161.00	45.00
Wooden color short pen	carton	480.00	20.00	28.00	39.00	45.00	1.092.00	49.140.00	2.00	98.280.00	40.00
Plastic binder	carton	120.00	3.70	36.00	38.00	29.00	1.368.00	39.672.00	10.00	396.720.00	37.00
Book 10 baht	bundle	120.00	15.00	23.00	42.00	17.00	966.00	16.422.00	6.00	98.532.00	90.00
Book 5 baht	bundle	360.00	20.00	24.00	55.00	16.00	1.320.00	21.120.00	4.00	84.480.00	80.00
Book tearable papert, Small	parcel	1.000.00	35.00	38.00	67.00	20.00	2.546.00	50.920.00	2.00	101.840.00	70.00
Book tearable papert, Big	parcel	400.00	25.00	39.00	54.00	19.00	2.106.00	40.014.00	5.00	200.070.00	125.00
Book tearable papert, without line, Small	parcel	1.000.00	35.00	38.00	67.00	20.00	2.546.00	50.920.00	2.00	101.840.00	70.00
Book tearable papert, without line, Big	parcel	500.00	25.00	39.00	49.00	22.00	1.911.00	42.042.00	3.00	126.126.00	75.00
Book Drawing, Small	bundle	240.00	20.00	26.00	44.00	19.00	1.144.00	21.736.00	3.00	65.208.00	60.00
Wooden chopping block	carton	12.00	7.50	20.00	25.00	20.00	500.00	10.000.00	10.00	100.000.00	78.00
Flipper used for frying, with holes	carton	300.00	25.00	33.00	43.00	34.00	1.419.00	48.246.00	1.00	48.246.00	28.00
Flipper used for frying	carton	300.00	25.00	33.00	43.00	34.00	1.419.00	48.246.00	1.00	48.246.00	28.00
Ladle: Belanne	carton	144.00	6.50	25.00	33.00	18.00	825.00	14.850.00	20.00	297.000.00	15.00
Ladle Colorful handle	carton	300.00	16.00	26.00	39.00	35.00	1.014.00	35.490.00	10.00	354.900.00	16.00
Ladle Chinese pattern	carton	600.00	25.00	36.00	46.00	35.00	1.656.00	57.960.00	3.00	173.880.00	78.00
Knife Kiwi 172	box	12.00	1.10	9.00	30.00	4.00	270.00	1.080.00	10.00	10.800.00	11.00
Knife Kiwi 173	box	12.00	1.00	9.00	30.00	4.00	270.00	1.080.00	10.00	10.800.00	11.00
Knife Kiwi 193	box	12.00	0.30	7.00	22.00	3.00	154.00	462.00	50.00	23.100.00	11.00
Knife Kiwi 194	box	12.00	0.30	7.00	22.50	3.00	157.50	472.50	50.00	23.625.00	11.00
Knife Kiwi 195	box	12.00	0.40	7.00	24.50	3.00	171.50	514.50	50.00	25.725.00	11.00
Knife: Kiwi 21	box	12.00	1.80	9.00	33.00	4.00	297.00	1.188.00	10.00	11.880.00	16.00
Knife: Kiwi 22	box	12.00	1.80	9.00	33.00	4.00	297.00	1.188.00	10.00	11.880.00	16.00
Knife: Kiwi 246	box	12.00	0.90	8.50	29.50	35.00	250.75	8.776.25	10.00	87.762.50	9.00
Knife: Kiwi 247	box	12.00	0.90	8.50	31.00	4.00	263.50	1.054.00	10.00	10.540.00	9.00
Knife: Kiwi 474	box	12.00	0.50	9.50	22.50	3.50	213.75	748.13	20.00	14.962.50	10.00
Knife: Kiwi 475	box	12.00	0.60	9.50	22.50	3.50	213.75	748.13	20.00	14.962.50	10.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Knife: Kiwi 476	box	12.00	1.00	11.00	29.00	4.00	319.00	1,276.00	20.00	25,520.00	20.00
Knife: Kiwi 477	box	12.00	1.00	11.00	29.00	4.00	319.00	1,276.00	20.00	25,520.00	20.00
Knife: Kiwi 501	box	12.00	0.40	6.00	23.50	3.00	141.00	423.00	50.00	21,150.00	20.00
Knife: Kiwi 502	box	12.00	0.40	6.00	23.50	3.00	141.00	423.00	50.00	21,150.00	20.00
Knife: Chinese 103	box	12.00	0.20	7.50	25.00	3.50	187.50	468.75	50.00	23,437.50	10.00
Knife: Chinese 104A	box	12.00	0.40	9.50	23.00	4.50	218.50	983.25	20.00	19,665.00	8.00
Knife: Chinese 106W	box	12.00	0.40	9.50	24.00	4.00	228.00	912.00	20.00	18,240.00	8.00
Knife: Chinese 108	box	12.00	0.70	13.00	25.00	3.50	325.00	1,137.50	20.00	22,750.00	14.00
Knife: Chinese 109	box	12.00	0.70	13.50	25.00	3.50	337.50	1,181.25	20.00	23,625.00	14.00
Knife: Chinese 1105	box	12.00	0.70	13.00	23.50	4.00	305.50	1,222.00	20.00	24,440.00	14.00
Knife: Chinese 1168	box	12.00	0.90	11.50	36.00	4.00	414.00	1,656.00	20.00	33,120.00	18.00
Knife: Chinese 1174	box	12.00	1.60	10.00	29.00	4.50	290.00	1,305.00	20.00	26,100.00	32.00
Knife: Chinese 1177	box	12.00	1.10	7.00	32.00	6.00	224.00	1,344.00	20.00	26,880.00	22.00
Knife: Chinese 1178	box	12.00	1.30	7.00	30.00	6.00	210.00	1,260.00	20.00	25,200.00	26.00
Knife: Chinese 202	box	12.00	1.20	7.50	31.50	6.50	236.25	1,535.63	12.00	18,427.50	14.40
Knife: Chinese 204	box	12.00	1.20	10.00	35.50	5.00	355.00	1,775.00	12.00	21,300.00	14.40
Knife: Chinese 205	box	12.00	1.60	10.00	30.00	4.50	300.00	1,350.00	12.00	16,200.00	19.20
Knife: Vegetable, Wildman 1 blade	bundle	120.00	7.20	16.00	23.50	39.50	376.00	14,852.00	10.00	148,520.00	72.00
Knife: Vegetable, Wildman 2 blades	bundle	120.00	7.00	16.00	23.50	39.50	376.00	14,852.00	10.00	148,520.00	70.00
Knife: Vegetable, Wildman ,small	bundle	120.00	3.90	14.00	18.00	35.00	252.00	8,820.00	10.00	88,200.00	39.00
Grilling sieve	bundle	60.00	8.00	26.00	40.00	20.00	1,040.00	20,800.00	5.00	104,000.00	40.00
Aluminium foil long	carton	24.00	9.00	34.00	48.00	22.00	1,632.00	35,904.00	10.00	359,040.00	90.00
Aluminium foil short	carton	24.00	4.30	21.00	31.00	33.00	651.00	21,483.00	10.00	214,830.00	43.00
Dry cell: Panasonic, 2A, green	carton	1,000.00	20.00	18.00	31.00	27.00	558.00	15,066.00	5.00	75,330.00	100.00
Dry cell: Panasonic, 2A, black	carton	1,000.00	22.00	18.00	31.00	27.00	558.00	15,066.00	2.00	30,132.00	44.00
Dry cell: Panasonic, 2A, red	carton	1,000.00	21.00	18.00	31.00	27.00	558.00	15,066.00	2.00	30,132.00	42.00
Dry cell: Panasonic, 3A, black	carton	1,200.00	12.00	25.00	29.00	13.00	725.00	9,425.00	2.00	18,850.00	24.00
Dry cell: Panasonic, 9V, square shape	carton	288.00	10.00	24.00	24.00	17.00	576.00	9,792.00	2.00	19,584.00	20.00
Dry cell: Panasonic, 2A, Alkaline	carton	144.00	9.00	24.00	31.00	23.50	744.00	17,484.00	2.00	34,968.00	18.00
Dry cell: Panasonic, 3A, Alkaline	carton	144.00	5.00	25.00	31.00	17.00	775.00	13,175.00	2.00	26,350.00	10.00
Dry cell: Panasonic, size C, Middle	carton	480.00	25.00	29.50	32.50	23.00	958.75	22,051.25	3.00	66,153.75	75.00
Dry cell: Panasonic, size D, Big	carton	288.00	26.00	29.00	39.00	22.00	1,131.00	24,882.00	5.00	124,410.00	130.00
Dry cell: Chinese, 2A	carton	60.00	17.00	19.00	31.00	27.00	589.00	15,903.00	20.00	318,060.00	340.00
Dry cell: Chinese, 3A	carton	2,160.00	18.00	26.00	32.00	15.00	832.00	12,480.00	3.00	37,440.00	54.00
Dry cell: CAT, Small	carton	144.00	12.00	21.50	29.00	20.00	623.50	12,470.00	50.00	623,500.00	600.00
Dry cell: CAT, Big	carton	144.00	15.50	21.50	29.00	20.00	623.50	12,470.00	20.00	249,400.00	310.00
Flashlight, Panasonic, FF-137	carton	24.00	4.00	28.00	41.00	26.50	1,148.00	30,422.00	5.00	152,110.00	20.00
Flashlight, Panasonic, FF-327	carton	48.00	3.00	24.00	43.00	18.00	1,032.00	18,576.00	5.00	92,880.00	15.00
Flashlight, PF-127	carton	24.00	3.50	28.00	41.00	20.00	1,148.00	22,960.00	5.00	114,800.00	17.50
Flashlight, Chinese, Colorful plastic	carton	120.00	10.00	30.00	40.00	50.00	1,200.00	60,000.00	5.00	300,000.00	50.00
Flashlight, Gun A2500	carton	24.00	2.10	18.00	28.00	18.00	504.00	9,072.00	10.00	90,720.00	21.00
Flashlight, Gun A2600	carton	24.00	1.80	22.00	25.00	20.00	550.00	11,000.00	10.00	110,000.00	18.00
Flashlight, Gun S2200	carton	12.00	1.80	19.50	20.00	16.00	390.00	6,240.00	10.00	62,400.00	18.00
Flashlight, Tiger 300	carton	192.00	25.00	43.00	62.00	46.50	2,666.00	123,969.00	10.00	1,239,690.00	250.00
Flashlight, Tiger 500	carton	120.00	21.00	39.50	67.00	54.50	2,646.50	144,234.25	3.00	432,702.75	63.00
Flashlight, Tiger 700	carton	72.00	16.50	40.50	52.50	56.00	2,126.25	119,070.00	2.00	238,140.00	33.00
Power plug receptable: 2001-10	carton	24.00	6.90	25.50	44.00	26.00	1,122.00	29,172.00	5.00	145,860.00	34.50
Power plug receptable: 2001-11	carton	24.00	6.50	25.50	44.00	26.00	1,122.00	29,172.00	5.00	145,860.00	32.50
Power plug receptable: 2001-5	carton	24.00	11.00	29.00	53.00	18.00	1,537.00	27,666.00	5.00	138,330.00	55.00
Power plug receptable: 2001-8	carton	24.00	9.00	25.50	44.00	26.00	1,122.00	29,172.00	5.00	145,860.00	45.00
Power plug receptable: 2001-9	carton	24.00	8.00	25.50	44.00	26.00	1,122.00	29,172.00	5.00	145,860.00	40.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Power plug receptable: 10M, AMC	carton	24.00	10.00	36.00	47.00	19.00	1,692.00	32,148.00	5.00	160,740.00	30.00
Power plug receptable: 10M, Motto	carton	24.00	10.00	36.00	47.00	19.00	1,692.00	32,148.00	10.00	321,480.00	100.00
Power plug receptable: 20M, AMC	carton	12.00	9.00	40.00	42.00	16.00	1,680.00	26,880.00	5.00	134,400.00	45.00
Power plug receptable: 5M, Motto	carton	24.00	5.30	36.00	47.00	19.00	1,692.00	32,148.00	10.00	321,480.00	53.00
Power plug receptable: 8M, AMC	carton	24.00	8.00	36.00	47.00	19.00	1,692.00	32,148.00	5.00	160,740.00	40.00
Power plug receptable: SU1, triangle shape	carton	24.00	3.50	26.00	43.00	16.00	1,118.00	17,888.00	5.00	89,440.00	17.50
Power plug receptable: NS-1 Nakashi	carton	24.00	5.60	27.00	39.00	17.00	1,053.00	17,901.00	5.00	89,505.00	28.00
Power plug receptable: Nagas 10M	carton	24.00	11.00	31.00	55.00	20.00	1,705.00	34,100.00	10.00	341,000.00	110.00
Power plug receptable: Nagas 5M	carton	24.00	6.00	31.00	55.00	20.00	1,705.00	34,100.00	10.00	341,000.00	60.00
Power plug receptable: Nagas 8M	carton	24.00	10.00	31.00	55.00	20.00	1,705.00	34,100.00	10.00	341,000.00	100.00
Power line of a frying pan	carton	50.00	6.00	27.00	35.00	31.00	945.00	29,295.00	3.00	87,885.00	18.00
Power line of a flat iron	carton	50.00	6.00	27.00	35.00	31.00	945.00	29,295.00	3.00	87,885.00	18.00
Power line of a pot	carton	50.00	5.00	27.00	35.00	31.00	945.00	29,295.00	3.00	87,885.00	15.00
Light bulb: Superlamp 200W	carton	25.00	2.30	41.00	41.00	15.00	1,681.00	25,215.00	20.00	504,300.00	45.00
Light bulb of Flashlight: 24V No.1	carton	1,000.00	3.00	24.00	28.00	18.50	672.00	12,432.00	2.00	24,864.00	6.00
Light bulb of Flashlight: 24V No.2	carton	1,000.00	3.00	24.00	28.00	18.50	672.00	12,432.00	2.00	24,864.00	6.00
Light bulb of Flashlight: 24V No.3	carton	1,000.00	3.00	24.00	28.00	18.50	672.00	12,432.00	2.00	24,864.00	6.00
Light bulb of Flashlight: 24V No.4	carton	1,000.00	3.00	24.00	28.00	18.50	672.00	12,432.00	2.00	24,864.00	6.00
Light bulb of Flashlight: 24V No.5	carton	1,000.00	3.00	24.00	28.00	18.50	672.00	12,432.00	2.00	24,864.00	6.00
Plug head: White	bundle	300.00	5.00	10.00	18.00	46.00	180.00	8,280.00	10.00	82,800.00	50.00
Plug head: Black	bundle	300.00	2.20	10.00	18.00	35.00	180.00	6,300.00	10.00	63,000.00	22.00
Plug Receptable head: Black	bundle	1,500.00	3.80	9.00	18.00	45.00	162.00	7,290.00	6.00	43,740.00	22.80
Hair Jel: Jenny	carton	288.00	19.00	34.00	44.00	26.00	1,496.00	38,896.00	2.00	77,792.00	38.00
Nail polisher: Big size	carton	216.00	28.00	35.00	39.00	36.00	1,365.00	49,140.00	5.00	245,700.00	140.00
Nail polisher: Square bottle	carton	360.00	34.00	33.00	43.00	47.00	1,419.00	66,693.00	10.00	666,930.00	340.00
Nail polisher: Small size	carton	360.00	30.00	26.00	31.00	52.00	806.00	41,912.00	2.00	83,824.00	60.00
Olive oil: Small size	carton	360.00	30.00	26.00	31.00	52.00	806.00	41,912.00	2.00	83,824.00	60.00
Olive oil: Big size	carton	216.00	28.00	35.00	39.00	36.00	1,365.00	49,140.00	5.00	245,700.00	140.00
Razor Blade: Superthin	carton	100.00	8.50	20.00	45.00	22.00	900.00	19,800.00	3.00	59,400.00	28.50
Razor Blade: SuperMax	carton	100.00	8.50	19.00	44.00	21.00	836.00	17,556.00	2.00	35,112.00	17.00
Razor Blade: SuperStainless	carton	100.00	6.90	20.00	45.00	22.00	900.00	19,800.00	3.00	59,400.00	20.70
Razor Blade: Atta	Wooden crate	100.00	25.00	35.00	49.00	30.00	1,715.00	51,450.00	10.00	514,500.00	250.00
Razor Blade: Feather	carton	100.00	30.00	34.50	53.50	30.00	1,845.75	55,372.50	2.00	110,745.00	60.00
Razor Blade: Dorgo	carton	10,000.00	15.00	35.00	55.00	23.00	1,925.00	44,275.00	5.00	221,375.00	75.00
Clipping Blade: Sakura	carton	7,200.00	30.00	26.00	33.00	21.00	858.00	18,018.00	2.00	36,036.00	60.00
Clipping Blade: Dragonfly	carton	7,200.00	30.00	25.00	33.00	20.00	825.00	16,500.00	5.00	82,500.00	150.00
Short Clipping Blade: Dragonfly	carton	7,200.00	30.00	27.00	36.00	21.00	972.00	20,412.00	10.00	204,120.00	300.00
Razor: S.Doll	carton	3,000.00	25.00	27.00	40.00	45.00	1,080.00	48,600.00	5.00	243,000.00	125.00
Razor: 4 pieces in one pack	carton	960.00	25.00	37.00	45.00	49.00	1,665.00	81,585.00	3.00	244,755.00	75.00
Tradition razor	carton	3,000.00	18.00	30.00	45.00	47.50	1,350.00	64,125.00	5.00	320,625.00	90.00
Razor: Double blades SuperMax	carton	144.00	6.10	33.00	41.00	40.00	1,353.00	54,120.00	5.00	270,600.00	30.50
Razor: Doctortil	carton	720.00	5.40	36.00	40.00	49.00	1,440.00	70,560.00	5.00	352,800.00	27.00
Razor: single blades Gillette Click	carton	144.00	12.00	36.00	55.00	18.00	1,980.00	35,640.00	25.00	89,100.00	300.00
Razor: Gillette Thin 2	carton	288.00	2.50	40.00	65.00	13.00	2,600.00	33,800.00	50.00	1,690,000.00	125.00
Razor: with Nail cutter	carton	360.00	5.50	39.00	20.00	45.00	780.00	35,100.00	3.00	105,300.00	16.50
Razor: Karai	bundle	120.00	6.60	15.00	28.50	48.00	427.50	20,520.00	5.00	102,600.00	33.00
Razor: Feather	parcel	144.00	4.50	13.00	36.00	48.00	468.00	22,464.00	3.00	67,392.00	13.50
Razor: with 2 blades	carton	480.00	16.00	45.00	58.00	40.00	2,610.00	104,400.00	5.00	522,000.00	80.00
Razor: Fancy	carton	360.00	5.50	38.00	41.00	45.00	1,558.00	70,110.00	10.00	701,100.00	55.00
Razor: Green Sayuri	carton	360.00	5.50	38.00	40.00	46.50	1,520.00	70,680.00	2.00	141,360.00	11.00
Razor: Yellow Sayuri	carton	360.00	5.50	38.00	40.00	46.50	1,520.00	70,680.00	3.00	212,040.00	16.50

**Table B.1: The receiving analysis chart (RAC) (Cont.)**

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Razor TCI Set	carton	120.00	2.50	39.00	70.00	17.00	2,030.00	34,510.00	5.00	172,550.00	12.50
Toothbrush Soft, transparent Eastman	carton	300.00	20.00	20.00	64.00	44.00	1,280.00	56,320.00	20.00	1,126,400.00	400.00
Toothbrush 3 in one pack JGA, turbid	carton	432.00	16.00	46.00	57.00	27.00	2,622.00	70,794.00	3.00	212,382.00	48.00
Toothbrush 3 in one pack JGA, transparent	carton	432.00	16.00	46.00	57.00	27.00	2,622.00	70,794.00	3.00	212,382.00	48.00
Toothbrush Popular Eastman	carton	144.00	3.70	23.00	47.00	27.00	1,081.00	29,187.00	10.00	291,870.00	37.00
Toothbrush 12 in one box, Medium Victory	carton	144.00	5.60	26.00	33.00	20.00	858.00	17,160.00	10.00	171,600.00	56.00
Toothbrush 12 in one box, Soft Victory	carton	144.00	5.60	26.00	33.00	20.00	858.00	17,160.00	20.00	343,200.00	112.00
Toothbrush 30 in one box, Medium Victory	carton	120.00	5.00	26.00	33.00	21.00	858.00	19,734.00	10.00	197,340.00	50.00
Toothbrush Slim Victory	carton	144.00	3.60	18.00	38.00	27.00	1,444.00	38,988.00	10.00	389,880.00	36.00
Toothbrush 30 in one box, Soft Victory	carton	120.00	4.70	26.00	33.00	21.00	858.00	19,734.00	10.00	197,340.00	47.00
Toothbrush OralB Mod	carton	96.00	2.50	23.50	37.50	25.00	881.25	22,031.25	10.00	220,312.50	25.00
Toothbrush OralB Soft	carton	96.00	2.50	23.50	37.50	25.00	881.25	22,031.25	20.00	440,625.00	50.00
Toothbrush Chinese, Kid	carton	720.00	10.00	25.00	46.00	44.00	1,150.00	50,600.00	2.00	101,200.00	20.00
Toothbrush Chinese, Adult 650	carton	1,200.00	16.00	24.00	44.00	66.00	1,056.00	69,696.00	3.00	209,088.00	28.00
Toothbrush Chinese, Adult 940	carton	1,200.00	15.00	47.00	48.00	37.00	2,256.00	83,472.00	2.00	166,944.00	30.00
Toothbrush CASA, 203	carton	600.00	13.20	46.00	61.00	28.00	2,806.00	78,568.00	5.00	392,840.00	66.00
Toothbrush CASA, 204	carton	600.00	13.20	46.00	61.00	28.00	2,806.00	78,568.00	5.00	392,840.00	66.00
Toothbrush CASA, 205	carton	600.00	13.20	46.00	61.00	28.00	2,806.00	78,568.00	5.00	392,840.00	66.00
Toothbrush CASA, 207	carton	600.00	13.20	46.00	61.00	28.00	2,806.00	78,568.00	5.00	392,840.00	66.00
Toothbrush CASA, 208	carton	600.00	13.20	46.00	61.00	28.00	2,806.00	78,568.00	5.00	392,840.00	66.00
Toothbrush CASA, 210	carton	600.00	13.20	46.00	61.00	28.00	2,806.00	78,568.00	5.00	392,840.00	66.00
Toothbrush JAGA, 674	carton	600.00	10.00	46.00	57.00	27.00	2,622.00	70,794.00	6.00	424,764.00	60.00
Toothbrush JAGA, 690	carton	600.00	10.00	46.00	57.00	27.00	2,622.00	70,794.00	6.00	424,764.00	60.00
Toothbrush JAGA, 698	carton	600.00	10.00	46.00	57.00	27.00	2,622.00	70,794.00	6.00	424,764.00	60.00
Toothbrush JAGA, 699	carton	600.00	10.00	46.00	57.00	27.00	2,622.00	70,794.00	6.00	424,764.00	60.00
Toothbrush JAGA, 739	carton	600.00	10.00	46.00	57.00	27.00	2,622.00	70,794.00	6.00	424,764.00	60.00
Toothbrush JAGA, 740	carton	600.00	10.00	46.00	57.00	27.00	2,622.00	70,794.00	6.00	424,764.00	60.00
Toothbrush OSAKA, 204	carton	480.00	8.00	25.50	43.00	59.00	1,096.50	64,693.50	6.00	388,161.00	48.00
Toothbrush OSAKA, 205	carton	480.00	8.00	25.50	43.00	59.00	1,096.50	64,693.50	6.00	388,161.00	48.00
Toothbrush OSAKA, 206	carton	480.00	8.00	25.50	43.00	59.00	1,096.50	64,693.50	6.00	388,161.00	48.00
Toothbrush Kid, Komo	carton	576.00	6.00	29.00	43.00	47.00	1,247.00	58,609.00	5.00	292,045.00	33.00
Toothbrush Jomana	carton	288.00	2.50	21.00	44.00	19.00	924.00	17,556.00	60.00	1,053,360.00	150.00
Nail cleaning brush flat iron shape	carton	72.00	4.50	31.00	32.00	22.00	992.00	21,824.00	6.00	110,944.00	27.00
Nail cleaning brush Big, transparent	carton	180.00	5.00	12.00	40.00	16.50	1,280.00	21,120.00	5.00	105,600.00	25.00
One baht cotton wool	parcel	2,500.00	7.00	70.00	50.00	120.00	3,500.00	420,000.00	4.00	1,680,000.00	28.00
Cotton wool Ambulance bus	carton	240.00	7.50	41.00	40.00	32.00	1,640.00	52,480.00	10.00	524,800.00	75.00
Ten baht cotton wool	parcel	240.00	8.00	45.00	45.00	80.00	2,025.00	162,000.00	5.00	810,000.00	40.00
27 baht cotton wool	carton	72.00	12.00	47.00	62.00	80.00	2,914.00	233,120.00	2.00	466,240.00	24.00
Cotton wool Shell, pot JoJo	carton	240.00	14.00	44.00	58.00	42.00	2,552.00	107,184.00	10.00	1,071,840.00	140.00
Cotton buds 50 pieces in pack	carton	1,200.00	10.00	42.00	54.00	40.00	2,268.00	90,720.00	10.00	907,200.00	100.00
Cotton buds 100 pieces in pack	carton	576.00	10.00	38.00	49.00	48.00	1,862.00	89,376.00	10.00	893,760.00	100.00
Cotton buds Fancy Pot 2 slots	carton	240.00	20.00	50.00	67.00	44.00	3,350.00	147,400.00	5.00	737,000.00	100.00
Cotton buds Fancy Jumbo Shell Pot	carton	240.00	21.00	50.00	67.00	51.00	3,350.00	170,850.00	5.00	854,250.00	105.00
Cotton buds Fancy Giant size pot	carton	144.00	13.00	58.00	80.00	30.00	4,640.00	139,200.00	2.00	278,400.00	26.00
Cotton buds Square box, pineapple	carton	240.00	14.00	35.00	60.00	50.00	2,100.00	105,000.00	10.00	1,050,000.00	140.00
Cotton buds transparent small size pot	carton	240.00	9.00	33.00	44.00	41.00	1,452.00	59,532.00	10.00	595,320.00	90.00
Cotton buds 100 pieces in pack	carton	240.00	9.30	37.00	44.00	40.00	1,628.00	65,120.00	10.00	651,200.00	93.00
Cotton buds 100 pieces in pack	carton	960.00	8.50	43.00	53.00	41.00	2,279.00	93,459.00	10.00	934,590.00	85.00
Soap kok-leang	carton	72.00	4.50	21.00	40.00	20.00	840.00	16,800.00	5.00	84,000.00	22.50
Soap Ginger	carton	300.00	25.00	21.00	41.00	30.00	861.00	25,830.00	5.00	129,150.00	125.00
Soap Small Cucumber	carton	144.00	8.00	32.00	38.00	14.00	1,216.00	17,024.00	2.00	34,048.00	16.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Soap: Tamarine	carton	240.00	11.00	27.00	39.00	26.00	1,053.00	27,378.00	2.00	54,756.00	22.00
Soap: Laura	carton	120.00	22.00	26.00	33.00	40.00	858.00	34,320.00	5.00	171,600.00	110.00
Soap: Big Tamarine	carton	120.00	16.00	35.00	40.00	22.00	1,400.00	30,800.00	2.00	61,600.00	32.00
Soap: Ya-Un	carton	72.00	6.00	25.00	32.00	25.00	800.00	20,000.00	10.00	200,000.00	60.00
Shower sponge with Shower Cream	big parcel	500.00	12.00	120.00	110.00	40.00	13,200.00	528,000.00	4.00	2,112,000.00	48.00
Shower sponge: Natural	carton	36.00	1.80	29.00	31.00	20.00	899.00	17,980.00	10.00	179,800.00	18.00
Shower sponge: Jolly 001	carton	144.00	3.80	30.00	50.00	50.00	1,500.00	75,000.00	2.00	150,000.00	7.60
Shower sponge: Jolly 002	carton	144.00	3.80	30.00	50.00	50.00	1,500.00	75,000.00	3.00	225,000.00	11.40
Shower sponge: Jolly 003	carton	144.00	3.80	30.00	50.00	50.00	1,500.00	75,000.00	2.00	150,000.00	7.60
Shower sponge: Jolly 004	carton	144.00	3.80	30.00	50.00	50.00	1,500.00	75,000.00	15.00	1,125,000.00	57.00
Menthol: Mid	carton	30.00	9.00	23.50	34.00	20.00	799.00	15,980.00	5.00	79,900.00	45.00
Refilled Gas: Buca: Jumbo	carton	12.00	4.20	21.00	28.00	21.00	588.00	12,348.00	20.00	246,960.00	84.00
Refilled Gas: Buca: Small	carton	288.00	0.90	30.00	45.00	44.00	1,350.00	59,400.00	5.00	297,000.00	4.50
a cigarette lighter: AS	carton	1,000.00	20.00	27.00	45.00	28.00	1,215.00	34,020.00	5.00	170,100.00	100.00
a cigarette lighter: Pilot	carton	1,000.00	22.00	27.00	44.00	28.00	1,188.00	33,264.00	5.00	166,320.00	110.00
a cigarette lighter: Red Tai-Yo	carton	1,000.00	20.00	28.00	46.00	18.00	1,288.00	23,184.00	50.00	1,159,200.00	1,000.00
a cigarette lighter: Tai-Yo	carton	1,000.00	20.00	28.00	46.00	28.00	1,288.00	36,064.00	57.00	2,055,648.00	1,140.00
a cigarette lighter: Black Star	carton	1,000.00	20.00	27.00	45.00	28.00	1,215.00	34,020.00	5.00	170,100.00	100.00
a cigarette lighter: Red Star	carton	1,000.00	20.00	27.00	45.00	28.00	1,215.00	34,020.00	5.00	170,100.00	100.00
Dry: Alcohol cup	carton	500.00	18.00	26.00	50.00	23.00	1,300.00	29,900.00	5.00	149,500.00	90.00
A gas oven: lighter grade A	carton	50.00	6.50	36.00	39.50	41.00	1,422.00	58,302.00	5.00	291,510.00	32.50
A gas oven: lighter grade C	carton	120.00	9.00	51.00	32.50	18.50	1,657.50	30,663.75	20.00	613,275.00	180.00
Kerosine: Jun	carton	24.00	3.30	18.00	22.00	15.00	396.00	5,940.00	50.00	297,000.00	165.00
Indigo: Big bottle, Crown	carton	108.00	9.00	36.00	36.50	38.00	1,314.00	49,932.00	2.00	99,864.00	18.00
Indigo: bottle Mokey	carton	288.00	7.50	24.00	33.00	28.00	792.00	22,176.00	2.00	44,352.00	15.00
Indigo: square shape, Crown	bundle	60.00	1.20	10.00	24.00	9.00	240.00	2,160.00	20.00	43,200.00	24.00
Indigo: Small bottle, Chicken	carton	720.00	19.00	27.00	50.00	38.50	1,350.00	51,975.00	2.00	103,950.00	38.00
Indigo: Square bottle, Chicken	carton	720.00	13.00	29.00	41.00	25.00	1,276.00	31,900.00	2.00	63,800.00	26.00
Indigo: Big bottle, Chicken	carton	144.00	1.60	33.00	45.00	35.00	1,485.00	51,975.00	3.00	155,925.00	4.80
Indigo: Liquid, Chicken	carton	96.00	18.00	33.00	42.00	49.00	1,386.00	67,914.00	2.00	135,828.00	36.00
Indigo: Medium bottle, Chicken	carton	360.00	22.00	35.00	40.00	42.00	1,400.00	58,800.00	2.00	117,600.00	44.00
Indigo: square shape, Monkey	carton	360.00	9.00	24.00	33.00	28.00	792.00	22,176.00	2.00	44,352.00	18.00
Indigo: big square shape, Crown	carton	72.00	12.00	31.00	46.00	21.00	1,426.00	29,946.00	4.00	119,784.00	48.00
Fabric Softener: Pink	carton	36.00	15.00	26.00	51.00	40.00	1,326.00	53,040.00	5.00	265,200.00	75.00
Fabric Softener: Sky-blue	carton	36.00	15.00	26.00	51.00	40.00	1,326.00	53,040.00	5.00	265,200.00	75.00
Fabric Whitener	carton	72.00	8.00	24.50	33.00	28.00	808.50	22,638.00	10.00	226,380.00	80.00
Fabric cleaning soap: 3 stars	carton	50.00	16.00	31.50	31.00	23.00	976.50	22,459.50	3.00	67,378.50	48.00
Fabric cleaning soap: Carus crane	carton	50.00	15.00	31.00	31.00	21.00	961.00	20,181.00	3.00	60,543.00	48.00
Metal polisher: Medium, Brasso	carton	12.00	3.00	17.00	21.50	16.00	365.50	5,848.00	10.00	58,480.00	30.00
Metal polisher: Small, Brasso	carton	24.00	3.40	22.00	32.00	11.50	704.00	8,096.00	50.00	404,800.00	170.00
Metal polisher: Big, Brasso	carton	12.00	5.80	21.00	27.00	19.00	567.00	10,773.00	10.00	107,730.00	58.00
Metal polisher: Small, Vnol	carton	20.00	1.40	16.50	18.00	12.00	297.00	3,564.00	20.00	71,280.00	28.00
Metal polisher: Big, Vnol	carton	20.00	2.60	22.00	21.50	15.00	473.00	7,095.00	20.00	141,900.00	52.00
Shoe polish: small, black	carton	144.00	9.00	21.00	31.00	27.00	713.00	19,251.00	20.00	385,020.00	180.00
Shoe polish: small, brown	carton	144.00	9.00	21.00	31.00	27.00	713.00	19,251.00	10.00	192,510.00	90.00
Shoe polish: big, black	carton	72.00	9.50	30.00	30.50	24.50	915.00	22,417.50	10.00	224,175.00	95.00
Shoe rubber: Kiwi, White	carton	48.00	9.50	21.00	45.50	17.00	955.50	16,243.50	5.00	81,217.50	47.50
Shoe rubber: Kiwi, Black	carton	48.00	9.50	21.00	45.50	17.00	955.50	16,243.50	8.00	129,948.00	76.00
Shoe rubber: Kiwi, Brown	carton	48.00	9.50	21.00	45.50	17.00	955.50	16,243.50	5.00	81,217.50	47.50
Leather polish: Kiwi, Black	carton	48.00	5.50	22.00	48.00	65.00	1,056.00	68,640.00	8.00	549,120.00	44.00
Leather polish: Kiwi, Classic Black	carton	48.00	5.50	22.00	48.00	65.00	1,056.00	68,640.00	5.00	343,200.00	27.50



Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Leather polish: Kiwi, Brown	carton	48.00	5.50	22.00	48.00	65.00	1,056.00	68,640.00	7.00	480,480.00	38.50
Leather polish: Kiwi, Classic Brown	carton	48.00	5.50	22.00	48.00	65.00	1,056.00	68,640.00	5.00	343,200.00	27.50
Wax for Leather Shoe: Small	carton	24.00	4.10	30.00	32.00	13.00	960.00	12,480.00	60.00	748,800.00	246.00
Glass Cleaner: Buka	carton	12.00	4.00	17.50	23.00	23.00	402.50	9,257.50	20.00	185,150.00	80.00
Bath room cleaner: Jackie, Pink	carton	24.00	13.00	29.50	43.00	24.00	1,268.50	30,444.00	10.00	304,440.00	130.00
Mosquitoes wiping joss stick: Dragon	carton	96.00	12.00	37.00	48.00	22.00	1,776.00	39,072.00	20.00	781,440.00	240.00
Mosquitoes wiping reagent: Ko-Yo-15	carton	288.00	2.70	31.00	36.00	14.00	1,116.00	15,624.00	10.00	156,240.00	27.00
Mentholated ointment	carton	288.00	35.00	38.00	51.00	23.00	2,014.00	46,322.00	2.00	92,644.00	70.00
Dish soap cleanser	carton	100.00	5.00	24.00	29.00	10.00	696.00	6,960.00	25.00	174,000.00	125.00
Dish liquid cleanser: Sunny Wash 800cc	carton	24.00	20.00	33.00	44.00	30.00	1,452.00	43,560.00	10.00	435,600.00	200.00
Dish liquid cleanser: Cleo	carton	24.00	12.00	27.00	38.00	26.00	1,026.00	26,676.00	50.00	1,333,800.00	600.00
Cleaning stainless frill: Poly	carton	144.00	5.00	41.00	46.00	17.00	1,978.00	31,626.00	30.00	1,008,780.00	150.00
Mothball: ATM, small	carton	144.00	6.00	27.00	38.00	10.50	1,026.00	10,773.00	10.00	107,730.00	60.00
Mothball: ATM, big	carton	144.00	14.00	34.00	50.00	13.00	1,700.00	22,100.00	10.00	221,000.00	140.00
Mothball: Kilo	carton	25.00	25.00	35.00	42.00	24.00	1,470.00	35,280.00	10.00	352,800.00	250.00
Mothball: Jumbo size	carton	25.00	25.00	36.00	48.00	25.50	1,728.00	44,064.00	5.00	220,320.00	125.00
Mothball: Small pack	carton	144.00	7.00	25.00	38.00	22.00	950.00	20,900.00	10.00	209,000.00	70.00
Mothball: Big pack 1x2	carton	144.00	9.00	30.00	40.00	25.00	1,200.00	30,000.00	5.00	150,000.00	45.00
Rubber gloves: Canon, L	carton	240.00	22.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	22.00
Rubber gloves: Canon, M	carton	240.00	22.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	22.00
Rubber gloves: Canon, S	carton	240.00	22.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	22.00
Rubber gloves: Dragon, L	carton	240.00	20.00	37.00	74.00	43.00	2,738.00	117,734.00	5.00	588,670.00	100.00
Rubber gloves: Dragon, M	carton	240.00	20.00	37.00	74.00	43.00	2,738.00	117,734.00	5.00	588,670.00	100.00
Rubber gloves: Dragon, S	carton	240.00	20.00	37.00	74.00	43.00	2,738.00	117,734.00	5.00	588,670.00	100.00
Rubber gloves: OK, 7.5, cream color	carton	144.00	24.00	35.00	46.00	42.00	1,610.00	67,620.00	1.00	67,620.00	24.00
Rubber gloves: OK, 7.5, orange color	carton	144.00	24.00	35.00	46.00	42.00	1,610.00	67,620.00	1.00	67,620.00	24.00
Rubber gloves: OK, 8.5, cream color	carton	144.00	24.00	35.00	46.00	42.00	1,610.00	67,620.00	1.00	67,620.00	24.00
Rubber gloves: OK, 8.5, orange color	carton	144.00	24.00	35.00	46.00	42.00	1,610.00	67,620.00	1.00	67,620.00	24.00
Rubber gloves: Panda, Black, L	carton	240.00	30.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	30.00
Rubber gloves: Panda, Black, M	carton	240.00	30.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	30.00
Rubber gloves: Panda, Black, S	carton	240.00	30.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	30.00
Rubber gloves: Panda, Orange, L	carton	240.00	30.00	36.00	42.00	74.00	1,512.00	111,888.00	4.00	447,552.00	120.00
Rubber gloves: Panda, Orange, M	carton	240.00	30.00	36.00	42.00	74.00	1,512.00	111,888.00	3.00	335,664.00	90.00
Rubber gloves: Panda, Orange, S	carton	240.00	30.00	36.00	42.00	74.00	1,512.00	111,888.00	3.00	335,664.00	90.00
Rubber gloves: Panda, Goose, 7.5, Pink	carton	144.00	16.80	35.00	46.00	42.00	1,610.00	67,620.00	1.00	67,620.00	16.80
Rubber gloves: Panda, Goose, 8.5, Pink	carton	144.00	16.80	35.00	46.00	42.00	1,610.00	67,620.00	1.00	67,620.00	16.80
Rubber gloves: Sun, Orange, L	carton	240.00	20.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	20.00
Rubber gloves: Sun, Orange, M	carton	240.00	20.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	20.00
Rubber gloves: Sun, Orange, S	carton	240.00	20.00	36.00	42.00	74.00	1,512.00	111,888.00	1.00	111,888.00	20.00
Rubber gloves: PVC, White, M	carton	1,000.00	16.00	27.00	38.00	32.00	1,566.00	50,112.00	10.00	501,120.00	160.00
Doctor gloves: L	carton	1,000.00	8.00	27.00	38.00	25.00	1,026.00	25,650.00	5.00	128,250.00	40.00
Doctor gloves: M	carton	1,000.00	8.00	27.00	38.00	25.00	1,026.00	25,650.00	10.00	256,500.00	80.00
Doctor gloves: S	carton	1,000.00	8.00	27.00	38.00	25.00	1,026.00	25,650.00	20.00	513,000.00	160.00
Wall hooker 1x3	carton	160.00	7.50	35.00	47.00	29.00	1,645.00	47,705.00	5.00	238,525.00	37.50
Wall hooker 1x8	carton	200.00	9.00	36.00	36.00	29.00	1,296.00	37,584.00	5.00	187,920.00	45.00
Wall hooker Fancy	carton	720.00	12.00	42.00	49.00	49.00	2,058.00	100,842.00	3.00	302,526.00	36.00
Wall hooker: 3 in a row	bundle	60.00	3.70	24.00	24.00	30.00	576.00	17,280.00	2.00	34,560.00	7.40
Wall hooker: 4 in a row	bundle	60.00	5.40	23.50	33.00	30.00	775.50	23,265.00	2.00	46,530.00	10.80
Wall hooker: 5 in a row	bundle	60.00	6.00	24.00	24.00	30.00	576.00	17,280.00	2.00	34,560.00	12.00
Nipple: Akasen L	carton	288.00	4.10	27.00	35.00	28.00	945.00	26,460.00	5.00	132,300.00	20.50
Nipple: Akasen M	carton	288.00	4.10	27.00	35.00	28.00	945.00	26,460.00	5.00	132,300.00	20.50

**Table B.1: The receiving analysis chart (RAC) (Cont.)**

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Nipple: Akasen S	carton	288.00	4.10	27.00	35.00	28.00	945.00	26,460.00	5.00	132,300.00	20.50
Nipple: Kiki L	carton	288.00	4.50	27.00	51.00	19.00	1,377.00	26,163.00	5.00	130,815.00	22.50
Nipple: Kiki M	carton	288.00	4.50	27.00	51.00	19.00	1,377.00	26,163.00	5.00	130,815.00	22.50
Nipple: Kiki S	carton	288.00	4.50	27.00	51.00	19.00	1,377.00	26,163.00	5.00	130,815.00	22.50
Nipple: Pegen, L	carton	720.00	12.00	45.00	55.00	30.00	2,475.00	74,250.00	2.00	148,500.00	24.00
Nipple: Pegen, M	carton	720.00	12.00	45.00	55.00	30.00	2,475.00	74,250.00	2.00	148,500.00	24.00
Nipple: Pegen, S	carton	720.00	12.00	45.00	55.00	30.00	2,475.00	74,250.00	2.00	148,500.00	24.00
Toothpick 1x10	carton	30.00	21.00	33.00	35.00	35.00	1,155.00	40,425.00	10.00	404,250.00	210.00
Toothpick 2in1	carton	240.00	12.00	30.00	39.00	44.00	1,170.00	51,480.00	10.00	514,800.00	120.00
Toothpick Bandang, Medium	carton	360.00	16.00	31.50	37.50	38.00	1,256.25	47,737.50	20.00	954,750.00	320.00
Toothpick Kilo	carton	40.00	20.00	28.00	43.00	38.00	1,204.00	45,752.00	3.00	137,256.00	60.00
Toothpick Bamboo, Medium	carton	192.00	9.50	25.00	34.00	28.00	850.00	23,800.00	5.00	119,000.00	47.50
Toothpick Bamboo, Small	carton	300.00	12.00	25.00	33.00	29.00	825.00	23,925.00	2.00	47,850.00	24.00
Toothpick Bamboo, Large	carton	120.00	6.50	25.00	33.00	29.00	825.00	23,925.00	10.00	239,250.00	65.00
Shoe rubber G2-1	small box	48.00	0.70	10.00	20.00	17.00	200.00	3,400.00	50.00	170,000.00	35.00
Shoe rubber G2-4	small box	48.00	0.70	10.00	20.00	17.00	200.00	3,400.00	50.00	170,000.00	35.00
Shoe rubber G3-1	small box	48.00	0.80	10.00	20.00	17.00	200.00	3,400.00	50.00	170,000.00	40.00
Shoe rubber G3-4	small box	48.00	0.70	10.00	20.00	17.00	200.00	3,400.00	50.00	170,000.00	35.00
Shoe supporter Man, 10 kgs	carton	120.00	6.20	35.00	45.00	24.00	1,575.00	37,800.00	2.00	75,600.00	12.40
Shoe supporter Lady, 10 kgs	carton	120.00	6.20	35.00	45.00	24.00	1,575.00	37,800.00	2.00	75,600.00	12.40
Mirror with Swinger	parcel	144.00	18.00	36.00	46.00	40.00	1,656.00	66,240.00	2.00	132,480.00	36.00
Mirror with Plastic frame	bundle	24.00	5.30	37.00	38.00	20.00	1,406.00	28,120.00	10.00	281,200.00	53.00
Mirror bath room	carton	60.00	6.20	21.00	66.00	27.00	1,386.00	37,422.00	6.00	224,532.00	37.20
Mirror Flower 10x14 ,hang	small box	12.00	8.00	16.00	37.00	27.00	592.00	15,984.00	5.00	79,920.00	40.00
Mirror Flower 12x16 ,hang	small box	12.00	9.50	16.00	42.00	32.00	672.00	21,504.00	5.00	107,520.00	47.50
Mirror Flower 14x20 ,hang	small box	12.00	15.00	15.00	53.00	37.00	795.00	29,415.00	3.00	88,245.00	45.00
Mirror Flower 7x10 ,hang	small box	12.00	5.00	15.00	27.00	19.00	405.00	7,695.00	10.00	76,950.00	50.00
Mirror Flower 8x12 ,hang	small box	12.00	6.50	16.00	32.00	21.50	512.00	11,008.00	10.00	110,080.00	65.00
Mirror Flower No 10	small box	12.00	4.70	14.50	25.00	18.00	362.50	6,525.00	20.00	130,500.00	94.00
Mirror Flower No 12	small box	12.00	5.50	14.50	26.50	19.00	384.25	7,390.75	10.00	73,907.50	55.00
Mirror Flower No.6	small box	12.00	1.80	14.50	18.00	10.00	261.00	2,610.00	30.00	78,360.00	54.00
Mirror Flower No 7	small box	12.00	2.40	14.50	18.00	13.50	261.00	3,523.50	30.00	105,705.00	72.00
Mirror Flower No.8	small box	12.00	2.80	14.50	20.00	14.00	290.00	4,060.00	20.00	81,200.00	56.00
Mirror Flower No 9	small box	12.00	3.40	14.50	21.00	15.50	304.50	4,719.75	20.00	94,395.00	68.00
Mirror Flower No 4	bundle	120.00	8.00	21.00	38.00	12.00	874.00	10,488.00	10.00	104,880.00	80.00
Mirror Flower No 5	bundle	120.00	11.00	21.00	45.00	13.00	1,035.00	13,455.00	10.00	134,550.00	110.00
Bottle opener 200	carton	600.00	35.00	40.00	50.00	30.00	2,000.00	60,000.00	2.00	120,000.00	70.00
Bottle opener 900	carton	600.00	35.00	40.00	50.00	30.00	2,000.00	60,000.00	2.00	120,000.00	70.00
Wine opener: 800	carton	600.00	45.00	45.00	48.00	40.00	2,160.00	86,400.00	1.00	86,400.00	45.00
Can opener : 5 rings	bundle	60.00	3.60	11.00	20.00	34.00	220.00	7,480.00	10.00	74,800.00	36.00
Bottle opener A80	parcel	12.00	1.00	10.50	20.00	7.00	210.00	1,470.00	50.00	73,500.00	50.00
Bottle opener 777	carton	240.00	24.00	30.00	39.00	30.00	1,170.00	35,100.00	5.00	175,500.00	120.00
Nail cutter: 129	carton	600.00	26.00	26.00	50.00	20.00	1,300.00	26,000.00	10.00	260,000.00	260.00
Nail cutter: 211	carton	600.00	30.00	23.00	46.00	18.00	1,058.00	19,644.00	5.00	95,220.00	150.00
Nail cutter: 309	carton	1,200.00	23.00	36.00	40.00	20.00	1,440.00	28,800.00	5.00	144,000.00	115.00
Nail cutter: 600	carton	1,200.00	28.00	39.00	40.00	18.00	1,560.00	28,080.00	5.00	140,400.00	140.00
Nail cutter: 602	carton	1,200.00	30.00	33.50	34.00	15.00	1,139.00	17,085.00	5.00	85,425.00	150.00
Nail cutter: 777, 211	small box	12.00	0.50	8.00	10.00	2.50	80.00	200.00	50.00	10,000.00	25.00
Nail cutter: 999, Small	small box	12.00	0.20	6.00	7.50	2.50	45.00	112.50	100.00	11,250.00	20.00
Nail cutter: 999, Big	small box	12.00	0.50	8.00	9.00	3.00	72.00	216.00	50.00	10,800.00	25.00
Shoe rope 24 inches, White	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12,100.00	4.90

**Table B.1: The receiving analysis chart (RAC) (Cont.)**

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Shoe rope 24 inches, Black	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12,100.00	4.90
Shoe rope 24 inches, Brown	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12,100.00	4.90
Shoe rope 24 inches, Dark brown	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12,100.00	4.90
Shoe rope 36 inches, White	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19,500.00	3.30
Shoe rope 36 inches, Black	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19,500.00	3.30
Shoe rope 36 inches, Brown	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19,500.00	3.30
Shoe rope 36 inches, Dark brown	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19,500.00	3.30
Shoe rope 24 inches, White, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22,080.00	5.00
Shoe rope 24 inches, Black, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22,080.00	5.00
Shoe rope 24 inches, Brown, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22,080.00	5.00
Shoe rope 24 inches, Dark brown, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22,080.00	5.00
Shoe rope 36 inches, White, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31,360.00	8.00
Shoe rope 36 inches, Black, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31,360.00	8.00
Shoe rope 36 inches, Brown, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31,360.00	8.00
Shoe rope 36 inches, Dark brown, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31,360.00	8.00
Shoe rope 42 inches, White, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38,686.00	6.90
Shoe rope 42 inches, Black, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38,686.00	6.90
Shoe rope 42 inches, Brown, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38,686.00	6.90
Shoe rope 42 inches, Dark brown, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38,686.00	6.90
Shoe rope 60 inches, White, Big	parcel	60.00	11.00	10.00	30.00	66.00	900.00	59,400.00	1.00	59,400.00	11.00
Shoe rope 60 inches, Black, Big	parcel	60.00	11.00	10.00	30.00	66.00	900.00	59,400.00	1.00	59,400.00	11.00
Shoe rope 60 inches, Brown, Big	parcel	60.00	11.00	10.00	30.00	66.00	900.00	59,400.00	1.00	59,400.00	11.00
Shoe rope 24 inches, White, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19,140.00	3.30
Shoe rope 24 inches, Black, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19,140.00	3.30
Shoe rope 24 inches, Brown, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19,140.00	3.30
Shoe rope 24 inches, Dark brown, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19,140.00	3.30
Shoe rope 36 inches, White, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36,000.00	4.00
Shoe rope 36 inches, Black, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36,000.00	4.00
Shoe rope 36 inches, Brown, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36,000.00	4.00
Shoe rope 36 inches, Dark brown, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36,000.00	4.00
Shoe rope 42 inches, White, Flat	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	2.00	77,372.00	12.00
Shoe rope 42 inches, Mix, Flat	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	3.00	115,158.00	18.00
Shoe rope 42 inches, Black, Flat	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	2.00	77,372.00	12.00
Shoe rope 42 inches, Brown, Flat	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	2.00	77,372.00	12.00
Shoe rope 42 inches, Dark brown, Flat	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	2.00	77,372.00	12.00
Shoe rope 48 inches, White, Flat	parcel	60.00	8.30	30.00	30.00	56.00	900.00	50,400.00	1.00	50,400.00	8.30
Shoe rope 48 inches, Black, Flat	parcel	60.00	8.30	30.00	30.00	56.00	900.00	50,400.00	1.00	50,400.00	8.30
Shoe rope 48 inches, Brown, Flat	parcel	60.00	8.30	30.00	30.00	56.00	900.00	50,400.00	1.00	50,400.00	8.30
Shoe rope 60 inches, White, Flat	parcel	60.00	4.90	30.00	30.00	63.00	900.00	56,700.00	1.00	56,700.00	9.00
Shoe rope 60 inches, Black, Flat	parcel	60.00	4.90	30.00	30.00	63.00	900.00	56,700.00	1.00	56,700.00	9.00
Shoe rope 60 inches, Brown, Flat	parcel	60.00	4.90	30.00	30.00	63.00	900.00	56,700.00	1.00	56,700.00	9.00
Padlock: Solo 30mm No 84	small box	12.00	1.30	7.50	13.00	6.00	97.50	585.00	16.00	5,850.00	13.00
Padlock: Solo 50mm	small box	6.00	1.80	8.50	13.00	5.50	110.50	607.75	20.00	12,155.00	36.00
Padlock: black, long 32mm	small box	6.00	0.70	9.50	13.00	4.00	123.50	494.00	40.00	19,760.00	28.00
Padlock: black, long 38mm	small box	6.00	1.00	12.00	13.00	4.50	156.00	702.00	30.00	21,060.00	30.00
Padlock: black, long 50mm	small box	6.00	2.20	13.00	16.00	5.00	208.00	1,040.00	10.00	10,400.00	22.00
Padlock: brass, long 32mm	small box	6.00	0.70	10.00	13.00	4.00	130.00	520.00	40.00	20,800.00	28.00
Padlock: brass, short 32mm	small box	12.00	0.60	6.00	13.00	4.00	78.00	312.00	80.00	24,960.00	48.00
Padlock: brass, long 38mm	small box	6.00	1.00	11.50	13.00	4.50	149.50	672.75	30.00	20,182.50	30.00
Padlock: gold, short 50mm	small box	6.00	1.60	9.00	16.00	5.50	144.00	792.00	20.00	15,840.00	32.00
Padlock: black, short 32mm	small box	6.00	0.60	6.00	13.00	4.00	78.00	312.00	40.00	12,480.00	24.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Padlock gold, short 38mm	small box	6.00	1.00	7.00	13.00	4.50	91.00	409.50	80.00	32.760.00	57.00
Padlock gold, long 50mm	small box	6.00	1.70	13.00	16.00	6.00	208.00	1.248.00	10.00	12.480.00	17.00
Padlock Solo 35mm, pack	small box	12.00	1.50	9.00	13.00	6.00	117.00	702.00	20.00	14.040.00	31.00
Padlock Solo 25mm, pack	small box	6.00	0.30	5.00	11.00	3.00	55.00	165.00	100.00	16.500.00	31.00
Padlock Wolf 20mm	small box	12.00	0.40	5.00	9.00	3.00	45.00	135.00	100.00	13.500.00	47.00
Padlock Wolf 25mm	small box	12.00	0.40	6.00	9.50	5.00	57.00	285.00	50.00	14.250.00	27.00
Padlock Wolf 30mm	small box	12.00	0.50	6.00	9.00	5.00	54.00	270.00	50.00	13.500.00	27.00
Padlock black, short 50mm 999	small box	6.00	2.00	9.00	15.00	6.00	135.00	810.00	10.00	8.100.00	27.00
Padlock black, short 38 mm	small box	6.00	1.00	10.00	13.00	4.50	130.00	585.00	40.00	23.400.00	47.00
Padlock Wolf 40mm	small box	12.00	0.80	8.50	10.50	6.50	89.25	580.13	10.00	5.801.25	3.00
Padlock Wolf 50mm	small box	12.00	1.40	10.00	11.00	9.00	110.00	990.00	10.00	9.900.00	14.00
Padlock brass, short 20 mm	small box	12.00	0.40	5.00	13.00	3.00	65.00	195.00	50.00	9.750.00	29.00
Padlock Solo 40mm, pack	small box	12.00	2.00	9.00	13.00	7.00	117.00	819.00	20.00	16.380.00	47.00
Padlock black, short 25mm 999	small box	6.00	0.40	5.00	10.00	3.50	50.00	175.00	100.00	17.500.00	47.00
Padlock gold, long 25mm	small box	12.00	0.80	8.00	9.50	6.00	76.00	456.00	20.00	9.120.00	16.00
Padlock black, short 32mm 999	carton	240.00	20.00	27.00	31.00	15.50	837.00	12.973.50	3.00	38.920.50	57.00
Padlock black, long 38mm	wooden crate	180.00	20.00	37.00	48.00	16.00	1.776.00	28.416.00	2.00	56.832.00	47.00
Padlock black, short 38mm 999	carton	240.00	20.00	27.00	45.00	23.00	1.215.00	27.945.00	2.00	55.890.00	47.00
Padlock black, short 50mm 5 rings	carton	120.00	21.00	28.00	35.00	18.00	980.00	17.640.00	3.00	52.520.00	57.00
Padlock black, short 50mm	carton	60.00	20.00	31.00	31.00	20.00	961.00	19.220.00	4.00	76.880.00	57.00
Padlock gold, long 32mm	wooden crate	240.00	21.00	41.00	41.00	19.00	1.681.00	31.939.00	3.00	95.817.00	63.00
Padlock gold, long 50mm	wooden crate	600.00	20.00	27.00	45.00	18.00	1.215.00	21.870.00	2.00	43.740.00	47.00
Padlock gold, short 25mm	wooden crate	240.00	21.00	31.00	52.00	16.00	1.612.00	25.792.00	10.00	257.920.00	219.00
Padlock gold, short 32mm	wooden crate	240.00	21.00	41.00	41.00	19.00	1.681.00	31.939.00	3.00	95.817.00	63.00
Padlock gold, short 38mm	wooden crate	240.00	20.00	27.00	43.00	18.00	1.161.00	20.898.00	5.00	104.490.00	136.00
Padlock gold, short 50mm	carton	60.00	21.00	28.00	35.00	18.00	980.00	17.640.00	4.00	70.560.00	84.00
Padlock gold, long 38mm 5 rings	wooden crate	180.00	20.00	37.00	48.00	16.00	1.776.00	28.416.00	3.00	85.248.00	57.00
Padlock World 50mm	wooden crate	120.00	21.00	29.00	40.00	20.00	1.160.00	23.200.00	3.00	69.600.00	57.00
Padlock Wolf 20mm	carton	1.200.00	28.00	25.50	39.00	19.50	994.50	19.392.75	2.00	38.785.50	56.00
Padlock Wolf 25mm	carton	600.00	21.00	26.00	31.00	21.00	806.00	16.926.00	2.00	33.852.00	42.00
Padlock Wolf 30mm	carton	600.00	27.00	28.50	35.00	22.00	997.50	21.945.00	2.00	43.890.00	54.00
Padlock Wolf 40mm	carton	240.00	21.00	22.00	36.00	19.00	792.00	15.048.00	2.00	30.096.00	42.00
Padlock Wolf 50mm	carton	120.00	25.00	22.50	39.50	11.50	888.75	10.220.63	3.00	30.681.88	78.00
Padlock VITA long, 40mm	small box	12.00	3.60	15.00	23.00	11.00	345.00	3.795.00	10.00	37.950.00	36.00
Padlock VITA short, 40mm	small box	12.00	3.80	15.00	23.00	11.00	345.00	3.795.00	10.00	37.950.00	36.00
Padlock VITA long, 45mm	small box	12.00	4.40	15.00	23.00	11.00	345.00	3.795.00	10.00	37.950.00	44.00
Padlock VITA short, 45mm	small box	12.00	4.20	15.00	23.00	11.00	345.00	3.795.00	10.00	37.950.00	42.00
Padlock VITA long, 50mm	small box	12.00	5.20	15.00	23.00	11.00	345.00	3.795.00	10.00	37.950.00	52.00
Padlock VITA short, 50mm	small box	12.00	4.80	15.00	23.00	11.00	345.00	3.795.00	10.00	37.950.00	48.00
Padlock Solo 35mm, pack	carton	12.00	3.20	21.50	30.00	14.00	645.00	9.030.00	5.00	45.150.00	16.00
Padlock Solo 40mm, pack	carton	12.00	3.40	21.50	30.00	14.00	645.00	9.030.00	5.00	45.150.00	17.00
Padlock Solo 45mm, pack	carton	12.00	4.00	21.50	30.00	14.00	645.00	9.030.00	5.00	45.150.00	20.00
Padlock Solo 50mm, pack	carton	12.00	3.60	21.50	30.00	14.00	645.00	9.030.00	5.00	45.150.00	18.00
Padlock Solo 55mm, pack	carton	12.00	3.80	21.50	30.00	14.00	645.00	9.030.00	5.00	45.150.00	19.00
U-lock: 3 pieces	small box	12.00	2.00	10.00	16.00	5.00	160.00	800.00	20.00	16.000.00	46.00
U-lock: Harry Master, 115	small box	24.00	2.70	13.50	22.00	4.50	297.00	1.336.50	20.00	26.730.00	54.00
U-lock: Harry Master, 55	small box	24.00	0.50	6.50	17.50	3.00	113.75	341.25	20.00	6.825.00	10.00
U-lock: Harry Master, 75	small box	24.00	0.90	9.00	19.00	3.50	171.00	598.50	20.00	11.970.00	18.00
U-lock: Harry Master, 95	small box	24.00	1.60	11.50	22.50	3.50	258.75	905.63	20.00	18.112.50	32.00
Drawer lock	small box	12.00	1.10	11.00	13.00	6.00	143.00	858.00	20.00	17.160.00	22.00
Hot water pouch stripe pattern, small	carton	300.00	14.00	26.00	52.00	43.00	1.352.00	58.136.00	5.00	290.680.00	70.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Hot water pouch small	carton	200.00	15.00	38.00	50.00	25.00	1.900.00	47.500.00	10.00	475.000.00	150.00
Hot water pouch Big, Kangaroo	carton	24.00	14.40	30.00	36.00	26.00	1.080.00	28.080.00	3.00	84.240.00	43.20
Rubber binder small	bundle	20.00	10.00	35.00	33.00	12.00	1.155.00	13.860.00	5.00	69.300.00	50.00
Rubber binder big	bundle	20.00	10.00	35.00	33.00	12.00	1.155.00	13.860.00	5.00	69.300.00	50.00
Thread Sailing ship, White	parcel	72.00	2.10	22.00	19.50	17.00	429.00	7.293.00	10.00	72.930.00	21.00
Thread Sailing ship, Mix	parcel	72.00	2.10	22.00	19.50	17.00	429.00	7.293.00	10.00	72.930.00	21.00
Thread Sailing ship, Black	parcel	72.00	2.10	22.00	19.50	17.00	429.00	7.293.00	10.00	72.930.00	21.00
Thread 10 baht set, Mix	bundle	120.00	3.00	20.00	26.00	23.00	520.00	11.960.00	5.00	59.800.00	15.00
Thread 10 baht set, White-Black	bundle	120.00	3.00	24.00	24.00	38.50	576.00	22.176.00	5.00	110.880.00	15.00
Thread Pink set	carton	360.00	25.00	57.00	73.00	41.00	4.161.00	170.601.00	2.00	341.202.00	50.00
Thread A Mix	parcel	1.440.00	5.00	14.00	14.00	60.00	196.00	11.760.00	3.00	35.280.00	15.00
Thread A White	parcel	1.440.00	5.00	14.00	14.00	60.00	196.00	11.760.00	3.00	35.280.00	15.00
Thread A White-Black	parcel	1.440.00	5.00	14.00	14.00	60.00	196.00	11.760.00	3.00	35.280.00	15.00
Thread A Dark gray	parcel	1.440.00	5.00	14.00	14.00	60.00	196.00	11.760.00	3.00	35.280.00	15.00
Thread A Black	parcel	1.440.00	5.00	14.00	14.00	60.00	196.00	11.760.00	3.00	35.280.00	15.00
Thread 1 baht, YNC White	bundle	1.440.00	5.60	23.00	26.00	52.50	598.00	31.395.00	2.00	62.790.00	11.20
Thread 1 baht, YNC Dark gray	bundle	1.440.00	5.60	23.00	26.00	52.50	598.00	31.395.00	2.00	62.790.00	11.20
Thread 1 baht, YNC Mix	bundle	1.440.00	5.60	21.00	26.00	52.50	598.00	31.395.00	2.00	62.790.00	11.20
Thread 1 baht, YNC Black	bundle	1.440.00	5.60	23.00	26.00	52.50	598.00	31.395.00	2.00	62.790.00	11.20
Thread 1 baht, YNC Yellow	bundle	1.440.00	5.60	23.00	26.00	52.50	598.00	31.395.00	2.00	62.790.00	11.20
Brooch tiny, White	bundle	10.00	1.30	13.00	16.50	22.00	214.50	4.719.00	20.00	94.380.00	26.00
Brooch tiny, Gold	bundle	10.00	1.30	13.00	16.50	22.00	214.50	4.719.00	10.00	47.190.00	13.00
Brooch Rose, 0	small box	1.00	0.30	8.50	14.00	4.00	119.00	476.00	100.00	47.600.00	30.00
Brooch Rose, 1	small box	1.00	0.40	9.00	15.00	4.50	135.00	607.50	100.00	60.750.00	40.00
Brooch Rose, 2	small box	1.00	0.50	9.50	17.50	5.00	166.25	831.25	100.00	83.125.00	50.00
Brooch Rose, 3	small box	1.00	0.40	9.00	15.00	4.00	135.00	540.00	100.00	54.000.00	40.00
Brooch Rose, 4	small box	1.00	0.70	10.00	19.00	5.00	190.00	950.00	100.00	95.000.00	70.00
Brooch Bee, 1	small box	1.00	0.40	10.00	13.00	4.00	130.00	520.00	100.00	52.000.00	40.00
Brooch Bee, 2	small box	1.00	0.60	11.00	13.00	6.00	143.00	858.00	100.00	85.800.00	60.00
Brooch Bee, 3	small box	1.00	0.50	10.00	13.00	5.00	130.00	650.00	100.00	65.000.00	50.00
Brooch in Pack	carton	1.600.00	20.00	36.60	28.50	36.00	1.043.10	37.551.60	3.00	112.654.80	60.00
Brooch grade A	bundle	720.00	2.60	18.00	31.00	40.00	558.00	22.320.00	5.00	111.600.00	13.00
Brooch: Lucky	bundle	30.00	3.80	13.50	19.00	49.00	256.50	12.568.50	5.00	62.842.50	19.00
Plastic spoon long	parcel	2.000.00	8.50	14.00	30.00	55.00	420.00	23.100.00	1.00	69.300.00	21.50
Plastic spoon short	parcel	2.000.00	6.50	14.00	32.00	40.00	448.00	17.920.00	5.00	89.600.00	32.50
Plastic fork short	parcel	2.000.00	8.50	14.00	30.00	55.00	420.00	23.100.00	3.00	69.300.00	21.50
Belaline spoon long	carton	144.00	1.40	14.50	20.00	11.00	290.00	3.190.00	20.00	63.800.00	28.00
Belaline spoon short	carton	144.00	1.50	17.00	17.00	13.00	289.00	3.757.00	20.00	75.140.00	30.00
Stainless spoon coffee	carton	288.00	4.40	14.00	20.00	14.00	280.00	1.920.00	10.00	39.200.00	44.00
Plastic spoon-fork	carton	12.00	4.20	20.00	32.00	14.00	640.00	8.960.00	20.00	179.200.00	84.00
Stainless spoon-fork#C	carton	576.00	23.60	24.50	40.00	28.50	980.00	27.930.00	10.00	279.300.00	236.00
Spoon Panda, short	carton	1.440.00	20.00	28.00	29.00	39.00	812.00	31.668.00	20.00	633.360.00	400.00
Spoon Elephant, short	carton	1.440.00	15.00	29.00	41.00	29.00	1.189.00	34.481.00	10.00	344.810.00	150.00
Stainless spoon: Jet	carton	1.440.00	20.00	28.50	34.00	28.00	969.00	27.132.00	10.00	271.320.00	200.00
Spoon short, Zebra	carton	1.440.00	32.00	28.50	43.50	29.00	1.239.75	35.952.75	10.00	359.527.50	320.00
Chopstick	pack	1.500.00	25.00	37.00	68.00	21.00	2.516.00	52.836.00	5.00	264.180.00	125.00
Wooden Chopstick	carton	2.000.00	20.00	25.00	48.00	28.00	1.200.00	33.600.00	5.00	168.000.00	100.00
Water canteen: 999, soldier	carton	12.00	2.00	32.00	38.00	26.00	1.216.00	31.616.00	10.00	316.160.00	29.00
Water canteen: 999-2 S, Perfect	carton	12.00	5.80	40.00	56.00	45.00	2.240.00	100.800.00	3.00	302.400.00	17.40
Water canteen: 022	carton	24.00	4.50	30.00	34.00	50.00	1.020.00	51.000.00	5.00	255.000.00	22.50
Water canteen No 111	carton	72.00	6.10	33.50	66.00	42.50	2.211.00	93.967.50	2.00	187.935.00	12.20

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Water canteen No 486D	carton	48.00	4.40	32.00	48.00	42.00	1,536.00	64,512.00	3.00	193,536.00	13.20
Water canteen No 469X	carton	72.00	6.00	32.00	47.00	57.50	1,504.00	86,480.00	2.00	172,960.00	12.00
Water canteen PB-395	carton	36.00	4.35	26.70	49.50	35.30	1,321.65	46,654.25	3.00	139,962.74	13.05
Water canteen PB-411	carton	36.00	4.30	24.10	45.90	40.70	1,106.19	45,021.93	3.00	135,065.80	12.90
Water canteen PB-426	carton	36.00	4.40	26.00	50.80	37.00	1,320.80	48,869.60	3.00	146,608.80	13.20
Water canteen PB-457	carton	36.00	4.00	25.70	50.80	35.00	1,305.56	45,694.60	3.00	137,083.80	12.00
Water canteen PB-487	carton	36.00	8.56	46.40	54.00	38.40	2,505.60	96,215.04	2.00	192,430.08	17.12
Water canteen PB-488	carton	36.00	4.40	25.50	49.80	35.00	1,269.90	44,446.50	3.00	133,339.50	13.20
Water canteen PB-493	carton	36.00	3.90	26.00	50.80	37.00	1,320.80	48,869.60	3.00	146,608.80	11.70
Water canteen PB-495	carton	36.00	3.90	26.00	49.80	35.30	1,294.80	45,706.44	3.00	137,119.32	11.70
Water canteen n-b	parcel	72.00	5.30	20.00	45.00	86.00	900.00	77,400.00	4.00	309,600.00	21.20
Ice canteen Perfect. No 999-M5	carton	12.00	10.00	44.00	67.00	51.00	2,948.00	150,348.00	3.00	451,044.00	30.00
Ice canteen Star S. No 592	carton	12.00	6.00	40.00	56.00	46.00	2,240.00	103,040.00	5.00	515,200.00	30.00
Water canteen Tommy	carton	72.00	9.10	38.00	56.00	41.00	2,128.00	87,248.00	2.00	174,496.00	18.20
Water canteen No 486X	carton	48.00	5.00	32.00	48.00	42.00	1,536.00	64,512.00	3.00	193,536.00	15.00
Water canteen: Leo	carton	72.00	9.50	39.00	52.00	51.00	2,028.00	103,428.00	2.00	206,856.00	19.00
Water canteen Ikkusang8. No.468D	carton	72.00	5.80	42.00	47.00	51.50	1,564.00	77,456.00	4.00	309,824.00	23.20
Water canteen Ice cream 618	carton	72.00	11.00	36.00	49.50	64.00	1,782.00	114,048.00	2.00	228,096.00	22.00
Water bottle 1x3	parcel	72.00	4.60	44.00	87.00	25.00	3,828.00	95,700.00	4.00	382,800.00	18.40
Water bottle 1x3: Square shape	parcel	36.00	2.50	40.00	50.00	50.00	2,000.00	100,000.00	8.00	800,000.00	20.00
Water bottle 1x4	parcel	48.00	2.60	45.00	57.00	25.00	2,565.00	64,125.00	8.00	513,000.00	20.80
Water bottle: pushed, small	parcel	72.00	3.80	53.00	53.00	28.00	2,809.00	78,652.00	2.00	157,304.00	7.60
Water bottle: Pumpkin 711	parcel	72.00	4.80	43.00	65.00	27.00	2,795.00	75,465.00	2.00	150,930.00	9.60
Water bottle: Pumpkin sport	parcel	72.00	5.80	45.00	58.00	28.00	2,610.00	73,080.00	2.00	146,160.00	11.60
Dipper with short handle	carton	300.00	25.00	33.00	43.00	34.00	1,419.00	48,246.00	1.00	48,246.00	25.00
Bowl 18cm. grade B. dark	sack	72.00	5.80	20.00	40.00	60.00	800.00	48,000.00	4.00	192,000.00	23.20
Bowl 20A	sack	72.00	5.80	20.00	40.00	60.00	800.00	48,000.00	9.00	432,000.00	52.20
Bowl 20cm. grade B. dark	sack	72.00	5.80	20.00	40.00	60.00	800.00	48,000.00	4.00	192,000.00	23.20
Bowl 20cm. grade A. dark	sack	72.00	4.80	18.00	36.00	56.00	648.00	36,288.00	8.00	290,304.00	38.40
Bowl 16cm. grade A. with handle	sack	72.00	6.80	16.00	32.00	60.00	512.00	30,720.00	4.00	122,880.00	27.20
Bowl 16cm. grade B. Mix	sack	72.00	6.80	16.00	32.00	60.00	512.00	30,720.00	5.00	153,600.00	34.00
Water sprayer 589	carton	24.00	2.30	24.00	38.00	37.00	912.00	33,744.00	10.00	337,440.00	23.00
Water sprayer 590	carton	24.00	1.80	26.00	38.00	27.00	988.00	26,676.00	10.00	266,760.00	18.00
Water sprayer 1008	carton	24.00	1.80	28.00	39.50	32.00	1,106.00	35,392.00	5.00	176,960.00	9.00
Water sprayer: 2 in 1	carton	12.00	2.00	40.00	40.00	24.00	1,500.00	38,400.00	6.00	230,400.00	12.00
Water sprayer Solo	carton	60.00	5.20	41.00	41.00	56.00	1,681.00	94,136.00	6.00	564,816.00	31.20
Water sprayer: bottle gourd. Star S. 607	carton	24.00	1.90	22.50	38.00	35.50	855.00	30,352.50	6.00	182,115.00	11.40
Water sprayer Taiwan. Transparency	carton	12.00	1.40	24.00	31.00	28.00	792.00	22,176.00	15.00	332,640.00	21.00
Water sprayer Canon. Yellow	carton	12.00	1.50	29.00	33.00	32.00	912.00	30,624.00	12.00	367,488.00	18.00
Water sprayer Lucky. Bell	carton	24.00	1.90	26.50	38.00	32.00	1,097.00	32,224.00	12.00	386,688.00	22.80
Water sprayer Bone shape. Murky	carton	180.00	12.00	60.00	92.00	30.00	5,520.00	165,600.00	5.00	828,000.00	60.00
Water sprayer Bone shape. transparency	carton	180.00	12.00	60.00	92.00	30.00	5,520.00	165,600.00	5.00	828,000.00	60.00
Water sprayer: foggy	carton	12.00	1.30	27.00	33.00	23.00	891.00	20,493.00	50.00	1,024,650.00	65.00
Water sprayer Smartwing	bundle	72.00	8.00	29.00	54.00	70.00	1,566.00	109,620.00	5.00	548,100.00	40.00
Saving box: Medium A	bundle	60.00	6.60	44.00	54.00	40.00	2,376.00	95,040.00	2.00	190,080.00	13.20
Saving box: Medium B	bundle	60.00	6.50	44.00	54.00	40.00	2,376.00	95,040.00	2.00	190,080.00	13.00
Saving box: Tiny A	bundle	120.00	5.90	32.00	59.00	26.00	1,888.00	49,088.00	3.00	147,264.00	17.70
Saving box: Medium A, Kid	bundle	60.00	5.40	33.00	53.00	41.00	1,749.00	71,709.00	2.00	143,418.00	10.80
Saving box: Giant, A	bundle	36.00	6.80	41.00	53.00	49.00	2,279.00	111,671.00	2.00	223,342.00	13.60
Saving box: Big cylinder A	bundle	36.00	6.20	22.00	88.00	20.00	1,936.00	38,720.00	1.00	38,720.00	6.20
Saving box: Fat A	bundle	60.00	4.00	34.00	32.00	40.00	1,088.00	43,520.00	4.00	174,080.00	16.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Saving box Star. S100-4	bundle	144.00	6.00	50.00	75.00	30.00	3,500.00	105,000.00	2.00	210,000.00	12.00
Saving box Star. S1005-4	bundle	144.00	6.00	40.00	75.00	30.00	3,000.00	90,000.00	2.00	180,000.00	12.00
Lunch box 584-2	parcel	144.00	3.50	45.00	60.00	25.00	2,700.00	67,500.00	4.00	270,000.00	15.60
Lunch box 921	parcel	48.00	7.00	27.00	44.00	50.00	1,188.00	59,400.00	2.00	118,800.00	14.00
Lunch box 922	parcel	36.00	3.50	25.00	57.00	65.00	1,250.00	81,250.00	4.00	325,000.00	14.00
Lunch box 923	parcel	48.00	5.50	22.00	56.00	60.00	1,232.00	73,920.00	3.00	221,760.00	16.50
Tissue box	bundle	60.00	4.00	48.00	57.00	3.00	2,736.00	95,760.00	4.00	383,040.00	19.60
Soap box 2 slots	parcel	72.00	4.50	35.00	47.00	25.00	1,175.00	29,375.00	10.00	293,750.00	43.00
Soap box 351P White	sack	144.00	4.50	45.00	72.00	53.00	3,240.00	171,720.00	2.00	343,440.00	9.00
Soap box 351P Transparent	sack	144.00	4.50	45.00	72.00	53.00	3,240.00	171,720.00	2.00	343,440.00	9.00
Soap box Kiak	bundle	60.00	3.00	22.00	22.00	44.00	484.00	21,296.00	6.00	127,776.00	18.00
Soap box Pearl	parcel	144.00	3.00	42.00	47.00	30.00	1,974.00	59,220.00	10.00	592,200.00	18.00
Soap box 771	parcel	144.00	4.00	20.00	44.00	55.00	880.00	48,400.00	5.00	242,000.00	20.50
Soap box Shinjung	parcel	72.00	3.70	26.00	34.00	50.00	864.00	44,200.00	6.00	265,200.00	22.20
Soap box White stripes	sack	144.00	4.00	20.00	45.00	60.00	900.00	54,000.00	5.00	270,000.00	20.00
Soap box Transparent stripes	sack	144.00	4.00	20.00	45.00	60.00	900.00	54,000.00	5.00	270,000.00	20.00
Basket CS 433 grade A	bundle	36.00	5.80	31.00	67.00	26.00	1,869.00	48,360.00	6.00	290,160.00	34.80
Basket CS 014	parcel	48.00	5.80	16.00	75.00	25.00	2,878.00	70,200.00	3.00	210,600.00	17.40
Basket Spoon, one slot	parcel	144.00	5.00	28.00	58.00	17.00	1,624.00	27,608.00	2.00	55,216.00	10.00
Basket 436 Shopsticks	parcel	144.00	8.00	30.00	75.00	27.00	2,250.00	60,750.00	1.00	60,750.00	8.50
High Cup 355 with Cover	carton	144.00	6.50	36.00	52.00	44.50	1,872.00	83,304.00	2.00	166,608.00	13.60
Cup 475	parcel	144.00	3.00	24.00	36.00	50.00	648.00	43,200.00	5.00	216,000.00	28.00
Cup 733 with Handle	parcel	144.00	3.40	21.00	45.00	43.00	645.00	40,635.00	10.00	406,350.00	34.00
Cup P S 12 ounces	carton	1,000.00	9.00	37.00	44.00	43.00	1,628.00	70,004.00	10.00	700,040.00	90.00
Cup P S 10 ounces	carton	1,000.00	8.80	36.50	44.00	42.00	1,626.00	67,452.00	10.00	674,520.00	68.00
Cup P S 70 ounces	carton	2,000.00	9.50	40.00	65.00	40.00	2,820.00	109,800.00	10.00	1,098,000.00	95.00
Cup Arale	parcel	72.00	4.20	46.00	50.00	28.00	2,396.00	64,400.00	5.00	322,000.00	21.00
Cup Kitty style 2013	parcel	48.00	2.00	21.00	30.00	46.00	630.00	28,980.00	8.00	231,840.00	16.00
Cup Frog style 2012	parcel	48.00	2.00	21.00	30.00	46.00	630.00	28,980.00	8.00	231,840.00	16.00
Cup Wine	carton	144.00	6.50	31.00	52.00	52.00	1,612.00	83,824.00	2.00	167,648.00	13.00
Cup Freshy	carton	144.00	6.00	19.00	26.00	42.00	498.00	20,748.00	20.00	414,960.00	46.00
Cup Marble 004	parcel	144.00	5.00	40.00	50.00	28.00	2,960.00	56,000.00	10.00	560,000.00	50.00
Cup A3 with Handle	parcel	144.00	9.00	50.00	50.00	38.00	2,500.00	95,000.00	10.00	950,000.00	90.00
Cup 204 with Handle	carton	72.00	2.00	27.50	32.00	50.50	880.00	44,440.00	4.00	177,760.00	11.60
Cup 205 with Handle	carton	72.00	3.10	30.50	49.00	27.50	1,294.50	41,098.75	4.00	164,395.00	12.40
Cup 45 Mitsu with Handle	parcel	72.00	1.80	28.00	52.00	20.00	1,456.00	29,120.00	20.00	582,400.00	36.00
Cup 639 Sakura, stripe with Cover	carton	72.00	2.50	28.00	50.00	50.00	1,400.00	70,000.00	6.00	420,000.00	27.00
Cup 404 with Handle	parcel	144.00	5.20	30.00	45.00	56.00	1,550.00	75,600.00	7.00	525,200.00	36.40
Cup 002 with Handle	parcel	288.00	6.00	32.00	46.00	65.00	1,472.00	95,680.00	10.00	956,800.00	60.00
Cup 004 with Handle, Cartoon pattern	parcel	144.00	5.70	40.00	45.00	30.00	1,800.00	54,000.00	10.00	540,000.00	57.00
Cup 514 White pattern	parcel	144.00	6.20	49.00	50.00	31.00	2,450.00	75,950.00	2.00	151,900.00	12.40
Cup 514 Transparent pattern	parcel	144.00	6.20	49.00	50.00	31.00	2,450.00	75,950.00	3.00	227,850.00	18.60
Cup 688 Sakura, small	parcel	144.00	5.70	40.00	40.00	37.00	1,660.00	59,200.00	3.00	177,600.00	17.10
Cup Transparent, pineapple pattern	carton	96.00	6.40	34.00	48.00	43.00	1,632.00	70,176.00	5.00	350,880.00	32.00
Plastic bucket Black 16	bundle	12.00	6.00	32.00	32.00	52.00	1,024.00	53,248.00	4.00	212,992.00	24.00
Plastic bucket Black 18	bundle	12.00	8.00	33.00	33.00	60.00	1,089.00	65,340.00	6.00	392,040.00	48.00
Plastic bucket 3.5	bundle	12.00	4.80	36.00	36.00	51.00	1,296.00	66,096.00	6.00	396,576.00	28.80
Plastic bucket Yellow 2.5	bundle	12.00	3.50	27.00	27.00	52.00	729.00	37,908.00	10.00	379,080.00	35.00
Plastic bucket Yellow 3.5	bundle	12.00	4.20	29.00	29.00	53.00	841.00	44,573.00	6.00	267,438.00	25.20
Plastic bucket Yellow 4.5	bundle	12.00	6.00	31.00	31.00	62.00	961.00	59,582.00	5.00	297,910.00	30.00
Fabric cleaning Brush:Nylon, flat iron, china	carton	144.00	11.00	30.00	50.00	39.00	1,500.00	58,500.00	5.00	292,500.00	55.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Brush: Nylon, Color	bundle	101.00	4.60	25.00	55.00	33.00	1,375.00	45,375.00	5.00	226,875.00	23.00
Brush: Nylon, Hama	carton	12.00	3.20	25.00	33.00	17.00	825.00	14,025.00	10.00	140,250.00	32.00
Fabric cleaning Brush: Eastman 2 colors	carton	120.00	15.00	25.00	38.00	52.00	950.00	49,400.00	50.00	2,470,000.00	75.00
Fabric cleaning Brush: Nylon, flat iron	carton	24.00	4.00	29.00	40.00	16.50	1,160.00	19,140.00	50.00	957,000.00	217.00
Fabric cleaning Brush: Eastman, Bone	carton	144.00	14.40	34.00	48.00	35.00	1,632.00	57,120.00	20.00	1,142,400.00	258.00
Fabric cleaning Brush: Rainbow, Samor	carton	240.00	22.00	33.00	47.00	52.00	1,551.00	80,652.00	20.00	1,613,040.00	44.00
Brush: Rose, Milk color	bundle/box	60.00	8.00	17.00	25.00	58.00	425.00	24,650.00	10.00	246,500.00	5.00
Brush: Rose, Transparent color	bundle/box	60.00	4.40	12.00	23.50	43.00	282.00	12,126.00	10.00	121,260.00	4.00
Fabric cleaning Brush:003	carton	72.00	5.30	36.00	36.00	19.00	1,293.00	24,624.00	30.00	738,720.00	25.00
Fabric cleaning Brush:707	carton	144.00	5.20	31.00	33.00	26.00	1,023.00	26,598.00	6.00	158,588.00	3.20
Fabric cleaning Brush:JCJ	carton	72.00	4.00	19.00	33.00	30.00	627.00	18,810.00	20.00	378,200.00	8.00
Fabric cleaning Brush:031	carton	72.00	4.80	17.10	39.60	33.00	677.16	22,346.28	20.00	446,925.60	34.00
Fabric cleaning Brush: Nylon 888	bundle	60.00	5.50	15.50	23.50	50.00	364.25	18,212.50	10.00	182,125.00	33.00
Fabric cleaning Brush: flat iron shape, brass	carton	24.00	5.00	29.00	38.00	16.00	1,102.00	17,632.00	50.00	881,600.00	25.00
Fabric cleaning Brush: Samor, White fiber	carton	144.00	17.00	34.00	37.00	49.00	1,258.00	61,642.00	20.00	1,232,840.00	34.00
Brush: Black meal of coconut	bundle	160.00	4.10	25.00	56.00	40.00	1,400.00	56,000.00	5.00	280,000.00	2.50
Brush: Brown meal of coconut	bundle	160.00	4.10	25.00	56.00	40.00	1,400.00	56,000.00	6.00	336,000.00	24.00
Brush: Rose, Brass	carton	12.00	4.50	25.00	25.00	20.00	625.00	12,500.00	10.00	125,000.00	45.00
Wooden Brush: Rose, Clorful fiber	bundle	60.00	6.00	16.00	23.00	51.00	368.00	18,768.00	20.00	375,360.00	23.00
Pan cleaning brush: meal of coconut 2014	carton	60.00	3.80	32.00	44.50	19.00	1,424.00	27,056.00	10.00	271,560.00	35.00
Brush: Brass 5 rows	bundle/box	60.00	4.90	12.50	25.00	30.00	312.50	9,375.00	2.00	18,750.00	4.80
Brush: Brass 6 rows	bundle/box	60.00	5.20	13.00	25.00	30.00	325.00	9,750.00	2.00	19,500.00	11.40
Brush: Brass 7 rows	bundle/box	60.00	5.70	13.00	25.00	30.00	325.00	9,750.00	2.00	19,500.00	11.40
Brush: Brass,3 Roses	bundle/box	30.00	6.50	16.00	23.00	54.00	368.00	19,872.00	10.00	198,720.00	35.00
Brush: Brass, Tiger	bundle/box	48.00	2.60	22.00	22.00	69.00	484.00	33,396.00	12.00	400,752.00	31.20
Brush: Brass, Coin	bundle/box	48.00	2.60	22.00	22.00	69.00	484.00	33,396.00	12.00	400,752.00	31.20
Floor cleaning brush: Nylon, Rose	carton	12.00	4.40	24.00	40.00	14.00	960.00	13,440.00	10.00	134,400.00	4.00
Brush: Brass, Hama	carton	12.00	3.90	25.00	33.00	17.00	825.00	14,025.00	10.00	140,250.00	34.00
Bath room cleaning brush: Sack	bundle	60.00	5.00	60.00	60.00	15.00	3,600.00	54,000.00	4.00	216,000.00	20.00
Bath room cleaning brush: Hama	carton	120.00	9.00	35.00	66.00	41.00	2,310.00	94,710.00	10.00	947,100.00	46.00
Bath room cleaning brush: Fish	carton	120.00	10.00	45.00	55.00	43.00	2,475.00	106,425.00	5.00	519,125.00	61.00
Bath room cleaning brush	carton	12.00	1.80	33.00	49.00	19.00	1,617.00	30,723.00	50.00	1,536,150.00	91.00
Shoc brush: Herping	carton	300.00	20.00	23.50	64.00	44.00	1,504.00	66,176.00	10.00	661,760.00	240.00
Bottle cleaning brush: B1 with sponge	bundle	60.00	3.10	20.00	74.00	15.00	1,480.00	22,200.00	2.00	44,400.00	6.20
Bottle cleaning brush: Rabbit	bundle	60.00	3.00	20.00	74.00	15.00	1,480.00	22,200.00	2.00	44,400.00	6.00
Bottle cleaning brush: Twin head	bundle	60.00	3.10	20.00	78.00	34.00	1,560.00	53,040.00	2.00	106,080.00	6.20
Broom: water broomy	carton	12.00	4.00	33.00	96.00	18.00	3,168.00	57,024.00	30.00	1,710,720.00	20.00
Broom: water Samor	carton	24.00	12.00	26.00	125.00	17.00	3,250.00	55,250.00	10.00	552,500.00	120.00
trash dipper: grade A	bundle	72.00	6.80	20.00	48.00	33.00	960.00	31,680.00	4.00	126,720.00	27.20
trash dipper: small size 345	carton	36.00	5.20	32.00	50.00	23.00	1,600.00	36,800.00	5.00	184,000.00	26.00
trash dipper with handle slot: grade A	carton	12.00	3.70	42.00	67.00	13.00	2,814.00	36,582.00	10.00	365,820.00	37.00
Fabric Hanger: Big flowers	carton	48.00	4.50	56.00	55.00	43.00	3,080.00	132,440.00	3.00	397,320.00	13.50
Fabric Hanger: Green flowers	carton	72.00	4.70	29.00	63.00	43.00	1,827.00	78,561.00	5.00	392,805.00	23.50
Fabric Hanger: Daily	carton	48.00	3.30	52.00	57.00	56.00	2,964.00	165,984.00	3.00	497,952.00	9.90
Fabric Hanger: Big Bee	carton	48.00	7.00	49.00	57.00	44.00	2,793.00	122,892.00	3.00	368,676.00	21.00
Shoes hanger	carton	60.00	7.00	36.00	50.00	37.00	1,800.00	66,600.00	5.00	333,000.00	35.00
Clothes hanger: Umbrella	carton	24.00	2.80	25.00	44.00	23.00	1,100.00	25,300.00	10.00	253,000.00	28.00
Clothes hanger: 222 ( wire)	carton	144.00	9.00	22.00	67.00	47.00	1,474.00	69,278.00	5.00	346,390.00	45.00
Clothes hanger: 222 .plastic	carton	144.00	5.40	34.00	34.00	41.00	1,156.00	47,396.00	10.00	473,960.00	54.00
Clothes hanger: 3 rings	carton	144.00	8.00	44.00	46.00	22.00	2,024.00	44,528.00	20.00	890,560.00	160.00
Clothes hanger: 5 rings	carton	144.00	4.90	41.00	44.00	21.00	1,804.00	37,884.00	20.00	757,680.00	98.00



Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Clothes hanger No.799	carton	144.00	10.00	34.00	34.00	66.00	1,156.00	76,296.00	5.00	381,480.00	50.00
Clothes hanger PF221	carton	144.00	1.20	25.00	25.00	40.00	625.00	25,000.00	20.00	500,000.00	64.00
Clothes hanger Round Shape	carton	12.00	3.20	40.00	56.00	37.00	2,240.00	82,880.00	5.00	414,400.00	36.00
Clothes hanger C1	carton	144.00	3.00	26.50	26.50	37.00	702.25	25,983.25	20.00	519,665.00	62.00
Clothes hanger 5 holes	carton	120.00	5.00	39.50	53.00	26.00	2,093.50	54,431.00	5.00	272,155.00	25.00
Clothes hanger 599, Black	carton	144.00	9.00	36.00	38.00	60.00	1,368.00	82,080.00	6.00	492,480.00	54.00
Clothes hanger red heart-shaped, 55	carton	144.00	1.60	25.50	41.50	21.00	1,058.25	22,223.25	20.00	444,465.00	72.00
Clothes hanger red heart-shaped, 99	carton	72.00	4.60	40.00	55.00	44.00	2,200.00	96,800.00	10.00	968,000.00	45.00
Clothes hanger Square, Twin	carton	12.00	1.70	40.00	55.00	38.00	2,200.00	83,600.00	5.00	418,040.00	35.50
Clothes hanger Square Mini	carton	48.00	3.00	40.00	51.00	25.00	2,040.00	51,000.00	5.00	255,000.00	35.00
Clothes hanger Aluminium, 639	carton	72.00	4.70	43.00	42.00	29.00	1,806.00	52,374.00	5.00	261,870.00	23.50
Clothes hanger Aluminium, 646	carton	144.00	5.80	43.00	42.00	29.00	1,806.00	52,374.00	6.00	314,244.00	34.80
Fabric pincher 16 pieces, Ploy	carton	36.00	4.00	28.00	31.00	23.00	868.00	19,964.00	10.00	199,640.00	40.00
Fabric pincher 18 pieces, CS	carton	36.00	2.40	24.00	36.00	17.00	864.00	14,688.00	10.00	146,880.00	24.00
Fabric pincher 18pieces, turbine	carton	36.00	2.60	24.00	36.00	17.00	864.00	14,688.00	10.00	146,880.00	26.00
Fabric pincher 24 pieces, Put	carton	36.00	3.50	33.00	34.00	19.00	1,122.00	21,318.00	20.00	426,360.00	70.00
Fabric pincher 30 pieces, CS	carton	36.00	3.90	35.00	40.00	16.00	1,400.00	22,400.00	20.00	448,000.00	78.00
Fabric pincher 30 pieces, Put	carton	36.00	4.10	35.00	40.00	16.00	1,400.00	22,400.00	20.00	448,000.00	82.00
Fabric pincher 18 pieces, round shape, Flower	carton	36.00	2.90	32.00	33.00	32.00	1,056.00	33,792.00	24.00	811,908.00	65.60
Fabric pincher 18 pieces, round shape, Merry	carton	48.00	4.40	22.00	33.00	27.00	726.00	19,602.00	10.00	196,920.00	22.00
Fabric pincher Japanese	carton	36.00	2.50	18.00	28.00	25.00	504.00	12,600.00	20.00	252,000.00	52.00
Fabric pincher Wooden	carton	2,880.00	13.00	28.00	45.00	30.00	1,260.00	37,800.00	10.00	378,000.00	120.00
Fabric pincher Big size	carton	36.00	3.00	24.00	29.00	26.00	696.00	18,096.00	10.00	180,960.00	30.00
Shower cap cartoon pattern, small	bundle	360.00	6.80	30.00	35.00	30.00	1,050.00	31,500.00	4.00	126,000.00	25.20
Shower cap cartoon pattern, big	bundle	360.00	8.00	30.00	40.00	30.00	1,200.00	36,000.00	4.00	144,000.00	32.00
Shower cap finesse, small	bundle	360.00	5.50	25.00	45.00	25.00	1,125.00	28,125.00	4.00	112,500.00	22.00
Shower cap finesse, big	bundle	360.00	9.00	26.00	65.00	18.00	1,690.00	30,420.00	4.00	121,680.00	36.00
Shower cap small	bundle	360.00	6.00	25.00	50.00	25.00	1,250.00	31,250.00	4.00	125,000.00	24.00
Shower cap big	bundle	360.00	10.00	25.00	50.00	25.00	1,250.00	31,250.00	4.00	125,000.00	40.00
Toothpaste squeezer murky	parcel	120.00	5.50	23.00	50.00	18.00	1,150.00	20,700.00	5.00	103,500.00	27.50
Toothpaste squeezer transparency	parcel	120.00	5.50	23.00	50.00	18.00	1,150.00	20,700.00	3.00	62,100.00	16.50
Comb grade A No 801	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	5.00	110,446.88	34.00
Comb grade A No 802	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	5.00	110,446.88	34.00
Comb grade A No 803	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	5.00	110,446.88	34.00
Comb grade A No 804	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	5.00	110,446.88	34.00
Comb grade A No 805	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	5.00	110,446.88	34.00
Comb grade A No 811A	bundle	720.00	5.40	15.00	25.00	53.00	375.00	19,875.00	4.00	75,500.00	21.60
Comb Hair clipper, plastic	bundle	120.00	2.40	10.00	15.00	36.00	150.00	5,400.00	30.00	162,000.00	72.00
Comb Hair clipper, stainless	bundle	120.00	3.00	10.00	15.00	36.00	150.00	5,400.00	10.00	54,000.00	30.00
Cone No1	bundle	144.00	8.50	47.00	65.00	28.00	3,055.00	85,540.00	5.00	427,700.00	42.50
Cone No2	bundle	144.00	4.50	37.00	59.00	26.00	2,183.00	56,758.00	5.00	283,790.00	22.50
Cone No3	bundle	144.00	3.50	30.00	50.00	20.00	1,500.00	30,000.00	5.00	150,000.00	17.50
Cone No4	bundle	144.00	2.00	46.00	125.00	16.00	5,750.00	92,000.00	5.00	460,000.00	16.00
Cone No5	bundle	144.00	3.00	36.00	120.00	14.00	4,320.00	60,480.00	5.00	302,400.00	15.00
Sauce bottle: Orange	parcel	144.00	4.50	25.00	60.00	70.00	1,500.00	105,000.00	2.00	210,000.00	9.00
Sauce bottle: Transparency	parcel	144.00	4.50	25.00	60.00	70.00	1,500.00	105,000.00	3.00	315,000.00	13.50
Milk bottle Kid, Chinese	carton	120.00	7.50	34.50	41.00	62.00	1,414.50	87,690.00	5.00	438,495.00	37.50
Water bottle 558	carton	72.00	7.50	42.00	48.00	49.00	2,016.00	98,784.00	2.00	197,568.00	15.00
Photo Album Medium size	bundle	12.00	3.80	8.00	24.00	37.00	192.00	7,104.00	5.00	35,520.00	19.00
Photo Album Jumbo size	bundle	12.00	2.10	14.00	19.00	31.00	266.00	8,246.00	5.00	41,230.00	10.50
Photo Album Small size	bundle	12.00	1.60	12.00	15.00	29.00	180.00	5,220.00	10.00	52,200.00	16.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Photo Album Big size	bundle	12.00	4.20	16.50	30.00	35.00	495.00	17,125.00	5.00	86,625.00	21.00
Back scratching stick	carton	144.00	5.30	21.00	44.00	20.00	924.00	18,480.00	10.00	184,800.00	53.00
Back cleaning brush: Twin	carton	24.00	4.40	24.00	39.00	34.00	936.00	31,824.00	10.00	318,240.00	44.00
Topknot of Pot's cover: Medium	carton	600.00	25.00	35.00	65.00	45.00	2,275.00	102,375.00	1.00	102,375.00	25.00
Topknot of Pot's cover: Size	carton	720.00	25.00	32.00	45.00	50.00	1,440.00	72,000.00	1.00	72,000.00	25.00
Topknot of Pot's cover: Big	carton	600.00	25.00	35.00	65.00	45.00	2,275.00	102,375.00	1.00	102,375.00	25.00
Icc tray pumpkin	bundle	72.00	15.00	42.00	85.00	27.00	3,570.00	96,390.00	4.00	385,560.00	60.00
Plastic bag with lock	bundle	24.00	2.40	28.00	41.00	29.00	1,148.00	33,292.00	5.00	166,460.00	12.00
Cigarette and lighter container: gastank, blue	carton	60.00	4.80	38.00	46.00	30.00	1,748.00	52,440.00	2.00	104,880.00	9.60
Cigarette and lighter container: gastank, orange	carton	60.00	4.80	38.00	46.00	30.00	1,748.00	52,440.00	2.00	104,880.00	9.60
Water pouter: Medium	bundle	12.00	4.00	40.00	55.00	46.00	2,200.00	101,200.00	5.00	506,000.00	20.00
Water pouter: Small	bundle	12.00	3.50	26.00	48.00	42.00	1,248.00	52,416.00	5.00	262,080.00	17.50
Water pouter: Big	bundle	6.00	3.50	43.00	82.00	35.00	3,690.00	129,150.00	12.00	1,549,800.00	42.00
Water filter: 5 level	carton	120.00	8.50	40.00	52.00	26.50	2,080.00	55,120.00	3.00	165,360.00	25.50
Water filter: Turbine	carton	120.00	5.50	40.00	52.00	26.50	2,080.00	55,120.00	10.00	551,200.00	55.00
Chair: CS grade B	bundle	48.00	16.00	40.00	70.00	28.00	2,800.00	78,400.00	3.00	235,200.00	48.00
Chair: M, Big	bundle	48.00	22.00	60.00	103.00	27.00	6,180.00	166,860.00	3.00	595,580.00	66.00
Fabric Gloves: hot protector	carton	600.00	14.00	50.00	75.00	50.00	3,750.00	187,500.00	4.00	750,000.00	56.00
Fabric Gloves: Special weaver, rabbit	parcel	120.00	3.40	19.00	43.00	18.00	817.00	14,706.00	10.00	147,060.00	34.00
Fabric Gloves: Red rim	parcel	120.00	3.90	25.00	50.00	16.00	1,250.00	20,000.00	50.00	1,000,000.00	195.00
Fabric Gloves: white color, yellow rim	parcel	120.00	6.20	36.00	50.00	19.00	1,800.00	34,200.00	20.00	684,000.00	124.00
Fabric Gloves: eye, white, 125	bundle	60.00	2.00	22.00	26.00	28.00	572.00	16,016.00	10.00	160,160.00	20.00
Fabric Gloves: eye, size 10-12	bundle	60.00	1.60	18.00	25.00	25.00	450.00	11,250.00	10.00	112,500.00	16.00
Fabric Gloves: eye, size 132	bundle	60.00	2.40	22.00	27.00	29.00	594.00	17,226.00	10.00	172,260.00	24.00
Fabric Gloves: eye, size 5-7	bundle	60.00	1.20	16.00	23.00	24.00	368.00	8,832.00	10.00	88,320.00	12.00
Fabric Gloves: eye, size 7-9	bundle	60.00	1.50	16.00	23.00	24.00	368.00	8,832.00	10.00	88,320.00	15.00
Fabric Gloves: Sun	parcel	120.00	5.20	23.00	44.00	19.00	1,012.00	19,228.00	20.00	384,560.00	104.00
Fabric Gloves: Sun, nylon	parcel	120.00	5.20	27.00	52.00	20.00	1,404.00	28,080.00	20.00	561,600.00	104.00
Fabric Gloves: peacock, long, nylon	parcel	60.00	4.00	30.00	55.00	15.00	1,650.00	24,750.00	20.00	495,000.00	80.00
Fabric Gloves: peacock, white, nylon	parcel	120.00	5.40	24.00	52.00	20.00	1,248.00	24,960.00	20.00	499,200.00	108.00
Fabric Gloves: eagle, colorful, nylon	parcel	120.00	4.80	25.00	52.00	20.00	1,300.00	26,000.00	40.00	1,040,000.00	192.00
Fabric Gloves: golden fish, colorful, nylon	parcel	120.00	4.50	20.00	51.00	22.00	1,660.00	23,320.00	10.00	233,200.00	45.00
Fabric Gloves: Sun, sailclothes	bundle	60.00	1.90	21.00	26.00	28.00	546.00	15,288.00	10.00	152,880.00	19.00
Fabric Gloves: peacock, sailclothes	parcel	120.00	4.00	24.00	49.00	19.00	1,176.00	22,344.00	20.00	446,880.00	80.00
Clothes for floor cleaning( Mob)	sack	72.00	36.00	50.00	80.00	25.00	4,000.00	100,000.00	5.00	500,000.00	180.00
Pollution filter clothes: blue	bundle	600.00	4.50	29.00	42.00	22.00	1,218.00	26,796.00	20.00	535,920.00	90.00
Rug: round shape	parcel	50.00	20.00	40.00	90.00	30.00	3,600.00	108,000.00	4.00	432,000.00	80.00
Rug: egg shape	parcel	50.00	20.00	40.00	90.00	30.00	3,600.00	108,000.00	4.00	432,000.00	80.00
Rug: small	carton	100.00	25.00	47.00	60.00	40.00	2,820.00	112,800.00	5.00	564,000.00	125.00
Rug: heart shape	parcel	50.00	20.00	40.00	90.00	30.00	3,600.00	108,000.00	4.00	432,000.00	80.00
Rug: square shape	parcel	50.00	20.00	35.00	42.00	60.00	1,470.00	88,200.00	4.00	352,800.00	80.00
Rug: weaved	parcel	50.00	25.00	45.00	80.00	32.00	3,600.00	115,200.00	6.00	691,200.00	150.00
Full head Hat: A3	parcel	120.00	10.00	30.00	45.00	65.00	1,350.00	87,750.00	10.00	877,500.00	100.00
Full head Hat: Ioinclothes with cap	bundle	60.00	4.20	33.00	39.00	17.00	1,287.00	21,879.00	4.00	87,516.00	16.80
Full head Hat: Ioinclothes	bundle	60.00	2.70	33.00	39.00	10.00	1,287.00	12,870.00	6.00	77,220.00	16.20
Socks: short, Mix color	parcel	120.00	2.80	26.00	40.00	18.00	1,040.00	18,720.00	10.00	187,200.00	28.00
Socks: business, Mix color	parcel	120.00	3.50	26.00	40.00	20.00	1,040.00	20,800.00	15.00	312,000.00	52.50
Dog chain: 20x6	carton	192.00	20.00	38.00	38.00	20.00	1,444.00	28,880.00	3.00	86,640.00	60.00
Dog chain: 22x6	carton	192.00	20.00	40.00	40.00	19.00	1,600.00	30,400.00	3.00	91,200.00	60.00
Dog chain: 25x6	carton	144.00	19.00	40.00	40.00	24.00	1,600.00	38,400.00	3.00	115,200.00	57.00
Dog chain: 30x6	carton	96.00	18.00	39.00	39.00	14.00	1,521.00	21,294.00	3.00	63,882.00	54.00

Table B.1: The receiving analysis chart (RAC) (Cont.)

English Name	Receiving: Unit Load			Size of Receiving Unit type					Avg. receiving quantity	Total required cubic space at buffer area	Total weight At receiving
	Type	Capacity	Weight	Wide (cm)	Length (cm)	Height (cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Dog chain: 35x6	carton	96.00	18.00	40.00	40.00	20.00	1,600.00	32,000.00	3.00	96,000.00	54.00
Dog chain: 45x6	carton	48.00	19.00	39.00	40.00	16.00	1,560.00	24,960.00	3.00	74,880.00	57.00
Pingpong ball: white	carton	480.00	48.00	53.00	87.00	51.00	4,611.00	235,161.00	1.00	235,161.00	48.00
Pingpong ball: orange	carton	480.00	48.00	53.00	87.00	51.00	4,611.00	235,161.00	2.00	470,322.00	96.00
Badminton: ball	carton	600.00	6.50	15.00	66.00	41.00	2,310.00	94,710.00	4.00	378,840.00	26.00
paper card: gold seam 007	carton	144.00	25.00	32.00	37.00	27.00	1,184.00	31,968.00	10.00	319,680.00	250.00
paper card: Thai	carton	240.00	12.00	35.00	44.00	19.00	1,540.00	29,260.00	20.00	585,200.00	240.00
plastic card: Winner 222	carton	144.00	25.00	32.00	38.00	26.50	1,216.00	32,224.00	5.00	161,120.00	125.00
paper card: Winner	carton	144.00	8.00	28.00	34.00	26.00	952.00	24,752.00	2.00	49,504.00	16.00
Elastic fabric: 10	bundle	120.00	10.00	29.00	19.00	40.00	551.00	22,640.00	2.00	45,280.00	20.00
Elastic fabric: 11	bundle	120.00	12.00	34.00	19.00	40.00	646.00	25,840.00	2.00	51,680.00	24.00
Elastic fabric: 14	bundle	120.00	14.00	38.00	19.00	40.00	722.00	28,880.00	2.00	57,760.00	28.00
Elastic fabric: 16	bundle	60.00	16.00	40.00	19.00	40.00	760.00	30,400.00	2.00	60,800.00	32.00
Elastic fabric: 4	bundle	120.00	4.90	16.00	19.00	38.00	364.00	11,552.00	2.00	23,104.00	9.80
Elastic fabric: 6	bundle	120.00	6.80	18.00	19.00	39.00	342.00	13,338.00	2.00	26,676.00	13.60
Elastic fabric: 8	bundle	120.00	8.00	22.00	19.00	38.00	418.00	15,884.00	2.00	31,768.00	16.00
Elastic fabric: 1 inch wide	parcel	16.00	10.00	11.00	11.00	42.00	121.00	5,082.00	5.00	25,410.00	50.00
Elastic fabric: 3/4 inch wide	parcel	20.00	8.50	11.00	11.00	42.00	121.00	5,082.00	5.00	25,410.00	42.50
Curtain hooker: Color 1	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	2.00	48,097.50	18.00
Curtain hooker: Color 2	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	2.00	48,097.50	18.00
Curtain hooker: Color 3	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	2.00	48,097.50	18.00
Curtain hooker: Color 4	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	2.00	48,097.50	18.00
Curtain hooker: Color 5	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	2.00	48,097.50	18.00
Ring: Medium size	parcel	7,200.00	10.00	21.00	30.00	25.00	630.00	15,750.00	3.00	47,250.00	30.00
Ring: 500 pieces: chain	carton	5,000.00	13.00	26.00	34.00	25.00	884.00	22,100.00	5.00	110,500.00	65.00
Ring: Small size	parcel	7,200.00	7.50	20.00	32.00	20.00	640.00	12,800.00	2.00	25,600.00	15.00
Ring: Big size	parcel	3,600.00	15.00	20.00	32.00	20.00	640.00	12,800.00	10.00	128,000.00	150.00
Mosquitoes wiping stick container	parcel	60.00	12.00	41.50	65.00	25.00	2,697.50	67,437.50	20.00	1,348,750.00	240.00
Mosquitoes wiping stick container: long	bundle	120.00	6.50	29.00	43.00	31.00	1,247.00	18,657.00	3.00	115,971.00	19.50
Buddism Ordaining set: Red	parcel	72.00	2.80	40.00	19.00	49.00	760.00	37,240.00	10.00	372,400.00	28.00
Buddism Ordaining set: Yellow	parcel	72.00	2.80	40.00	19.00	49.00	760.00	37,240.00	10.00	372,400.00	28.00
Artificial clay: small size	carton	864.00	8.00	33.00	42.00	13.00	1,386.00	18,018.00	10.00	180,180.00	80.00
Artificial clay: big size	carton	144.00	18.00	25.00	32.00	17.00	800.00	13,600.00	10.00	136,000.00	180.00
Pot mender	bundle	20.00	2.00	36.00	39.00	3.00	1,464.00	4,212.00	5.00	21,060.00	14.50
Magnifying glass	carton	480.00	20.00	35.50	57.00	36.50	2,021.50	71,857.75	2.00	143,715.50	40.00
Whetstone	carton	60.00	31.00	29.00	41.00	17.00	1,247.00	21,199.00	10.00	211,990.00	310.00
Tape Cleanser set	carton	40.00	4.00	32.00	54.00	15.00	1,728.00	25,920.00	3.00	77,760.00	12.00
CD Cleanser set	carton	50.00	9.00	37.00	37.00	26.00	1,369.00	35,594.00	3.00	106,782.00	27.00
Perfume gel: G&G	carton	144.00	12.00	27.00	42.00	21.00	1,600.00	38,400.00	3.00	115,200.00	57.00
Steel pot stand	carton	120.00	10.00	39.50	44.00	25.00	1,738.00	43,450.00	5.00	217,250.00	50.00

Note:

Average receiving quantity = Average quantity order in Table A.1

Total required cubic space at buffer area = Avg. receiving quantity x Cubic space of unit type (cm<sup>3</sup>)

Table B.2: The shipping analysis chart (SAC)

English Name	Shipping unit type			Size of Shipping unit (type)					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
pincer diamond	carton ( small )	6.00	3.50	8.00	17.00	3.50	136.00	476.00	5.00	2380.00	5.00
pincer with cutting head diamond	carton ( small )	6.00	0.80	9.00	17.00	3.50	153.00	535.50	6.00	3213.00	6.00
pincer with sharp head diamond	carton ( small )	6.00	3.50	8.00	17.00	3.50	136.00	476.00	5.00	2380.00	5.00
Screw driver 2 pieces in set	carton	360.00	24.00	28.00	28.00	40.00	784.00	31.360.00	1.00	31360.00	1.00
Screw driver 4 pieces in set	carton ( small )	12.00	1.20	8.50	17.50	12.00	148.75	1.785.00	5.00	8925.00	5.00
Screw driver for watch	carton	120.00	16.00	31.00	45.00	26.50	1.395.00	36.967.50	1.00	36967.50	1.00
Screw driver with 3 inches punch head	carton ( small )	12.00	0.50	6.50	16.50	4.00	107.25	429.00	10.00	4290.00	10.00
Screw driver with 4 inches punch head	carton ( small )	12.00	0.90	7.00	19.00	4.50	133.00	598.50	10.00	5985.00	10.00
Screw driver for electrical test	carton ( small )	12.00	0.50	7.50	19.50	4.50	146.25	658.13	10.00	6581.25	10.00
Screw driver with switching head	carton	480.00	27.00	38.00	2.00	38.00	76.00	2.888.00	1.00	2888.00	1.00
Adhesive tape for wiring( Black) TGV	carton	250.00	9.50	35.00	35.00	19.00	1.225.00	23.275.00	1.00	23275.00	1.00
Adhesive tape for wiring( Black)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	1.00	8910.00	1.00
shrink adhesive tape 1/2 inch	carton	400.00	5.00	23.00	35.00	31.00	805.00	24.955.00	1.00	24955.00	1.00
shrink adhesive tape 3/4 inch	carton	500.00	4.60	23.00	35.00	31.00	805.00	24.955.00	1.00	24955.00	1.00
shrink adhesive tape 1 inch big size	carton	72.00	4.00	21.00	32.00	30.00	672.00	20.160.00	1.00	20160.00	1.00
shrink adhesive tape 1.5 inch big size	carton	48.00	4.00	21.00	32.00	30.00	672.00	20.160.00	1.00	20160.00	1.00
shrink adhesive tape 2 inch big size	carton	36.00	4.00	21.00	32.00	30.00	672.00	20.160.00	1.00	20160.00	1.00
shrink adhesive tape 3/4 inch big size	carton	72.00	4.00	21.00	32.00	30.00	672.00	20.160.00	1.00	20160.00	1.00
Adhesive tape for wiring( White)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	1.00	8910.00	1.00
Adhesive tape for wiring( Green)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	1.00	8910.00	1.00
Adhesive tape for wiring( Red)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	1.00	8910.00	1.00
Adhesive tape for wiring( Blue)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	1.00	8910.00	1.00
Adhesive tape for wiring( Yellow)	carton	100.00	2.00	15.00	33.00	18.00	495.00	8.910.00	1.00	8910.00	1.00
Lubricant oil for machinery round bottle	carton	144.00	12.00	35.00	40.00	29.00	1.400.00	40.600.00	1.00	40600.00	1.00
Lubricant oil for machinery flat bottle	carton	144.00	10.00	33.00	16.50	33.00	544.50	17.968.50	1.00	17968.50	1.00
Painting brush No 1	bundle(box)	60.00	2.00	9.00	20.00	32.00	180.00	5.760.00	1.00	5760.00	1.00
Painting brush No 1.5	bundle(box)	60.00	2.10	9.00	20.00	32.00	180.00	5.760.00	1.00	5760.00	1.00
Painting brush No 2	bundle(box)	60.00	2.20	13.00	22.00	29.00	286.00	8.294.00	1.00	8294.00	1.00
Painting brush No 2.5	bundle(box)	60.00	2.00	9.00	20.00	32.00	180.00	5.760.00	1.00	5760.00	1.00
Painting brush No 3	bundle(box)	60.00	2.20	9.00	20.00	32.00	180.00	5.760.00	1.00	5760.00	1.00
Painting brush No 4	bundle(box)	60.00	2.10	9.00	20.00	32.00	180.00	5.760.00	1.00	5760.00	1.00
Showering head spray	carton	12.00	2.00	24.00	20.50	15.00	492.00	7.380.00	1.00	7380.00	1.00
Cleaning tube	carton	12.00	1.20	19.00	24.00	11.00	456.00	5.016.00	1.00	5016.00	1.00
Pumping tube plastic	carton	120.00	11.00	33.00	65.00	63.00	2.145.00	135.135.00	1.00	135135.00	1.00
Price Tag sticker	carton	10.00	4.00	13.00	30.00	23.00	390.00	8.970.00	1.00	8970.00	1.00
Price tag Shooter	carton	30.00	11.00	48.00	31.00	41.00	1.488.00	61.008.00	1.00	61008.00	11.00
Scissors Rose 304	carton	600.00	15.00	40.00	42.00	34.00	1.680.00	57.120.00	1.00	57120.00	15.00
Scissors Boc 304	carton	600.00	15.00	40.00	42.00	34.00	1.680.00	57.120.00	1.00	57120.00	15.00
Scissors Orange handle	box	6.00	0.70	27.00	38.00	28.00	1.026.00	28.728.00	10.00	28728.00	7.00
Scissors Wildman 05A	box	12.00	0.50	9.00	20.00	8.00	180.00	1.440.00	5.00	7200.00	2.50
Scissors Wildman 04A	box	12.00	0.70	9.00	20.00	8.00	180.00	1.440.00	5.00	7200.00	2.50
Scissors Wildman 05A	box	12.00	1.20	10.00	25.00	12.00	250.00	3.000.00	5.00	15000.00	6.00
Scissors Rubber handle size 1	box	12.00	2.10	11.00	22.00	10.00	242.00	2.420.00	5.00	12100.00	10.50
Scissors Rubber handle size 2	box	12.00	1.90	11.00	20.00	10.00	220.00	2.200.00	5.00	11000.00	9.50
Scissors Rubber handle size 3	box	12.00	1.80	12.00	20.00	8.00	240.00	1.920.00	5.00	9600.00	9.00
Scissors Chinoese yellow handle	carton	84.00	10.00	18.00	22.00	15.00	396.00	5.940.00	1.00	5940.00	10.00
Scissors Rose 33	box	12.00	0.50	8.50	20.00	8.00	170.00	1.360.00	5.00	6800.00	2.50
Scissors Rose 538	box	12.00	0.50	8.50	20.00	8.00	170.00	1.360.00	5.00	6800.00	2.50
Scissors Rose 917	box	12.00	0.50	8.50	20.00	8.00	170.00	1.360.00	5.00	6800.00	2.50
Scissors 8 inches 999	carton	240.00	18.00	40.00	96.00	50.00	3.840.00	192.000.00	1.00	192000.00	18.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Scissors thread, black	box	240.00	4.50	13.00	44.50	15.00	578.50	8,677.50	1.00	8677.50	4.50
Scissors Meti, Rabbit	box	12.00	0.60	10.00	15.50	5.00	155.00	775.00	5.00	3875.00	3.00
Scissors paper set	carton	600.00	17.00	43.00	22.50	30.50	967.50	29,508.75	1.00	29508.75	17.00
Scissors Jasmine	carton	600.00	10.00	32.00	37.00	30.00	1,184.00	35,520.00	1.00	35520.00	10.00
Clipboard A5	carton	144.00	15.60	32.00	48.00	30.00	1,536.00	46,080.00	1.00	46080.00	15.60
Super Glue Kenji	carton	288.00	6.00	30.00	41.00	44.00	1,230.00	54,120.00	1.00	54120.00	6.00
Super Glue Chinese	carton	600.00	9.50	40.50	82.00	29.00	3,321.00	96,309.00	1.00	96309.00	9.50
Super Glue Ateco	carton	288.00	6.50	39.00	40.00	45.00	1,560.00	70,200.00	1.00	70200.00	6.50
Hot Stick Glue Small	carton	3,750.00	25.00	32.00	64.00	17.50	2,048.00	35,840.00	1.00	35840.00	25.00
Hot Stick Glue Big	carton	800.00	25.00	32.00	64.00	17.50	2,048.00	35,840.00	1.00	35840.00	25.00
Latex glue10 Bahi	carton	144.00	16.80	37.00	47.00	33.00	1,739.00	57,387.00	1.00	57387.00	16.80
Latex glue 5 Bahi	carton	288.00	1.60	38.50	42.00	30.00	1,617.00	48,510.00	1.00	48510.00	1.60
Cutter 30-K	carton	240.00	6.60	20.00	39.50	24.00	790.00	18,960.00	1.00	18960.00	6.60
Cutter 44-K	carton	120.00	3.00	20.00	39.50	24.00	790.00	18,960.00	1.00	18960.00	3.00
CutterPI with Blade	carton	120.00	6.10	35.00	56.00	22.00	1,960.00	43,120.00	1.00	43120.00	6.10
CutterPI Colorful	carton	120.00	5.10	22.00	45.50	23.00	1,001.00	23,023.00	1.00	23023.00	5.10
Cutter ST-10	carton	240.00	4.20	27.50	34.00	25.00	935.00	23,375.00	1.00	23375.00	4.20
Cutter ST-100	carton	120.00	5.50	21.00	48.00	16.00	1,008.00	16,128.00	1.00	16128.00	5.50
Cutter ST-9	carton	240.00	2.60	23.50	28.00	21.00	658.00	13,818.00	1.00	13818.00	2.60
Stainless Cutter L-120	carton	240.00	6.60	22.50	42.00	36.00	945.00	34,020.00	1.00	34020.00	6.60
Cutter 3 pieces	carton	60.00	8.00	27.00	37.00	44.00	999.00	43,956.00	1.00	43956.00	8.00
Envelope White long	carton	5,000.00	22.00	28.00	37.00	48.00	1,036.00	49,728.00	1.00	49728.00	22.00
Envelope Standard size, Cartoon	carton	5,000.00	17.00	27.00	64.00	35.00	1,620.00	56,700.00	1.00	56700.00	17.00
Envelope Standard size, Color	carton	5,000.00	17.00	27.00	60.00	35.00	1,620.00	56,700.00	1.00	56700.00	17.00
Envelope Cartoon pattern	carton	5,000.00	16.00	28.00	50.00	35.00	1,400.00	49,000.00	1.00	49000.00	16.00
Envelope White stripe	carton	5,000.00	16.00	28.00	50.00	35.00	1,400.00	49,000.00	1.00	49000.00	16.00
Envelope airplane pattern	carton	5,000.00	16.00	28.00	50.00	35.00	1,400.00	49,000.00	1.00	49000.00	16.00
Envelope Pink stripe	carton	5,000.00	16.00	28.00	50.00	35.00	1,400.00	49,000.00	1.00	49000.00	16.00
Envelope National flag pattern	carton	5,000.00	16.00	28.00	50.00	35.00	1,400.00	49,000.00	1.00	49000.00	16.00
Stapler	carton	240.00	8.00	30.00	37.00	39.00	1,110.00	43,290.00	1.00	43290.00	8.00
Staple wire	carton	30.00	17.00	23.00	38.00	22.00	874.00	19,228.00	1.00	19228.00	17.00
Clipper White 0	box	36.00	1.30	15.00	23.00	18.00	345.00	6,210.00	5.00	3105.00	6.50
Clipper White 2	box	36.00	5.00	11.50	17.50	6.00	201.25	1,207.50	5.00	6037.50	25.00
Clipper White 3	box	72.00	5.00	13.50	16.00	5.50	216.00	1,188.00	5.00	5940.00	25.00
Clipper White 4	box	144.00	0.70	11.50	17.50	6.50	201.25	1,308.13	5.00	6540.63	3.50
Clipper White 5	box	144.00	0.40	9.50	15.50	4.50	147.25	662.63	5.00	3313.13	2.00
Clipper Black 108	carton	720.00	25.70	44.00	51.00	31.00	2,244.00	69,564.00	1.00	69564.00	25.70
Clipper Black 109	carton	720.00	17.50	32.00	48.00	32.00	1,536.00	49,152.00	1.00	49152.00	17.50
Clipper Black 110	box	144.00	1.60	12.00	16.00	11.00	192.00	2,112.00	3.00	6336.00	4.80
Clipper Black 111	box	144.00	1.00	10.00	21.00	9.00	210.00	1,890.00	2.00	3780.00	2.00
Clipper Black 112	box	144.00	0.50	17.00	17.00	7.00	289.00	2,023.00	5.00	10115.00	2.50
Tape 2 side glue, Loose size 1x1	carton	288.00	4.20	25.00	36.00	31.00	900.00	27,900.00	1.00	27900.00	4.20
Tape Osaka 1 meter	carton	600.00	8.20	40.00	51.00	26.00	2,040.00	53,040.00	1.00	53040.00	8.20
Tape Box closer, murky color	carton	72.00	4.50	28.00	36.00	30.00	1,008.00	30,240.00	1.00	30240.00	4.50
Tape Box closer, transparency	carton	72.00	4.50	28.00	36.00	30.00	1,008.00	30,240.00	1.00	30240.00	4.50
Tape transparency 1/2 inch 10 yard	carton	1,152.00	15.00	35.00	37.00	27.00	1,295.00	34,965.00	1.00	34965.00	15.00
Tape transparency 1/2 inch 36 yard, small	carton	288.00	9.60	29.00	42.00	17.00	1,218.00	20,706.00	1.00	20706.00	9.60
Tape transparency 1/2 inch 36 yard, big	carton	144.00	4.60	30.00	40.00	17.00	1,200.00	20,400.00	1.00	20400.00	4.60
Tape transparency 1/2 inch 3 yards	carton	1,440.00	8.00	34.00	50.00	20.00	1,700.00	34,000.00	1.00	34000.00	8.00
Tape transparency 1/2 inch 72 yard	carton	144.00	10.00	36.00	46.00	15.00	1,656.00	24,840.00	1.00	24840.00	10.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Tape: transparency 1 inche 36 yard	carton	96.00	4.60	30.00	40.00	17.00	1.200.00	20.400.00	1.00	20400.00	4.60
Tape: transparency 3.4 inche 36 yard	carton	96.00	4.60	30.00	40.00	17.00	1.200.00	20.400.00	1.00	20400.00	4.60
Tape: transparency 3.4 inche 72 yard	carton	84.00	10.00	36.00	46.00	15.00	1656.00	24840.00	1.00	24840.00	10.00
Pen: Lancer 626 Blue	carton	1003.00	6.50	36.00	43.00	16.00	1548.00	24768.00	1.00	24768.00	6.50
Pen: Lancer 813 Black	carton	1000.00	7.80	36.00	43.00	16.00	1548.00	24768.00	1.00	24768.00	7.80
Pen: Lancer 813 Red	carton	1000.00	7.80	36.00	43.00	16.00	1548.00	24768.00	1.00	24768.00	7.80
Pen: Lancer 813 Blue	carton	1000.00	7.80	36.00	43.00	16.00	1548.00	24768.00	1.00	24768.00	7.80
Pen: Lancer 825 Black	carton	1000.00	9.00	36.00	45.00	16.00	1620.00	25920.00	1.00	25920.00	9.00
Pen: Lancer 825 Red	carton	1000.00	9.00	36.00	45.00	16.00	1620.00	25920.00	1.00	25920.00	9.00
Pen: Lancer 825 Blue	carton	1000.00	9.00	36.00	45.00	16.00	1620.00	25920.00	1.00	25920.00	9.00
Pen: Lancer 878 Black	carton	1000.00	6.50	30.00	45.00	11.00	1350.00	14850.00	1.00	14850.00	6.50
Pen: Lancer 878 Red	carton	1000.00	6.50	30.00	45.00	11.00	1350.00	14850.00	1.00	14850.00	6.50
Pen: Lancer 878 Blue	carton	1000.00	6.50	30.00	45.00	11.00	1350.00	14850.00	1.00	14850.00	6.50
Pen: Lancer 915 Black	carton	1000.00	7.20	36.00	43.00	17.00	1548.00	26316.00	1.00	26316.00	7.20
Pen: Lancer 915 Red	carton	1000.00	7.20	36.00	43.00	17.00	1548.00	26316.00	1.00	26316.00	7.20
Pen: Lancer 915 Blue	carton	1000.00	7.20	36.00	43.00	17.00	1548.00	26316.00	1.00	26316.00	7.20
Pen: Diamond	carton	1000.00	9.00	40.00	49.00	17.50	1960.00	34300.00	1.00	34300.00	9.00
chemical pen: pilot, small Black	parcel	144.00	1.80	17.00	22.50	9.00	382.50	3442.50	2.00	6885.00	3.60
chemical pen: pilot, small Red	parcel	144.00	1.80	17.00	22.50	9.00	382.50	3442.50	2.00	6885.00	3.60
chemical pen: pilot, small Blue	parcel	144.00	1.80	17.00	22.50	9.00	382.50	3442.50	2.00	6885.00	3.60
White board pen: pilot, Black	box	12.00	0.20	7.00	13.50	5.00	94.50	472.50	20.00	9450.00	4.00
White board pen: pilot, Red	box	12.00	0.20	7.00	13.50	5.00	94.50	472.50	20.00	9450.00	4.00
White board pen: pilot, Blue	box	12.00	0.20	7.00	13.50	5.00	94.50	472.50	20.00	9450.00	4.00
Wooden Pencil	carton	144.00	25.00	30.00	41.00	47.00	1230.00	57810.00	1.00	57810.00	25.00
Pencil: multi-head	carton	2880.00	20.00	42.00	52.00	35.00	2184.00	76440.00	1.00	76440.00	20.00
Pencil: multi-head, Diamond	carton	288.00	2.20	21.50	21.50	16.00	462.25	7396.00	1.00	7396.00	2.20
Meji: color pen	carton	240.00	15.00	31.00	67.00	31.00	2077.00	64387.00	1.00	64387.00	15.00
Wooden color short pen	carton	480.00	20.00	28.00	39.00	45.00	1092.00	49140.00	1.00	49140.00	20.00
Plastic binder	carton	120.00	3.70	36.00	38.00	29.00	1368.00	39672.00	1.00	39672.00	3.70
Book: 10 baht	bundle	120.00	15.00	23.00	42.00	17.00	966.00	16422.00	1.00	16422.00	15.00
Book: 5 baht	bundle	360.00	20.00	24.00	55.00	16.00	1320.00	21120.00	1.00	21120.00	20.00
Book: tearable paper, Small	parcel	1000.00	35.00	38.00	67.00	20.00	2546.00	50920.00	1.00	50920.00	35.00
Book: tearable paper, Big	parcel	400.00	25.00	39.00	54.00	19.00	2106.00	40014.00	1.00	40014.00	25.00
Book: tearable paper, without line Small	parcel	1000.00	35.00	38.00	67.00	20.00	2546.00	50920.00	1.00	50920.00	35.00
Book: tearable paper, without line Big	parcel	500.00	25.00	39.00	59.00	22.00	1911.00	42042.00	1.00	42042.00	25.00
Book: Drawing Small	bundle	240.00	20.00	26.00	44.00	19.00	1144.00	21736.00	1.00	21736.00	20.00
Wooden chopping block	carton	12.00	7.50	20.00	25.00	20.00	500.00	10000.00	1.00	10000.00	7.50
Flipper used for frying: with holes	carton	300.00	25.00	33.00	45.00	34.00	1419.00	48246.00	1.00	48246.00	25.00
Flipper used for frying	carton	300.00	25.00	33.00	45.00	34.00	1419.00	48246.00	1.00	48246.00	25.00
Ladle: Betanine	carton	144.00	6.50	25.00	33.00	18.00	825.00	14850.00	1.00	14850.00	6.50
Ladle: Colorful handle	carton	300.00	18.00	26.00	39.00	35.00	1014.00	35490.00	1.00	35490.00	18.00
Ladle: Chinese pattern	carton	600.00	25.00	36.00	46.00	35.00	1656.00	57960.00	1.00	57960.00	25.00
Knife: Kiwi 172	box	12.00	1.10	9.00	30.00	4.00	270.00	1080.00	5.00	5400.00	5.50
Knife: Kiwi 173	box	12.00	1.00	9.00	30.00	4.00	270.00	1080.00	5.00	5400.00	5.00
Knife: Kiwi 193	box	12.00	0.30	7.00	22.00	3.00	154.00	462.00	10.00	4620.00	3.00
Knife: Kiwi 194	box	12.00	0.30	7.00	22.50	3.00	157.50	472.50	10.00	4725.00	3.00
Knife: Kiwi 195	box	12.00	0.40	7.00	24.50	3.00	171.50	514.50	10.00	5145.00	4.00
Knife: Kiwi 21	box	12.00	1.80	9.00	33.00	4.00	297.00	1188.00	5.00	5940.00	9.00
Knife: Kiwi 22	box	12.00	1.80	9.00	33.00	4.00	297.00	1188.00	5.00	5940.00	9.00
Knife: Kiwi 246	box	12.00	0.90	8.50	29.50	35.00	250.75	8776.25	5.00	43881.25	4.50

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Knife Kiwi 247	box	12.00	0.90	8.50	31.00	4.00	263.50	1054.00	5.00	5270.00	4.50
Knife Kiwi 474	box	12.00	0.50	9.50	22.50	3.50	213.75	748.13	5.00	3740.63	2.50
Knife Kiwi 475	box	12.00	0.60	9.50	22.50	3.50	213.75	748.13	5.00	3740.63	3.00
Knife Kiwi 476	box	12.00	1.00	11.00	29.00	4.00	319.00	1276.00	5.00	6380.00	5.00
Knife Kiwi 477	box	12.00	1.00	11.00	29.00	4.00	319.00	1276.00	5.00	6380.00	5.00
Knife Kiwi 501	box	12.00	0.40	6.00	23.50	3.00	141.00	423.00	20.00	8460.00	8.00
Knife Kiwi 502	box	12.00	0.40	6.00	23.50	3.00	141.00	423.00	20.00	8460.00	8.00
Knife Chinese 103	box	12.00	0.20	7.50	25.00	2.50	187.50	468.75	5.00	2343.75	1.00
Knife Chinese 104A	box	12.00	0.40	9.50	23.00	4.50	218.50	983.25	5.00	4916.25	2.00
Knife Chinese 106W	box	12.00	0.40	9.50	24.00	4.00	228.00	912.00	5.00	4560.00	2.00
Knife Chinese 108	box	12.00	0.70	13.00	25.00	3.50	325.00	1137.50	5.00	5687.50	3.50
Knife Chinese 109	box	12.00	0.70	13.50	25.00	3.50	337.50	1181.25	5.00	5906.25	3.50
Knife Chinese 110S	box	12.00	0.70	13.00	23.50	4.00	305.50	1222.00	5.00	6110.00	3.50
Knife Chinese 1168	box	12.00	0.90	11.50	36.00	4.00	414.00	1656.00	5.00	8280.00	4.50
Knife Chinese 1174	box	12.00	1.60	10.00	29.00	4.50	290.00	1305.00	5.00	6525.00	8.00
Knife Chinese 1177	box	12.00	1.10	7.00	32.00	6.00	224.00	1344.00	5.00	6720.00	5.50
Knife Chinese 1178	box	12.00	1.30	7.00	30.00	6.00	210.00	1260.00	5.00	6300.00	6.50
Knife Chinese 202	box	12.00	1.20	7.50	31.50	6.50	236.25	1535.63	5.00	7678.13	6.00
Knife Chinese 204	box	12.00	1.20	10.00	35.50	5.00	355.00	1775.00	5.00	8875.00	6.00
Knife Chinese 205	box	12.00	1.60	10.00	30.00	4.50	500.00	1350.00	5.00	6750.00	8.00
Knife-Vegetable, Wildman 1 blade	bundle	120.00	7.20	16.00	23.50	39.50	376.00	14852.00	1.00	14852.00	7.20
Knife-Vegetable, Wildman 2 blades	bundle	120.00	7.00	16.00	23.50	39.50	376.00	14852.00	1.00	14852.00	7.00
Knife-Vegetable, Wildman .small	bundle	120.00	3.90	14.00	18.00	35.00	252.00	8820.00	1.00	8820.00	3.90
Grilling sieve	bundle	60.00	8.00	26.00	40.00	20.00	1040.00	20800.00	1.00	20800.00	8.00
Aluminium foil- long	carton	24.00	9.00	34.00	48.00	22.00	1632.00	35904.00	1.00	35904.00	9.00
Aluminium foil- short	carton	24.00	4.30	21.00	31.00	33.00	651.00	21483.00	1.00	21483.00	4.30
Dry cell, Panasonic, 2A, green	carton	1000.00	20.00	18.00	31.00	27.00	558.00	15066.00	1.00	15066.00	20.00
Dry cell, Panasonic, 2A, black	carton	1000.00	22.00	18.00	31.00	27.00	558.00	15066.00	1.00	15066.00	22.00
Dry cell, Panasonic, 2A, red	carton	1000.00	22.00	18.00	31.00	27.00	558.00	15066.00	1.00	15066.00	22.00
Dry cell, Panasonic, 3A, black	carton	1200.00	12.00	25.00	29.00	13.00	725.00	9425.00	1.00	9425.00	12.00
Dry cell, Panasonic 9V, square shape	carton	288.00	10.00	24.00	24.00	17.00	576.00	9792.00	1.00	9792.00	10.00
Dry cell, Panasonic, 2A, Alkaline	carton	144.00	9.00	24.00	31.00	23.50	744.00	17484.00	1.00	17484.00	9.00
Dry cell, Panasonic, 3A, Alkaline	carton	144.00	5.00	25.00	31.00	17.00	775.00	13175.00	1.00	13175.00	5.00
Dry cell, Panasonic size C, Middle	carton	480.00	25.00	29.50	32.50	23.00	958.75	22051.25	1.00	22051.25	25.00
Dry cell, Panasonic size D, Big	carton	288.00	26.00	29.00	39.00	22.00	1131.00	24882.00	1.00	24882.00	26.00
Dry cell, Chinese, 2A	carton	60.00	17.00	19.00	31.00	27.00	589.00	15903.00	1.00	15903.00	17.00
Dry cell, Chinese, 3A	carton	2160.00	18.00	26.00	32.00	15.00	832.00	12480.00	1.00	12480.00	18.00
Dry cell, CAT, Small	carton	144.00	12.00	21.50	29.00	20.00	623.50	12470.00	1.00	12470.00	12.00
Dry cell, CAT, Big	carton	144.00	15.50	21.50	29.00	20.00	623.50	12470.00	1.00	12470.00	15.50
Flashlight, Panasonic, FF-137	carton	24.00	4.00	28.00	41.00	26.50	1148.00	30422.00	1.00	30422.00	4.00
Flashlight, Panasonic, FF-327	carton	48.00	3.00	24.00	43.00	18.00	1032.00	18576.00	1.00	18576.00	3.00
Flashlight, PF-127	carton	24.00	3.50	28.00	41.00	20.00	1148.00	22960.00	1.00	22960.00	3.50
Flashlight, Chinese, Colorful plastic	carton	120.00	10.00	30.00	40.00	50.00	1200.00	60000.00	1.00	60000.00	10.00
Flashlight, Gun A2500	carton	24.00	2.10	18.00	28.00	18.00	504.00	9072.00	1.00	9072.00	2.10
Flashlight, Gun A2600	carton	24.00	1.80	22.00	25.00	20.00	550.00	11000.00	1.00	11000.00	1.80
Flashlight, Gun S2200	carton	12.00	1.80	19.50	20.00	16.00	390.00	6240.00	1.00	6240.00	1.80
Flashlight, Tiger 300	carton	192.00	25.00	43.00	62.00	46.50	2666.00	123969.00	1.00	123969.00	25.00
Flashlight, Tiger 500	carton	120.00	21.00	39.50	67.00	54.50	2646.50	144234.25	1.00	144234.25	21.00
Flashlight, Tiger 700	carton	72.00	16.50	40.50	52.50	56.00	2126.25	119070.00	1.00	119070.00	16.50
Power plug receptacle 2001-10	carton	24.00	6.90	25.50	44.00	26.00	1122.00	29172.00	1.00	29172.00	6.90

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Power plug receptable: 2001-11	carton	24.00	6.50	25.50	44.00	26.00	1122.00	29172.00	1.00	29172.00	6.50
Power plug receptable: 2001-5	carton	24.00	11.00	29.00	53.00	18.00	1537.00	27666.00	1.00	27666.00	11.00
Power plug receptable: 2001-8	carton	24.00	9.00	25.50	44.00	26.00	1122.00	29172.00	1.00	29172.00	9.00
Power plug receptable: 2001-9	carton	24.00	8.00	25.50	44.00	26.00	1122.00	29172.00	1.00	29172.00	8.00
Power plug receptable: 10M. AMC	carton	24.00	10.00	36.00	47.00	19.00	1692.00	32148.00	1.00	32148.00	10.00
Power plug receptable: 10M. Moto	carton	24.00	10.00	36.00	47.00	19.00	1692.00	32148.00	1.00	32148.00	10.00
Power plug receptable: 20M. AMC	carton	12.00	9.00	40.00	42.00	16.00	1680.00	26880.00	1.00	26880.00	9.00
Power plug receptable: 5M. Moto	carton	24.00	5.30	36.00	47.00	19.00	1692.00	32148.00	1.00	32148.00	5.30
Power plug receptable: 8M. AMC	carton	24.00	8.00	36.00	47.00	19.00	1692.00	32148.00	1.00	32148.00	8.00
Power plug receptable: SUI. triangle shape	carton	24.00	3.50	26.00	43.00	16.00	1118.00	17888.00	1.00	17888.00	3.50
Power plug receptable: NS-1 Nakashi	carton	24.00	5.60	27.00	39.00	17.00	1053.00	17901.00	1.00	17901.00	5.60
Power plug receptable: Nagas 10M	carton	24.00	11.00	31.00	55.00	20.00	1705.00	34100.00	1.00	34100.00	11.00
Power plug receptable: Nagas 5M	carton	24.00	6.00	31.00	55.00	20.00	1705.00	34100.00	1.00	34100.00	6.00
Power plug receptable: Nagas 8M	carton	24.00	10.00	31.00	55.00	20.00	1705.00	34100.00	1.00	34100.00	10.00
Power line of a frying pan	carton	50.00	6.00	27.00	35.00	31.00	945.00	29295.00	1.00	29295.00	6.00
Power line of a flat iron	carton	50.00	6.00	27.00	35.00	31.00	945.00	29295.00	1.00	29295.00	6.00
Power line of a pot	carton	50.00	5.00	27.00	35.00	31.00	945.00	29295.00	1.00	29295.00	5.00
Light bulb: Superlamp 200W	carton	25.00	2.30	41.00	41.00	15.00	1681.00	25215.00	1.00	25215.00	2.30
Light bulb of Flashlight: 24V No 1	carton	1000.00	3.00	24.00	28.00	18.50	672.00	12432.00	1.00	12432.00	3.00
Light bulb of Flashlight: 24V No 2	carton	1000.00	3.00	24.00	28.00	18.50	672.00	12432.00	1.00	12432.00	3.00
Light bulb of Flashlight: 24V No 3	carton	1000.00	3.00	24.00	28.00	18.50	672.00	12432.00	1.00	12432.00	3.00
Light bulb of Flashlight: 24V No 4	carton	1000.00	3.00	24.00	28.00	18.50	672.00	12432.00	1.00	12432.00	3.00
Light bulb of Flashlight: 24V No 5	carton	1000.00	3.00	24.00	28.00	18.50	672.00	12432.00	1.00	12432.00	3.00
Plug head: White	bundle	300.00	5.00	10.00	18.00	46.00	180.00	8280.00	1.00	8280.00	5.00
Plug head: Black	bundle	300.00	2.20	10.00	18.00	35.00	180.00	6300.00	1.00	6300.00	2.20
Plug Receptable head: Black	bundle	1500.00	3.80	9.00	18.00	45.00	162.00	7290.00	1.00	7290.00	3.80
Hair Jel: Jenny	carton	288.00	19.00	34.00	44.00	26.00	1496.00	38896.00	1.00	38896.00	19.00
Nail polisher: Big size	carton	216.00	28.00	35.00	39.00	36.00	1365.00	49140.00	1.00	49140.00	28.00
Nail polisher: Square bottle	carton	360.00	34.00	33.00	45.00	47.00	1419.00	66693.00	1.00	66693.00	34.00
Nail polisher: Small size	carton	360.00	30.00	26.00	31.00	52.00	806.00	41912.00	1.00	41912.00	30.00
Olive oil: Small size	carton	360.00	30.00	26.00	31.00	52.00	806.00	41912.00	1.00	41912.00	30.00
Olive oil: Big size	carton	216.00	28.00	35.00	39.00	36.00	1365.00	49140.00	1.00	49140.00	28.00
Razor Blade: Superthin	carton	100.00	8.50	20.00	45.00	22.00	906.00	19800.00	1.00	19800.00	8.50
Razor Blade: SuperMax	carton	100.00	8.50	19.00	44.00	21.00	836.00	17556.00	1.00	17556.00	8.50
Razor Blade: SuperStainless	carton	100.00	6.90	20.00	45.00	22.00	906.00	19800.00	1.00	19800.00	6.90
Razor Blade: Aita	Wooden crate	100.00	25.00	35.00	49.00	30.00	1715.00	51450.00	1.00	51450.00	25.00
Razor Blade: Feather	carton	100.00	30.00	34.50	55.50	30.00	1845.75	55372.50	1.00	55372.50	30.00
Razor Blade: Dorgo	carton	10000.00	15.00	35.00	55.00	23.00	1925.00	44275.00	1.00	44275.00	15.00
Clipping Blade: Sakura	carton	7200.00	30.00	26.00	33.00	21.00	858.00	18018.00	1.00	18018.00	30.00
Clipping Blade: Dragonfly	carton	7200.00	30.00	25.00	33.00	20.00	825.00	16500.00	1.00	16500.00	30.00
Short Clipping Blade: Dragonfly	carton	7200.00	30.00	27.00	36.00	21.00	972.00	20412.00	1.00	20412.00	30.00
Razor: S Doll	carton	3000.00	25.00	27.00	40.00	45.00	1080.00	48600.00	1.00	48600.00	25.00
Razor: 4 pieces in one pack	Small parcel	12.00	0.31	15.00	15.00	4.00	225.00	900.00	20.00	18000.00	6.25
Tradition razor	carton	3000.00	18.00	30.00	45.00	47.50	1350.00	64125.00	1.00	64125.00	18.00
Razor: Double blades SuperMax	carton	144.00	6.10	33.00	41.00	40.00	1353.00	54120.00	1.00	54120.00	6.10
Razor: DoctorII	carton	720.00	5.40	36.00	40.00	49.00	1440.00	70560.00	1.00	70560.00	5.40
Razor: single blades Gillette Click	carton	144.00	12.00	36.00	55.00	18.00	1980.00	35640.00	1.00	35640.00	12.00
Razor: Gillette Thin 2	carton	288.00	2.50	40.00	65.00	13.00	2600.00	33800.00	1.00	33800.00	2.50
Razor: with Nail cutter	carton	360.00	5.50	39.00	20.00	45.00	780.00	35100.00	1.00	35100.00	5.50
Razor: Karat	bundle	120.00	6.60	15.00	28.50	48.00	427.50	20520.00	1.00	20520.00	6.60



Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Razor : Feather	parcel	144.00	4.50	13.00	36.00	48.00	468.00	22464.00	1.00	22464.00	4.50
Razor : with 2 blades	carton	480.00	16.00	45.00	58.00	40.00	2610.00	104400.00	1.00	104400.00	16.00
Razor : Fancy	carton	360.00	5.50	38.00	41.00	45.00	1558.00	70110.00	1.00	70110.00	5.50
Razor : Green Sayuri	carton	360.00	5.50	38.00	40.00	46.50	1520.00	70680.00	1.00	70680.00	5.50
Razor : Yellow Sayuri	carton	360.00	5.50	38.00	40.00	46.50	1520.00	70680.00	1.00	70680.00	5.50
Razor : TCI Set	carton	120.00	2.50	29.00	70.00	17.00	2030.00	34510.00	1.00	34510.00	2.50
Toothbrush : Soft, Iransparent Eastman	carton	300.00	20.00	20.00	64.00	44.00	1280.00	56320.00	1.00	56320.00	20.00
Toothbrush : 3 in one pack JGA, turbid	carton	432.00	16.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	16.00
Toothbrush : 3 in one pack JGA, transparent	carton	432.00	16.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	16.00
Toothbrush : Popular Eastman	carton	144.00	3.70	23.00	47.00	27.00	1081.00	29187.00	1.00	29187.00	3.70
Toothbrush : 12 in one box, Medium Victory	carton	144.00	5.60	26.00	33.00	20.00	858.00	17160.00	1.00	17160.00	5.60
Toothbrush : 12 in one box, Soft Victory	carton	144.00	5.60	26.00	33.00	20.00	858.00	17160.00	1.00	17160.00	5.60
Toothbrush : 30 in one box, Medium Victory	carton	120.00	5.00	26.00	33.00	23.00	858.00	19734.00	1.00	19734.00	5.00
Toothbrush : Slim Victory	carton	144.00	3.60	38.00	38.00	27.00	1444.00	38988.00	1.00	38988.00	3.60
Toothbrush : 30 in one box, Soft Victory	carton	120.00	4.70	26.00	33.00	23.00	858.00	19734.00	1.00	19734.00	4.70
Toothbrush : OralB Med	carton	96.00	2.50	23.50	37.50	25.00	881.25	22051.25	1.00	22051.25	2.50
Toothbrush : OralB Soft	carton	96.00	2.50	23.50	37.50	25.00	881.25	22051.25	1.00	22051.25	2.50
Toothbrush : Chinese Kid	carton	720.00	10.00	25.00	44.00	44.00	1150.00	50600.00	1.00	50600.00	10.00
Toothbrush : Chinese Adult 650	carton	1200.00	16.00	24.00	44.00	66.00	1056.00	69696.00	1.00	69696.00	16.00
Toothbrush : Chinese Adult 940	carton	1200.00	15.00	47.00	48.00	37.00	2256.00	83472.00	1.00	83472.00	15.00
Toothbrush : CASA, 203	carton	600.00	13.20	46.00	61.00	28.00	2806.00	78568.00	1.00	78568.00	13.20
Toothbrush : CASA, 204	carton	600.00	13.20	46.00	61.00	28.00	2806.00	78568.00	1.00	78568.00	13.20
Toothbrush : CASA, 205	carton	600.00	13.20	46.00	61.00	28.00	2806.00	78568.00	1.00	78568.00	13.20
Toothbrush : CASA, 207	carton	600.00	13.20	46.00	61.00	28.00	2806.00	78568.00	1.00	78568.00	13.20
Toothbrush : CASA, 208	carton	600.00	13.20	46.00	61.00	28.00	2806.00	78568.00	1.00	78568.00	13.20
Toothbrush : CASA, 210	carton	600.00	13.20	46.00	61.00	28.00	2806.00	78568.00	1.00	78568.00	13.20
Toothbrush : JAGA, 674	carton	600.00	10.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	10.00
Toothbrush : JAGA, 690	carton	600.00	10.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	10.00
Toothbrush : JAGA, 698	carton	600.00	10.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	10.00
Toothbrush : JAGA, 699	carton	600.00	10.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	10.00
Toothbrush : JAGA, 739	carton	600.00	10.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	10.00
Toothbrush : JAGA, 740	carton	600.00	10.00	46.00	57.00	27.00	2622.00	70794.00	1.00	70794.00	10.00
Toothbrush : OSAKA, 204	carton	480.00	8.00	25.50	43.00	59.00	1096.50	64693.50	1.00	64693.50	8.00
Toothbrush : OSAKA, 205	carton	480.00	8.00	25.50	43.00	59.00	1096.50	64693.50	1.00	64693.50	8.00
Toothbrush : OSAKA, 206	carton	480.00	8.00	25.50	43.00	59.00	1096.50	64693.50	1.00	64693.50	8.00
Toothbrush : Kid, Komo	carton	576.00	6.60	29.00	43.00	47.00	1247.00	58609.00	1.00	58609.00	6.60
Toothbrush : Jomana	carton	288.00	2.50	21.00	44.00	19.00	924.00	17556.00	1.00	17556.00	2.50
Nail cleaning brush: flat iron shape	carton	72.00	4.50	31.00	32.00	22.00	992.00	21824.00	1.00	21824.00	4.50
Nail cleaning brush: Big, transparent	carton	180.00	5.00	32.00	40.00	16.50	1280.00	21120.00	1.00	21120.00	5.00
One bali cotton wool	parcel	2500.00	7.00	70.00	50.00	120.00	3500.00	420000.00	1.00	420000.00	7.00
Cotton wool: Ambulance bus	carton	240.00	7.50	41.00	40.00	32.00	1640.00	52480.00	1.00	52480.00	7.50
Ten bali cotton wool	parcel	240.00	8.00	45.00	45.00	80.00	2025.00	162000.00	1.00	162000.00	8.00
27 bali cotton wool	parcel	12.00	2.00	30.00	47.00	25.00	1410.00	35250.00	1.00	35250.00	2.00
Cotton wool: Shell, pot, JoJo	carton	240.00	14.00	44.00	58.00	42.00	2552.00	107184.00	1.00	107184.00	14.00
Cotton buts : 50 pieces in pack	carton	1200.00	10.00	42.00	54.00	40.00	2268.00	90720.00	1.00	90720.00	10.00
Cotton buts : 100 pieces in pack	carton	576.00	10.00	38.00	49.00	48.00	1862.00	89376.00	1.00	89376.00	10.00
Cotton buts : Fancy Pot 2 slots	carton	240.00	20.00	50.00	67.00	44.00	3350.00	147400.00	1.00	147400.00	20.00
Cotton buts : Fancy Jumbo Shell Pot	carton	240.00	21.00	50.00	67.00	51.00	3350.00	170850.00	1.00	170850.00	21.00
Cotton buts : Fancy Giant size pot	carton	144.00	13.00	58.00	80.00	30.00	4640.00	139200.00	1.00	139200.00	13.00
Cotton buts : Square box, pineapple	carton	240.00	14.00	35.00	60.00	50.00	2100.00	105000.00	1.00	105000.00	14.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Cotton bus transparent small size pot	carton	240.00	9.00	33.00	44.00	41.00	1452.00	59532.00	1.00	59532.00	9.00
Cotton bus: 100 pieces in pack	carton	240.00	9.30	37.00	44.00	40.00	1628.00	65120.00	1.00	65120.00	9.30
Cotton bus: 100 pieces in pack	carton	960.00	8.50	43.00	53.00	41.00	2279.00	93439.00	1.00	93439.00	8.50
Soap: kok-leang	carton	72.00	4.50	21.00	40.00	20.00	840.00	16800.00	1.00	16800.00	4.50
Soap: Ginger	carton	300.00	25.00	21.00	41.00	30.00	861.00	25830.00	1.00	25830.00	25.00
Soap: Small Cucumber	carton	144.00	8.00	32.00	38.00	14.00	1216.00	17024.00	1.00	17024.00	8.00
Soap: Tamarine	carton	240.00	11.00	27.00	39.00	26.00	1053.00	27378.00	1.00	27378.00	11.00
Soap: Laura	carton	120.00	22.00	26.00	33.00	40.00	858.00	34320.00	1.00	34320.00	22.00
Soap: Big Tamarine	carton	120.00	16.00	35.00	40.00	22.00	1400.00	30800.00	1.00	30800.00	16.00
Soap: Ya-Un	carton	72.00	6.00	25.00	32.00	25.00	800.00	20000.00	1.00	20000.00	6.00
Shower sponge with Shower Cream	big parcel	500.00	12.00	120.00	110.00	40.00	13200.00	528000.00	1.00	528000.00	12.00
Shower sponge: Natural	carton	36.00	1.80	29.00	31.00	20.00	899.00	17980.00	1.00	17980.00	1.80
Shower sponge: Jolly 001	carton	144.00	3.80	30.00	50.00	50.00	1500.00	75000.00	1.00	75000.00	3.80
Shower sponge: Jolly 002	carton	144.00	3.80	30.00	50.00	50.00	1500.00	75000.00	1.00	75000.00	3.80
Shower sponge: Jolly 003	carton	144.00	3.80	30.00	50.00	50.00	1500.00	75000.00	1.00	75000.00	3.80
Shower sponge: Jolly 004	carton	144.00	3.80	30.00	50.00	50.00	1500.00	75000.00	1.00	75000.00	3.80
Menthol: Mid	carton	30.00	9.00	23.50	34.00	20.00	799.00	15980.00	1.00	15980.00	9.00
Refilled Gas: Buca Jumbo	carton	12.00	4.20	21.00	28.00	21.00	588.00	12348.00	1.00	12348.00	4.20
Refilled Gas: Buca Small	carton	288.00	0.90	30.00	45.00	44.00	1350.00	59400.00	1.00	59400.00	0.90
a cigarette lighter: AS	carton	1000.00	20.00	27.00	45.00	28.00	1215.00	34020.00	1.00	34020.00	20.00
a cigarette lighter: Pilot	carton	1000.00	22.00	27.00	44.00	28.00	1188.00	33264.00	1.00	33264.00	22.00
a cigarette lighter: Red Tai-Yo	carton	1000.00	20.00	28.00	46.00	18.00	1288.00	23184.00	1.00	23184.00	20.00
a cigarette lighter: Tai-Yo	carton	1000.00	20.00	28.00	46.00	28.00	1288.00	36064.00	1.00	36064.00	20.00
a cigarette lighter: Black Star	carton	1000.00	20.00	27.00	45.00	28.00	1215.00	34020.00	1.00	34020.00	20.00
a cigarette lighter: Red Star	carton	1000.00	20.00	27.00	45.00	28.00	1215.00	34020.00	1.00	34020.00	20.00
Dry Alcohol cup	carton	500.00	18.00	26.00	50.00	23.00	1300.00	29900.00	1.00	29900.00	18.00
A gas oven: lighter grade A	carton	50.00	6.50	36.00	39.50	41.00	1422.00	58302.00	1.00	58302.00	6.50
A gas oven: lighter grade C	carton	120.00	9.00	51.00	32.50	18.50	1657.50	30663.75	1.00	30663.75	9.00
Kerosine: Jun	carton	24.00	3.30	18.00	22.00	15.00	396.00	5940.00	5.00	29700.00	16.50
Indigo: Big bottle: Crown	carton	108.00	9.00	36.00	36.50	38.00	1314.00	49932.00	1.00	49932.00	9.00
Indigo: bottle: Monkey	carton	288.00	7.50	24.00	33.00	28.00	792.00	22176.00	1.00	22176.00	7.50
Indigo: square shape: Crown	bundle	60.00	1.20	10.00	24.00	9.00	240.00	2160.00	1.00	2160.00	1.20
Indigo: Small bottle: Chicken	carton	720.00	19.00	27.00	50.00	38.50	1350.00	51975.00	1.00	51975.00	19.00
Indigo: Square bottle: Chicken	carton	720.00	13.00	29.00	44.00	25.00	1276.00	31900.00	1.00	31900.00	13.00
Indigo: Big bottle: Chicken	carton	144.00	1.60	33.00	45.00	35.00	1485.00	51975.00	1.00	51975.00	1.60
Indigo: Liquid: Chicken	carton	96.00	18.00	33.00	42.00	49.00	1386.00	67914.00	1.00	67914.00	18.00
Indigo: Medium bottle: Chicken	carton	360.00	22.00	35.00	40.00	42.00	1400.00	58800.00	1.00	58800.00	22.00
Indigo: square shape: Monkey	carton	360.00	9.00	24.00	33.00	28.00	792.00	22176.00	1.00	22176.00	9.00
Indigo: big square shape: Crown	carton	72.00	12.00	31.00	46.00	21.00	1426.00	29946.00	1.00	29946.00	12.00
Fabric Softener: Pink	carton	36.00	15.00	26.00	51.00	40.00	1326.00	53040.00	1.00	53040.00	15.00
Fabric Softener: Sky-blue	carton	36.00	15.00	26.00	51.00	40.00	1326.00	53040.00	1.00	53040.00	15.00
Fabric Whitener	carton	72.00	8.00	24.50	33.00	28.00	808.50	22638.00	1.00	22638.00	8.00
Fabric cleaning soap: 3 stars	carton	50.00	16.00	31.50	31.00	23.00	976.50	22459.50	1.00	22459.50	16.00
Fabric cleaning soap: Carus crane	carton	50.00	15.00	31.00	31.00	21.00	961.00	20181.00	1.00	20181.00	15.00
Metal polisher: Medium: Brasso	carton	12.00	3.00	17.00	21.50	16.00	365.50	5848.00	1.00	5848.00	3.00
Metal polisher: Small: Brasso	carton	24.00	3.40	22.00	32.00	11.50	704.00	8096.00	1.00	8096.00	3.40
Metal polisher: Big: Brasso	carton	12.00	5.80	21.00	27.00	19.00	567.00	10773.00	1.00	10773.00	5.80
Metal polisher: Small: Vnol	carton	20.00	1.40	16.50	18.00	12.00	297.00	3564.00	2.00	7128.00	2.80
Metal polisher: Big: Vnol	carton	20.00	2.60	22.00	21.50	15.00	473.00	7095.00	1.00	7095.00	2.60
Shoe polish: small, black	carton	144.00	9.00	23.00	31.00	27.00	713.00	19251.00	1.00	19251.00	9.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Shoe polish: small, brown	carton	144.00	9.00	23.00	31.00	27.00	713.00	19251.00	1.00	19251.00	9.00
Shoe polish: big, black	carton	72.00	9.50	30.00	30.50	24.50	915.00	22417.50	1.00	22417.50	9.50
Shoe rubber: Kiwi, White	carton	48.00	9.50	21.00	45.50	17.00	955.50	16243.50	1.00	16243.50	9.50
Shoe rubber: Kiwi, Black	carton	48.00	9.50	21.00	45.50	17.00	955.50	16243.50	1.00	16243.50	9.50
Shoe rubber: Kiwi, Brown	carton	48.00	9.50	21.00	45.50	17.00	955.50	16243.50	1.00	16243.50	9.50
Leather polish: Kiwi, Black	carton	48.00	5.50	22.00	48.00	65.00	1056.00	68640.00	1.00	68640.00	5.50
Leather polish: Kiwi, Classic Black	carton	48.00	5.50	22.00	48.00	65.00	1056.00	68640.00	1.00	68640.00	5.50
Leather polish: Kiwi, Brown	carton	48.00	5.50	22.00	48.00	65.00	1056.00	68640.00	1.00	68640.00	5.50
Leather polish: Kiwi, Classic Brown	carton	48.00	5.50	22.00	48.00	65.00	1056.00	68640.00	1.00	68640.00	5.50
Wax for Leather Shoe: Small	carton	24.00	4.10	30.00	32.00	13.00	960.00	12480.00	1.00	12480.00	4.10
Glass Cleaner: Bula	carton	12.00	4.00	17.50	23.00	23.00	402.50	9257.50	2.00	18515.00	8.00
Bath room cleaner: Jackie, Pink	carton	24.00	13.00	29.50	43.00	24.00	1268.50	30444.00	1.00	30444.00	13.00
Mosquitoes wiping joss stick: Dragon	carton	96.00	12.00	37.00	48.00	22.00	1776.00	39072.00	1.00	39072.00	12.00
Mosquitoes wiping reagent: Ko-Yo-15	carton	288.00	2.70	31.00	36.00	14.00	1116.00	15624.00	1.00	15624.00	2.70
Mentholated ointment	carton	288.00	35.00	38.00	53.00	23.00	2014.00	46322.00	1.00	46322.00	35.00
Dish soap cleanser	carton	100.00	5.00	24.00	29.00	10.00	696.00	6960.00	1.00	6960.00	5.00
Dish liquid cleanser: Sunny Wash 800cc	carton	24.00	20.00	33.00	44.00	30.00	1452.00	43560.00	1.00	43560.00	20.00
Dish liquid cleanser: Cleo	carton	24.00	12.00	27.00	38.00	26.00	1026.00	26676.00	1.00	26676.00	12.00
Scrubber: Elephant	parcel	500.00	6.50	47.00	47.00	39.00	2,209.00	86,151.00	1.00	86,151	6.50
Scrubber: Diamond	carton	1,000.00	10.50	50.00	80.00	52.00	4,000.00	208,000.00	1.00	208,000	10.50
Scrubber with Handle: Black	carton	12.00	1.30	31.00	31.00	14.00	961.00	13,454.00	1.00	13,454	1.30
Scrubber: Merbrie, Original	carton	360.00	5.50	34.00	45.00	44.00	1,530.00	67,320.00	1.00	67,320	5.50
Scrubber: Bigsize 1m x 2m	bundle	5.00	10.00	70.00	120.00	15.00	8,400.00	126,000.00	1.00	126,000	10.00
Scrubber: 3M	carton	200.00	4.50	37.00	66.00	25.00	2,442.00	61,050.00	1.00	61,050	4.50
Scrubber: Set 10	carton	144.00	12.00	55.00	88.00	46.00	4,840.00	222,640.00	1.00	222,640	12.00
Scrubber: Set 11	carton	216.00	18.00	46.00	95.00	45.00	4,370.00	196,650.00	1.00	196,650	18.00
Scrubber: Set 14	carton	144.00	20.00	44.00	67.00	46.00	2,948.00	135,608.00	1.00	135,608	20.00
Scrubber: Set 1 x 3	parcel	144.00	4.00	54.00	52.00	37.00	2,808.00	103,896.00	1.00	103,896	4.00
Scrubber with sponge: Merrybri, Twin	carton	288.00	3.50	38.00	74.50	37.50	2,831.00	106,162.50	1.00	106,162.5	3.50
Cleaning sponge: 3M, 2 purpose	carton	240.00	4.70	38.00	66.00	37.00	2,508.00	92,796.00	1.00	92,796	4.70
Cenric cleaning Sponge: Tree	parcel	100.00	1.10	50.00	48.00	29.00	2,400.00	69,600.00	1.00	69,600	1.10
Feet cleaning sponge: Jolly	bundle	12.00	1.00	39.00	55.00	30.00	2,145.00	64,350.00	1.00	64,350	1.00
Cleaning sponge with net: Modern	parcel	720.00	5.80	56.00	75.00	60.00	4,088.00	245,280.00	1.00	245,280	5.80
Cleaning sponge with net: House wife	bundle	720.00	4.50	50.00	70.00	60.00	3,500.00	210,000.00	1.00	210,000	4.50
Cleaning sponge with net: Merry sponge	carton	288.00	3.90	22.50	64.00	52.00	1,440.00	74,880.00	1.00	74,880	3.90
Cleaning sponge with scrubber: Modern	parcel	720.00	5.50	57.00	105.00	28.00	5,985.00	167,580.00	1.00	167,580	5.50
Floor cleaning sponge: Rose	bundle	60.00	2.90	50.00	102.00	37.00	5,100.00	188,700.00	1.00	188,700	2.90
Floor cleaning sponge: Tree	parcel	60.00	20.00	50.00	102.00	37.00	5,100.00	188,700.00	1.00	188,700	20.00
Cleaning sponge: Hama, L	parcel	288.00	3.10	60.00	72.00	45.00	4,320.00	194,400.00	1.00	194,400	3.10
Cleaning sponge: Tree, L	parcel	288.00	2.50	59.00	69.00	46.00	4,071.00	187,266.00	1.00	187,266	2.50
Cleaning sponge: Tree, M	parcel	432.00	2.70	63.00	77.00	34.00	4,851.00	164,934.00	1.00	164,934	2.70
Cleaning sponge: Tree, S	parcel	720.00	2.60	54.00	68.00	44.00	3,672.00	161,568.00	1.00	161,568	2.60
Mop with round fabric	bundle	12.00	8.50	8.00	140.00	15.00	1,120.00	16,800.00	1.00	16,800	8.50
Aluminium Mop	bundle	12.00	4.00	8.00	130.00	16.00	1,040.00	16,640.00	1.00	16,640	4.00
Feathers stick	bundle	200.00	26.00	34.00	67.00	34.00	2,278.00	77,452.00	1.00	77,452	26.00
Cleaning frill: Kilo	bundle	10.00	10.00	50.00	65.00	46.00	1,950.00	89,700.00	1.00	89,700	10.00
Cleaning frill: Dozen pack	bundle	12.00	2.50	32.00	32.00	22.00	1,024.00	22,528.00	1.00	22,528	2.50
Cleaning stainless frill: Big brite	carton	288.00	7.00	44.00	45.00	40.00	1,980.00	79,200.00	2.00	158,400	14.00
Cleaning stainless frill: Poly	carton	144.00	5.00	43.00	46.00	17.00	1,978.00	33,626.00	1.00	33,626	5.00
Mothball: ATM, small	carton	144.00	6.00	27.00	38.00	10.50	1,026.00	10,773.00	1.00	10,773	6.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space (cm <sup>3</sup> )			
Mothball: ATM big	carton	144.00	14.00	34.00	50.00	13.00	1.700.00	22,100.00	1.00	22100	14.00
Mothball: Kilo	carton	25.00	25.00	35.00	42.00	24.00	1.470.00	35,280.00	1.00	35280	25.00
Mothball: Jumbo size	carton	25.00	25.00	36.00	48.00	25.50	1.728.00	44,064.00	1.00	44064	25.00
Mothball: Small pack	carton	144.00	7.00	25.00	38.00	22.00	950.00	20,900.00	1.00	20900	7.00
Mothball: Big pack 1x2	carton	144.00	9.00	30.00	40.00	25.00	1.200.00	30,000.00	1.00	30000	9.00
Rubber gloves: Canon. L	small box	12.00	1.10	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	5.50
Rubber gloves: Canon. M	small box	12.00	1.10	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	5.50
Rubber gloves: Canon. S	small box	12.00	1.10	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	5.50
Rubber gloves: Dragon. L	carton	240.00	20.00	37.00	74.00	43.00	2.738.00	117,734.00	1.00	117734	20.00
Rubber gloves: Dragon. M	carton	240.00	20.00	37.00	74.00	43.00	2.738.00	117,734.00	1.00	117734	20.00
Rubber gloves: Dragon. S	carton	240.00	20.00	37.00	74.00	43.00	2.738.00	117,734.00	1.00	117734	20.00
Rubber gloves: OK. 7.5. cream color	carton	144.00	1.20	35.00	46.00	42.00	1.610.00	67,620.00	1.00	67620	1.20
Rubber gloves: OK. 7.5. orange color	carton	144.00	1.20	35.00	46.00	42.00	1.610.00	67,620.00	1.00	67620	1.20
Rubber gloves: OK. 8.5. cream color	carton	144.00	1.20	35.00	46.00	42.00	1.610.00	67,620.00	1.00	67620	1.20
Rubber gloves: OK. 8.5. orange color	carton	144.00	1.20	35.00	46.00	42.00	1.610.00	67,620.00	1.00	67620	1.20
Rubber gloves: Panda. Black. L	small box	12.00	1.50	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	7.50
Rubber gloves: Panda. Black. M	small box	12.00	1.50	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	7.50
Rubber gloves: Panda. Black. S	small box	12.00	1.50	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	7.50
Rubber gloves: Panda. Orange. L	small box	12.00	1.50	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	7.50
Rubber gloves: Panda. Orange. M	small box	12.00	1.50	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	7.50
Rubber gloves: Panda. Orange. S	small box	12.00	1.50	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	7.50
Rubber gloves: Panda. Goose. 7.5. Pink	small box	12.00	1.40	14.50	34.00	10.00	493.00	4,930.00	4.00	19720	5.60
Rubber gloves: Panda. Goose. 8.5. Pink	small box	12.00	1.40	14.50	34.00	10.00	493.00	4,930.00	4.00	19720	5.60
Rubber gloves: Sun. Orange. L	small box	12.00	1.00	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	5.00
Rubber gloves: Sun. Orange. M	small box	12.00	1.00	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	5.00
Rubber gloves: Sun. Orange. S	small box	12.00	1.00	14.50	36.00	10.00	522.00	5,220.00	5.00	26100	5.00
Rubber gloves: PVC. White. M	carton	1,000.00	16.00	27.00	58.00	32.00	1,566.00	50,112.00	1.00	50112	16.00
Doctor gloves: L	carton	1,000.00	8.00	27.00	38.00	25.00	1,026.00	25,650.00	1.00	25650	8.00
Doctor gloves: M	carton	1,000.00	8.00	27.00	38.00	25.00	1,026.00	25,650.00	1.00	25650	8.00
Doctor gloves: S	carton	1,000.00	8.00	27.00	38.00	25.00	1,026.00	25,650.00	1.00	25650	8.00
Wall hooker 1x3	carton	160.00	7.50	35.00	47.00	29.00	1,645.00	47,705.00	1.00	47705	7.50
Wall hooker 1x8	carton	200.00	9.00	36.00	36.00	29.00	1,296.00	37,584.00	1.00	37584	9.00
Wall hooker Fancy	carton	720.00	12.00	42.00	49.00	49.00	2,058.00	100,842.00	1.00	100842	12.00
Wall hooker 3 in a row	bundle	60.00	3.70	24.00	24.00	30.00	576.00	17,280.00	1.00	17280	3.70
Wall hooker 4 in a row	bundle	60.00	5.40	23.50	33.00	30.00	775.50	23,265.00	1.00	23265	5.40
Wall hooker 5 in a row	bundle	60.00	6.00	24.00	24.00	30.00	576.00	17,280.00	1.00	17280	6.00
Nipple: Akasen L	carton	288.00	4.10	27.00	35.00	28.00	945.00	26,460.00	1.00	26460	4.10
Nipple: Akasen M	carton	288.00	4.10	27.00	35.00	28.00	945.00	26,460.00	1.00	26460	4.10
Nipple: Akasen S	carton	288.00	4.10	27.00	35.00	28.00	945.00	26,460.00	1.00	26460	4.10
Nipple: Kiki L	carton	288.00	4.50	27.00	51.00	19.00	1,377.00	26,163.00	1.00	26163	4.50
Nipple: Kiki M	carton	288.00	4.50	27.00	51.00	19.00	1,377.00	26,163.00	1.00	26163	4.50
Nipple: Kiki S	carton	288.00	4.50	27.00	51.00	19.00	1,377.00	26,163.00	1.00	26163	4.50
Nipple: Pegen. L	small parcel	12.00	0.20	9.00	12.00	8.00	108.00	864.00	12.00	10368	2.40
Nipple: Pegen. M	small parcel	12.00	0.20	9.00	12.00	8.00	108.00	864.00	12.00	10368	2.40
Nipple: Pegen. S	small parcel	12.00	0.20	9.00	12.00	8.00	108.00	864.00	12.00	10368	2.40
Toothpick 1x10	carton	30.00	21.00	33.00	35.00	35.00	1,155.00	40,425.00	1.00	40425	21.00
Toothpick 2in1	carton	240.00	12.00	30.00	39.00	44.00	1,170.00	51,480.00	1.00	51480	12.00
Toothpick: Bandang. Medium	carton	360.00	16.00	33.50	37.50	38.00	1,256.25	47,737.50	1.00	47737.5	16.00
Toothpick: Kilo	carton	40.00	20.00	28.00	43.00	38.00	1,204.00	45,752.00	1.00	45752	20.00
Toothpick: Bamboo. Medium	carton	192.00	9.50	25.00	34.00	28.00	850.00	23,800.00	1.00	23800	9.50

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Toothpick Bamboo, Small	carton	300.00	12.00	25.00	33.00	29.00	825.00	23,925.00	1.00	23925	12.00
Toothpick Bamboo, Large	carton	120.00	6.50	25.00	33.00	29.00	825.00	23,925.00	1.00	23925	6.50
Shoe rubber G2-1	Small box	48.00	0.70	10.00	20.00	17.00	200.00	3,400.00	5.00	17000	3.50
Shoe rubber G2-4	Small box	48.00	0.70	10.00	20.00	17.00	200.00	3,400.00	5.00	17000	3.50
Shoe rubber G3-1	Small box	48.00	0.80	10.00	20.00	17.00	200.00	3,400.00	5.00	17000	4.00
Shoe rubber G3-4	Small box	48.00	0.70	10.00	20.00	17.00	200.00	3,400.00	5.00	17000	3.50
Shoe supporter Man, 10 Lgs	carton	120.00	6.20	35.00	45.00	24.00	1,575.00	37,800.00	1.00	37800	6.20
Shoe supporter Lady, 10 Lgs	carton	120.00	6.20	35.00	45.00	24.00	1,575.00	37,800.00	1.00	37800	6.20
Mirror with Swinger	parcel	144.00	18.00	36.00	46.00	40.00	1,656.00	66,240.00	1.00	66240	18.00
Mirror with Plastic frame	bundle	24.00	5.30	37.00	38.00	20.00	1,406.00	28,120.00	1.00	28120	5.30
Mirror bath room	carton	60.00	6.20	21.00	66.00	27.00	1,386.00	37,422.00	1.00	37422	6.20
Mirror Flower 10x14 .hang	small box	12.00	8.00	16.00	37.00	27.00	592.00	15,984.00	1.00	15984	8.00
Mirror Flower 12x16 .hang	small box	12.00	9.50	16.00	42.00	32.00	672.00	21,504.00	1.00	21504	9.50
Mirror Flower 14x20 .hang	small box	12.00	15.00	15.00	53.00	37.00	795.00	29,415.00	1.00	29415	15.00
Mirror Flower 7x10 .hang	small box	12.00	5.00	15.00	27.00	19.00	405.00	7,695.00	1.00	7695	5.00
Mirror Flower 8x12 .hang	small box	12.00	6.50	16.00	32.00	21.50	512.00	11,008.00	1.00	11008	6.50
Mirror Flower No 10	small box	12.00	4.70	14.50	25.00	18.00	362.50	6,525.00	5.00	32625	23.50
Mirror Flower No 12	small box	12.00	5.50	14.50	26.50	19.00	384.25	7,300.75	1.00	7300.75	5.50
Mirror Flower No 6	small box	12.00	1.80	14.50	18.00	16.00	261.00	2,610.00	5.00	13050	9.00
Mirror Flower No 7	small box	12.00	2.40	14.50	18.00	13.50	261.00	3,523.50	5.00	17617.5	12.00
Mirror Flower No 8	small box	12.00	2.80	14.50	20.00	14.00	290.00	4,060.00	5.00	20300	14.00
Mirror Flower No 9	small box	12.00	3.40	14.50	21.00	15.50	304.50	4,719.75	5.00	23598.75	17.00
Mirror Flower No 4	bundle	120.00	8.00	23.00	38.00	12.00	874.00	10,488.00	1.00	10488	8.00
Mirror Flower No.5	bundle	120.00	11.00	23.00	45.00	13.00	1,035.00	13,455.00	1.00	13455	11.00
Bottle opener 200	parcel	12.00	0.70	13.00	20.00	3.00	260.00	780.00	10.00	7800	7.00
Bottle opener 900	parcel	12.00	0.70	13.00	20.00	3.00	260.00	780.00	10.00	7800	7.00
Wine opener 800	parcel	12.00	0.90	11.00	20.00	6.00	220.00	1,320.00	10.00	13200	9.00
Can opener 5 rings	bundle	60.00	3.60	11.00	20.00	34.00	220.00	7,480.00	1.00	7480	3.60
Bottle opener A80	parcel	12.00	1.00	10.50	20.00	7.00	210.00	1,470.00	5.00	7350	5.00
Bottle opener 777	small box	12.00	1.20	17.00	23.00	5.00	391.00	1,955.00	5.00	9775	6.00
Nail cutter 129	carton	600.00	26.00	26.00	50.00	20.00	1,300.00	26,000.00	1.00	26000	26.00
Nail cutter 211	small box	12.00	0.60	8.50	10.00	3.00	85.00	255.00	20.00	5100	12.00
Nail cutter 309	carton	1,200.00	23.00	36.00	40.00	20.00	1,440.00	28,800.00	1.00	28800	23.00
Nail cutter 600	carton	1,200.00	28.00	39.00	40.00	18.00	1,560.00	28,080.00	1.00	28080	28.00
Nail cutter 602	small box	24.00	0.60	8.50	10.00	3.00	85.00	255.00	20.00	5100	12.00
Nail cutter 777, 211	small box	12.00	0.50	8.00	10.00	2.50	80.00	200.00	6.00	1200	3.00
Nail cutter 999, Small	small box	12.00	0.20	6.00	7.50	2.50	45.00	112.50	10.00	1125	2.00
Nail cutter 999, Big	small box	12.00	0.50	8.00	9.00	3.00	72.00	216.00	10.00	2160	5.00
Shoe rope 24 inches, White	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12100	4.90
Shoe rope 24 inches, Black	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12100	4.90
Shoe rope 24 inches, Brown	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12100	4.90
Shoe rope 24 inches, Dark brown	parcel	120.00	4.90	22.00	55.00	10.00	1,210.00	12,100.00	1.00	12100	4.90
Shoe rope 36 inches, White	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19500	3.30
Shoe rope 36 inches, Black	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19500	3.30
Shoe rope 36 inches, Brown	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19500	3.30
Shoe rope 36 inches, Dark brown	parcel	120.00	3.30	25.00	65.00	12.00	1,625.00	19,500.00	1.00	19500	3.30
Shoe rope 24 inches, White, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22080	5.00
Shoe rope 24 inches, Black, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22080	5.00
Shoe rope 24 inches, Brown, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22080	5.00
Shoe rope 24 inches, Dark brown, Big	parcel	60.00	5.00	23.00	32.00	30.00	736.00	22,080.00	1.00	22080	5.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Width(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Shoe rope: 36 inches, White, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31360	8.00
Shoe rope: 36 inches, Black, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31360	8.00
Shoe rope: 36 inches, Brown, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31360	8.00
Shoe rope: 36 inches, Dark brown, Big	parcel	60.00	8.00	28.00	28.00	40.00	784.00	31,360.00	1.00	31360	8.00
Shoe rope: 42 inches, White, Big	parcel	60.00	6.00	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.00
Shoe rope: 42 inches, Black, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.90
Shoe rope: 42 inches, Brown, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.90
Shoe rope: 42 inches, Dark brown, Big	parcel	60.00	6.90	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.90
Shoe rope: 60 inches, White, Big	parcel	60.00	11.00	30.00	30.00	66.00	900.00	59,400.00	1.00	59400	11.00
Shoe rope: 60 inches, Black, Big	parcel	60.00	11.00	30.00	30.00	66.00	900.00	59,400.00	1.00	59400	11.00
Shoe rope: 60 inches, Brown, Big	parcel	60.00	11.00	30.00	30.00	66.00	900.00	59,400.00	1.00	59400	11.00
Shoe rope: 24 inches, White, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19140	3.30
Shoe rope: 24 inches, Black, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19140	3.30
Shoe rope: 24 inches, Brown, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19140	3.30
Shoe rope: 24 inches, Dark brown, Flat	parcel	60.00	3.30	20.00	33.00	29.00	660.00	19,140.00	1.00	19140	3.30
Shoe rope: 36 inches, White, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36000	4.00
Shoe rope: 36 inches, Black, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36000	4.00
Shoe rope: 36 inches, Brown, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36000	4.00
Shoe rope: 36 inches, Dark brown, Flat	parcel	60.00	4.00	30.00	30.00	40.00	900.00	36,000.00	1.00	36000	4.00
Shoe rope: 42 inches, White, Flat	parcel	60.00	6.00	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.00
Shoe rope: 42 inches, Mix, Flat	parcel	60.00	6.00	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.00
Shoe rope: 42 inches, Black, Flat	parcel	60.00	6.00	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.00
Shoe rope: 42 inches, Brown, Flat	parcel	60.00	6.00	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.00
Shoe rope: 42 inches, Dark brown, Flat	parcel	60.00	6.00	29.00	29.00	46.00	841.00	38,686.00	1.00	38686	6.00
Shoe rope: 48 inches, White, Flat	parcel	60.00	8.30	30.00	30.00	56.00	900.00	50,400.00	1.00	50400	8.30
Shoe rope: 48 inches, Black, Flat	parcel	60.00	8.30	30.00	30.00	56.00	900.00	50,400.00	1.00	50400	8.30
Shoe rope: 48 inches, Brown, Flat	parcel	60.00	8.30	30.00	30.00	56.00	900.00	50,400.00	1.00	50400	8.30
Shoe rope: 60 inches, White, Flat	parcel	60.00	9.00	30.00	30.00	63.00	900.00	56,700.00	1.00	56700	9.00
Shoe rope: 60 inches, Black, Flat	parcel	60.00	9.00	30.00	30.00	63.00	900.00	56,700.00	1.00	56700	9.00
Shoe rope: 60 inches, Brown, Flat	parcel	60.00	9.00	30.00	30.00	63.00	900.00	56,700.00	1.00	56700	9.00
Padlock: Solo 30mm No 84	small box	12.00	1.30	7.50	13.00	6.00	97.50	585.00	5.00	2925	6.50
Padlock: Solo 50mm	small box	6.00	1.80	8.50	13.00	5.50	110.50	607.75	5.00	3018.75	9.00
Padlock: black, long 32mm	small box	6.00	0.70	9.50	13.00	4.00	123.50	494.00	10.00	4940	7.00
Padlock: black, long 38mm	small box	6.00	1.00	12.00	13.00	4.50	156.00	702.00	5.00	3510	5.00
Padlock: black, long 50mm	small box	6.00	2.20	13.00	16.00	5.00	208.00	1,040.00	5.00	5200	11.00
Padlock: brass, long 32mm	small box	6.00	0.70	10.00	13.00	4.00	130.00	520.00	5.00	2600	3.50
Padlock: brass, short 32mm	small box	12.00	0.60	6.00	13.00	4.00	78.00	312.00	10.00	3120	6.00
Padlock: brass, long 38mm	small box	6.00	1.00	11.50	13.00	4.50	149.50	672.75	5.00	4031.25	6.00
Padlock: gold, short 50mm	small box	6.00	1.60	9.00	16.00	5.50	144.00	792.00	5.00	3960	8.00
Padlock: black, short 32mm	small box	6.00	0.60	6.00	13.00	4.00	78.00	312.00	10.00	3120	6.00
Padlock: gold, short 38mm	small box	6.00	1.00	7.00	13.00	4.50	91.00	409.50	15.00	6142.5	15.00
Padlock: gold, long 50mm	small box	6.00	1.70	13.00	16.00	6.00	208.00	1,248.00	5.00	6240	8.50
Padlock: Solo 35mm, pack	small box	12.00	1.50	9.00	13.00	6.00	117.00	702.00	5.00	3510	7.50
Padlock: Solo 25mm, pack	small box	6.00	0.30	5.00	11.00	3.00	55.00	165.00	10.00	1650	3.00
Padlock: Wolf 20mm	small box	12.00	0.40	5.00	9.00	3.00	45.00	135.00	10.00	1350	4.00
Padlock: Wolf 25mm	small box	12.00	0.40	6.00	9.50	5.00	57.00	285.00	10.00	2850	4.00
Padlock: Wolf 30mm	small box	12.00	0.50	6.00	9.00	5.00	54.00	270.00	10.00	2700	5.00
Padlock: black, short 50mm 999	small box	6.00	2.00	9.00	15.00	6.00	135.00	810.00	5.00	4050	10.00
Padlock: black, short 38 mm	small box	6.00	1.00	10.00	13.00	4.50	130.00	585.00	10.00	5850	10.00
Padlock: Wolf 40mm	small box	12.00	0.80	8.50	11.50	6.50	89.25	580.13	5.00	2900.625	4.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Padlock Wolf 50mm	small box	12.00	1.40	10.00	11.00	9.00	110.00	990.00	5.00	4950	7.00
Padlock brass short 20 mm	small box	12.00	0.40	5.00	13.00	3.00	65.00	195.00	10.00	1950	4.00
Padlock Solo 40mm pack	small box	12.00	2.00	9.00	13.00	7.00	117.00	819.00	5.00	4095	10.00
Padlock black short 25mm 999	small box	6.00	0.40	5.00	10.00	3.50	50.00	175.00	10.00	1750	4.00
Padlock gold long 25mm	small box	12.00	0.80	8.00	9.50	6.00	76.00	456.00	5.00	2280	4.00
Padlock black short 32mm 999	carton	240.00	20.00	27.00	31.00	15.50	837.00	12,973.50	1.00	12973.5	20.00
Padlock black long 38mm	wooden crate	180.00	20.00	37.00	48.00	16.00	1,776.00	28,416.00	1.00	28416	20.00
Padlock black short 38mm 999	carton	240.00	20.00	27.00	45.00	23.00	1,215.00	27,945.00	1.00	27945	20.00
Padlock black short 50mm 5 rings	carton	120.00	21.00	28.00	35.00	18.00	980.00	17,640.00	1.00	17640	21.00
Padlock black short 50mm 5 rings	carton	60.00	20.00	31.00	31.00	20.00	961.00	19,220.00	1.00	19220	20.00
Padlock gold long 32mm	wooden crate	240.00	21.00	41.00	41.00	19.00	1,681.00	31,939.00	1.00	31939	21.00
Padlock gold long 50mm	wooden crate	600.00	20.00	27.00	45.00	18.00	1,215.00	21,870.00	1.00	21870	20.00
Padlock gold short 25mm	wooden crate	240.00	21.00	31.00	52.00	16.00	1,612.00	25,792.00	1.00	25792	21.00
Padlock gold short 32mm	wooden crate	240.00	21.00	41.00	41.00	19.00	1,681.00	31,939.00	1.00	31939	21.00
Padlock gold short 38mm	wooden crate	240.00	20.00	27.00	43.00	18.00	1,161.00	20,898.00	1.00	20898	20.00
Padlock gold short 50mm	carton	60.00	21.00	28.00	35.00	18.00	980.00	17,640.00	1.00	17640	21.00
Padlock gold long 38mm 5 rings	wooden crate	180.00	20.00	37.00	48.00	16.00	1,776.00	28,416.00	1.00	28416	20.00
Padlock World 50mm	wooden crate	120.00	21.00	29.00	40.00	20.00	1,160.00	23,200.00	1.00	23200	21.00
Padlock Wolf 20mm	carton	1,200.00	28.00	25.50	39.00	19.50	994.50	19,392.75	1.00	19392.75	28.00
Padlock Wolf 25mm	carton	600.00	21.00	26.00	31.00	21.00	806.00	16,926.00	1.00	16926	21.00
Padlock Wolf 30mm	carton	600.00	27.00	28.50	35.00	22.00	997.50	21,945.00	1.00	21945	27.00
Padlock Wolf 40mm	carton	240.00	21.00	22.00	36.00	19.00	792.00	15,048.00	1.00	15048	21.00
Padlock Wolf 50mm	carton	120.00	25.00	22.50	39.50	11.50	888.75	10,220.63	1.00	10220.625	25.00
Padlock VITA long 40mm	small box	12.00	3.60	15.00	23.00	11.00	345.00	3,795.00	1.00	3795	3.60
Padlock VITA short 40mm	small box	12.00	3.80	15.00	23.00	11.00	345.00	3,795.00	1.00	3795	3.80
Padlock VITA long 45mm	small box	12.00	4.40	15.00	23.00	11.00	345.00	3,795.00	1.00	3795	4.40
Padlock VITA short 45mm	small box	12.00	4.20	15.00	23.00	11.00	345.00	3,795.00	1.00	3795	4.20
Padlock VITA long 50mm	small box	12.00	5.20	15.00	23.00	11.00	345.00	3,795.00	1.00	3795	5.20
Padlock VITA short 50mm	small box	12.00	4.80	15.00	23.00	11.00	345.00	3,795.00	1.00	3795	4.80
Padlock Solo 35mm pack	carton	12.00	3.20	21.50	30.00	14.00	645.00	9,030.00	1.00	9030	3.20
Padlock Solo 40mm pack	carton	12.00	3.40	21.50	30.00	14.00	645.00	9,030.00	1.00	9030	3.40
Padlock Solo 45mm pack	carton	12.00	4.00	21.50	30.00	14.00	645.00	9,030.00	1.00	9030	4.00
Padlock Solo 50mm pack	carton	12.00	3.60	21.50	30.00	14.00	645.00	9,030.00	1.00	9030	3.60
Padlock Solo 55mm pack	carton	12.00	3.80	21.50	30.00	14.00	645.00	9,030.00	1.00	9030	3.80
U-lock: 3 pieces	small box	12.00	2.00	10.00	16.00	5.00	160.00	800.00	5.00	4000	10.00
U-lock: Harry Master 115	small box	24.00	2.70	13.50	22.00	4.50	297.00	1,336.50	1.00	1336.5	2.70
U-lock: Harry Master 55	small box	24.00	0.50	6.50	17.50	3.00	113.75	341.25	1.00	341.25	0.50
U-lock: Harry Master 75	small box	24.00	0.90	9.00	19.00	3.50	171.00	598.50	1.00	598.5	0.90
U-lock: Harry Master 95	small box	24.00	1.60	11.50	22.50	3.50	258.75	905.63	1.00	905.625	1.60
Drawer lock	small box	12.00	1.10	11.00	13.00	6.00	143.00	858.00	5.00	4290	5.50
Hot water pouch: stripe pattern small	carton	300.00	14.00	26.00	52.00	43.00	1,352.00	58,136.00	1.00	58136	14.00
Hot water pouch: small	carton	200.00	15.00	38.00	50.00	25.00	1,900.00	47,500.00	1.00	47500	15.00
Hot water pouch: Big Kangaroo	carton	24.00	14.40	30.00	36.00	26.00	1,080.00	28,080.00	1.00	28080	14.40
Rubber binder: small	bundle	20.00	10.00	35.00	33.00	12.00	1,155.00	13,860.00	1.00	13860	10.00
Rubber binder: big	bundle	20.00	10.00	35.00	33.00	12.00	1,155.00	13,860.00	1.00	13860	10.00
Thread: Sailing ship White	parcel	72.00	2.10	22.00	19.50	17.00	429.00	7,293.00	2.00	14586	4.20
Thread: Sailing ship Mix	parcel	72.00	2.10	22.00	19.50	17.00	429.00	7,293.00	2.00	14586	4.20
Thread: Sailing ship Black	parcel	72.00	2.10	22.00	19.50	17.00	429.00	7,293.00	2.00	14586	4.20
Thread: 10 baht set. Mix	bundle	120.00	3.00	20.00	26.00	23.00	520.00	11,960.00	1.00	11960	3.00
Thread: 10 baht set. White-Black	bundle	120.00	3.00	24.00	24.00	38.50	576.00	22,176.00	1.00	22176	3.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Thread Pink set	carton	360.00	25.00	57.00	73.00	41.00	4,161.00	170,601.00	1.00	170601	25.00
Thread A Mix	parcel	1,440.00	5.00	14.00	14.00	60.00	196.00	11,760.00	1.00	11760	5.00
Thread A White	parcel	1,440.00	5.00	14.00	14.00	60.00	196.00	11,760.00	1.00	11760	5.00
Thread A White-Black	parcel	1,440.00	5.00	14.00	14.00	60.00	196.00	11,760.00	1.00	11760	5.00
Thread A Dark gray	parcel	1,440.00	5.00	14.00	14.00	60.00	196.00	11,760.00	1.00	11760	5.00
Thread A Black	parcel	1,440.00	5.00	14.00	14.00	60.00	196.00	11,760.00	1.00	11760	5.00
Thread 1 baht, YNC White	bundle	1,440.00	5.60	23.00	26.00	52.50	598.00	31,395.00	1.00	31395	5.60
Thread 1 baht YNC Dark gray	bundle	1,440.00	5.60	23.00	26.00	52.50	598.00	31,395.00	1.00	31395	5.60
Thread 1 baht YNC Mix	bundle	1,440.00	5.60	23.00	26.00	52.50	598.00	31,395.00	1.00	31395	5.60
Thread 1 baht, YNC Black	bundle	1,440.00	5.60	23.00	26.00	52.50	598.00	31,395.00	1.00	31395	5.60
Thread 1 baht, YNC Yellow	bundle	1,440.00	5.60	23.00	26.00	52.50	598.00	31,395.00	1.00	31395	5.60
Brooch tiny White	bundle	10.00	1.30	13.00	16.50	22.00	214.50	4,719.00	2.00	9438	2.60
Brooch tiny Gold	bundle	10.00	1.30	13.00	16.50	22.00	214.50	4,719.00	2.00	9438	2.60
small box	small parcel	1.00	0.30	8.50	14.00	4.00	119.00	476.00	10.00	4760	3.00
small box	small parcel	1.00	0.40	9.00	15.00	4.50	135.00	607.50	10.00	6075	4.00
small box	small parcel	1.00	0.50	9.50	17.50	5.00	166.25	831.25	10.00	8312.5	5.00
small box	small parcel	1.00	0.40	9.00	15.00	4.00	135.00	540.00	10.00	5400	4.00
small box	small parcel	1.00	0.70	11.00	19.00	5.00	190.00	950.00	10.00	9500	7.00
small box	small parcel	1.00	0.40	10.00	13.00	4.00	130.00	520.00	10.00	5200	4.00
small box	small parcel	1.00	0.60	11.00	13.00	6.00	143.00	858.00	10.00	8580	6.00
small box	small parcel	1.00	0.50	10.00	13.00	5.00	130.00	650.00	10.00	6500	5.00
Brooch in Pack	carton	1,000.00	20.00	36.60	28.50	36.00	1,043.10	37,551.60	1.00	37551.6	20.00
Brooch grade A	bundle	720.00	2.60	18.00	31.00	40.00	558.00	22,320.00	1.00	22320	2.60
Brooch Lucky	bundle	30.00	3.80	13.50	19.00	49.00	256.50	12,568.50	1.00	12568.5	3.80
Cup 204 with Handle	carton	72.00	2.90	27.50	32.00	50.50	880.00	44,440.00	1.00	44440	2.90
Cup 205 with Handle	carton	72.00	3.10	30.50	49.00	27.50	1,494.50	41,098.75	1.00	41098.75	3.10
Cup 45 Mitsu with Handle	parcel	72.00	1.80	28.00	52.00	20.00	1,456.00	29,120.00	5.00	145600	9.00
Cup 639 Sakura, stripe with Cover	carton	72.00	4.50	28.00	26.00	42.00	728.00	30,576.00	1.00	30576	4.50
Cup 404 with Handle	parcel	144.00	5.20	30.00	45.00	56.00	1,350.00	75,600.00	1.00	75600	5.20
Cup 002 with Handle	parcel	288.00	6.00	32.00	46.00	65.00	1,472.00	95,680.00	1.00	95680	6.00
Cup 004 with Handle, Canoon pattern	parcel	144.00	5.70	40.00	45.00	30.00	1,800.00	54,000.00	1.00	54000	5.70
Cup 514, White pattern	parcel	144.00	6.20	49.00	50.00	31.00	2,450.00	75,950.00	1.00	75950	6.20
Cup 514, Transparent pattern	parcel	144.00	6.20	49.00	50.00	31.00	2,450.00	75,950.00	1.00	75950	6.20
Cup 688, Sakura, small	parcel	144.00	5.70	40.00	40.00	37.00	1,600.00	59,200.00	1.00	59200	5.70
Cup, Transparent, pineapple pattern	carton	96.00	6.40	34.00	48.00	43.00	1,632.00	70,176.00	1.00	70176	6.40
Plastic bucket, Black 16	bundle	12.00	6.00	32.00	32.00	52.00	1,024.00	53,248.00	1.00	53248	6.00
Plastic bucket, Black 18	bundle	12.00	8.00	33.00	35.00	60.00	1,089.00	65,340.00	1.00	65340	8.00
Plastic bucket, 3.5	bundle	12.00	4.80	36.00	36.00	51.00	1,296.00	66,096.00	1.00	66096	4.80
Plastic bucket, Yellow 2.5	bundle	12.00	3.50	27.00	27.00	52.00	729.00	37,908.00	1.00	37908	3.50
Plastic bucket, Yellow 3.5	bundle	12.00	4.20	29.00	29.00	53.00	841.00	44,573.00	1.00	44573	4.20
Plastic bucket, Yellow 4.5	bundle	12.00	6.00	31.00	31.00	62.00	961.00	59,582.00	1.00	59582	6.00
Fabric cleaning Brush Nylon, flat iron china	carton	144.00	11.00	30.00	50.00	39.00	1,500.00	58,500.00	1.00	58500	11.00
Brush Nylon, Color	bundle	101.00	4.60	25.00	55.00	33.00	1,375.00	45,375.00	1.00	45375	4.60
Brush Nylon, Hama	carton	12.00	3.20	25.00	33.00	17.00	825.00	14,025.00	1.00	14025	3.20
Fabric cleaning Brush Eastman 2 colors	carton	120.00	15.00	25.00	38.00	52.00	950.00	49,400.00	1.00	49400	15.00
Fabric cleaning Brush Nylon, flat iron	carton	24.00	4.00	29.00	40.00	16.50	1,160.00	19,140.00	1.00	19140	4.00
Fabric cleaning Brush Eastman Bone	carton	144.00	14.40	34.00	48.00	35.00	1,632.00	57,120.00	1.00	57120	14.40
Fabric cleaning Brush Rainbow, Samor	carton	240.00	22.00	33.00	47.00	52.00	1,551.00	80,652.00	1.00	80652	22.00
Brush Rose, Milk color	bundle(box)	60.00	8.00	17.00	25.00	58.00	425.00	24,650.00	1.00	24650	8.00
Brush Rose, Transparent color	bundle(box)	60.00	4.40	12.00	23.50	43.00	282.00	12,126.00	1.00	12126	4.40



Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Fabric cleaning Brush:003	carton	72.00	5.30	36.00	36.00	19.00	1,296.00	24,624.00	1.00	24624	5.30
Fabric cleaning Brush:707	carton	144.00	5.20	31.00	33.00	26.00	1,023.00	26,598.00	1.00	26598	5.20
Fabric cleaning Brush:JCJ	carton	72.00	4.00	19.00	33.00	30.00	627.00	18,810.00	1.00	18810	4.00
Fabric cleaning Brush:031	carton	72.00	4.80	17.10	39.60	33.00	677.16	22,346.28	1.00	22346.28	4.80
Fabric cleaning Brush:Nylon 888	bundle	60.00	5.50	15.50	23.50	50.00	364.25	18,212.50	1.00	18212.5	5.50
Fabric cleaning Brush flat iron shape brass	carton	24.00	5.00	29.00	38.00	16.00	1,102.00	17,632.00	1.00	17632	5.00
Fabric cleaning Brush:Samor. White fiber	carton	144.00	17.00	34.00	37.00	49.00	1,258.00	61,642.00	1.00	61642	17.00
Brush: Black meal of coconut	bundle	100.00	4.10	25.00	56.00	40.00	1,400.00	56,000.00	1.00	56000	4.10
Brush: Brown meal of coconut	bundle	100.00	4.10	25.00	56.00	40.00	1,400.00	56,000.00	1.00	56000	4.10
Brush: Rose Brass	carton	12.00	4.50	25.00	25.00	20.00	625.00	12,500.00	1.00	12500	4.50
Wooden Brush: Rose: Clorful fiber	bundle	60.00	6.00	16.00	23.00	51.00	368.00	18,768.00	1.00	18768	6.00
Pan cleaning brush: meal of coconut 2014	carton	60.00	3.80	32.00	44.50	19.00	1,424.00	27,056.00	1.00	27056	3.80
Brush: Brass 5 rows	bundle(box)	60.00	4.90	12.50	25.00	30.00	312.50	9,375.00	1.00	9375	4.90
Brush: Brass 6 rows	bundle(box)	60.00	5.20	13.00	25.00	30.00	325.00	9,750.00	1.00	9750	5.20
Brush: Brass 7 rows	bundle(box)	60.00	5.70	13.00	25.00	30.00	325.00	9,750.00	1.00	9750	5.70
Brush: Brass:3 Roses	bundle(box)	30.00	6.50	16.00	23.00	54.00	368.00	19,872.00	1.00	19872	6.50
Brush: Brass:Tiger	bundle(box)	48.00	2.60	22.00	22.00	69.00	484.00	33,396.00	1.00	33396	2.60
Brush: Brass:Coin	bundle(box)	48.00	2.60	22.00	22.00	69.00	484.00	33,396.00	1.00	33396	2.60
Floor cleaning brush: Nylon: Rose	carton	12.00	4.40	24.00	40.00	14.00	960.00	13,440.00	1.00	13440	4.40
Brush: Brass:Hama	carton	12.00	3.90	25.00	33.00	17.00	825.00	14,025.00	1.00	14025	3.90
Bath room cleaning brush: Sack	bundle	60.00	5.00	60.00	60.00	15.00	3,600.00	54,000.00	1.00	54000	5.00
Bath room cleaning brush: Hama	carton	120.00	9.00	35.00	66.00	41.00	2,310.00	94,710.00	1.00	94710	9.00
Bath room cleaning brush: Fish	carton	120.00	10.00	45.00	55.00	43.00	2,475.00	106,425.00	1.00	106425	10.00
Bath room cleaning brush	carton	12.00	1.80	33.00	49.00	19.00	1,617.00	30,723.00	1.00	30723	1.80
Shoe brush: Herping	carton	300.00	20.00	23.50	64.00	44.00	1,504.00	66,176.00	1.00	66176	20.00
Bottle cleaning brush: B1 with sponge	bundle	60.00	3.10	20.00	15.00	74.00	300.00	22,200.00	1.00	22200	3.10
Bottle cleaning brush: Rabbit	bundle	60.00	3.00	20.00	74.00	15.00	1,480.00	22,200.00	1.00	22200	3.00
Bottle cleaning brush: Twin head	bundle	60.00	3.10	20.00	34.00	78.00	680.00	53,040.00	1.00	53040	3.10
Broom: water broom	carton	12.00	4.00	33.00	96.00	18.00	3,168.00	57,024.00	1.00	57024	4.00
Broom: water Samor	carton	24.00	12.00	26.00	125.00	17.00	3,250.00	55,250.00	1.00	55250	12.00
trash dipper: grade A	bundle	72.00	6.80	20.00	48.00	33.00	960.00	31,680.00	1.00	31680	6.80
trash dipper: small size 345	carton	36.00	5.20	32.00	50.00	23.00	1,600.00	36,800.00	1.00	36800	5.20
trash dipper with handle slot: grade A	carton	12.00	3.70	42.00	67.00	13.00	2,814.00	36,582.00	1.00	36582	3.70
Fabric Hanger: Big flowers	carton	48.00	4.50	56.00	55.00	43.00	3,080.00	132,440.00	1.00	132440	4.50
Fabric Hanger: Green flowers	carton	72.00	4.70	29.00	63.00	43.00	1,827.00	78,561.00	1.00	78561	4.70
Fabric Hanger: Daily	carton	48.00	3.30	52.00	57.00	56.00	2,964.00	165,984.00	1.00	165984	3.30
Fabric Hanger: Big Box	carton	48.00	7.00	49.00	57.00	44.00	2,793.00	122,892.00	1.00	122892	7.00
Shoes hanger	carton	60.00	7.00	36.00	50.00	37.00	1,800.00	66,600.00	1.00	66600	7.00
Clothes hanger: Umbrella	carton	24.00	2.80	25.00	44.00	23.00	1,100.00	25,300.00	1.00	25300	2.80
Clothes hanger: 222 ( wire)	carton	144.00	9.00	22.00	67.00	47.00	1,474.00	69,278.00	1.00	69278	9.00
Clothes hanger: 222: plastic	carton	144.00	5.40	34.00	34.00	41.00	1,156.00	47,396.00	1.00	47396	5.40
Clothes hanger: 3 rings	carton	144.00	8.00	44.00	46.00	22.00	2,024.00	44,528.00	1.00	44528	8.00
Clothes hanger: 5 rings	carton	144.00	4.90	41.00	44.00	21.00	1,804.00	37,884.00	1.00	37884	4.90
Clothes hanger: No 799	carton	144.00	10.00	34.00	34.00	66.00	1,156.00	76,296.00	1.00	76296	10.00
Clothes hanger: PF221	carton	144.00	3.20	25.00	25.00	40.00	625.00	25,000.00	1.00	25000	3.20
Clothes hanger: Round Shape	carton	12.00	3.20	40.00	56.00	37.00	2,240.00	82,880.00	1.00	82880	3.20
Clothes hanger: C1	carton	144.00	3.00	26.50	26.50	37.00	702.25	25,983.25	1.00	25983.25	3.00
Clothes hanger: 5 holes	carton	120.00	5.00	39.50	53.00	26.00	2,093.50	54,431.00	1.00	54431	5.00
Clothes hanger: 599: Black	carton	144.00	9.00	36.00	38.00	60.00	1,368.00	82,080.00	1.00	82080	9.00
Clothes hanger: red heart-shaped: 55	carton	144.00	3.60	25.50	41.50	21.00	1,058.25	22,223.25	1.00	22223.25	3.60

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Width(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Clothes hanger red heart-shaped. 99	carton	72.00	4.60	40.00	55.00	44.00	2,200.00	96,800.00	2.00	193600	9.20
Clothes hanger Square Twin	carton	12.00	3.70	40.00	55.00	38.00	2,200.00	83,600.00	1.00	83600	3.70
Clothes hanger Square Mini	carton	48.00	3.00	40.00	51.00	25.00	2,040.00	51,000.00	1.00	51000	3.00
Clothes hanger Aluminium. 639	carton	72.00	4.70	43.00	42.00	29.00	1,806.00	52,374.00	1.00	52374	4.70
Clothes hanger Aluminium. 646	carton	144.00	5.80	43.00	42.00	29.00	1,806.00	52,374.00	1.00	52374	5.80
Fabric pincher 16 pieces Plov	carton	36.00	4.00	28.00	51.00	23.00	868.00	19,964.00	1.00	19964	4.00
Fabric pincher 18 pieces. CS	carton	36.00	2.40	24.00	56.00	17.00	864.00	14,688.00	1.00	14688	2.40
Fabric pincher 18pieces. turbine	carton	36.00	2.60	24.00	56.00	17.00	864.00	14,688.00	1.00	14688	2.60
Fabric pincher 24 pieces. Put	carton	36.00	3.50	53.00	34.00	19.00	1,122.00	21,318.00	1.00	21318	3.50
Fabric pincher 30 pieces. CS	carton	36.00	3.90	35.00	40.00	16.00	1,400.00	22,400.00	1.00	22400	3.90
Fabric pincher 30 pieces. Put	carton	36.00	4.10	35.00	40.00	16.00	1,400.00	22,400.00	1.00	22400	4.10
Fabric pincher 18 pieces. round shape. Flower	carton	36.00	2.90	32.00	53.00	32.00	1,056.00	33,792.00	1.00	33792	2.90
Fabric pincher 18 pieces. round shape. Merry	carton	48.00	4.40	22.00	35.00	27.00	726.00	19,602.00	1.00	19602	4.40
Fabric pincher Japanese	carton	36.00	2.50	18.00	28.00	25.00	504.00	12,600.00	1.00	12600	2.50
Fabric pincher Wooden	carton	2,880.00	13.00	28.00	45.00	30.00	1,260.00	37,800.00	1.00	37800	13.00
Fabric pincher Big size	carton	36.00	3.00	24.00	29.00	26.00	696.00	18,096.00	1.00	18096	3.00
Shower cap cartoon pattern. small	bundle	300.00	6.80	30.00	35.00	30.00	1,050.00	31,500.00	1.00	31500	6.80
Shower cap cartoon pattern. big	bundle	300.00	8.00	30.00	40.00	30.00	1,200.00	36,000.00	1.00	36000	8.00
Shower cap finesse. small	bundle	360.00	5.50	25.00	45.00	25.00	1,125.00	28,125.00	1.00	28125	5.50
Shower cap finesse. big	bundle	360.00	9.00	26.00	65.00	18.00	1,690.00	30,420.00	1.00	30420	9.00
Shower cap small	bundle	360.00	6.00	25.00	50.00	25.00	1,250.00	31,250.00	1.00	31250	6.00
Shower cap big	bundle	360.00	10.00	25.00	50.00	25.00	1,250.00	31,250.00	1.00	31250	10.00
Toothpaste squeezer murky	parcel	120.00	5.50	23.00	50.00	18.00	1,150.00	20,700.00	1.00	20700	5.50
Toothpaste squeezer transparency	parcel	120.00	5.50	23.00	50.00	18.00	1,150.00	20,700.00	1.00	20700	5.50
Comb grade A No 801	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	1.00	22089.375	6.80
Comb grade A No 802	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	1.00	22089.375	6.80
Comb grade A No 803	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	1.00	22089.375	6.80
Comb grade A No 804	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	1.00	22089.375	6.80
Comb grade A No 805	bundle	432.00	6.80	22.50	25.50	38.50	573.75	22,089.38	1.00	22089.375	6.80
Comb grade A No 811A	bundle	720.00	5.40	15.00	25.00	53.00	375.00	19,875.00	1.00	19875	5.40
Comb Hair clipper. plastic	bundle	120.00	2.40	10.00	15.00	36.00	150.00	5,400.00	5.00	27000	12.00
Comb Hair clipper. stainless	bundle	120.00	3.00	10.00	15.00	36.00	150.00	5,400.00	2.00	16200	9.00
Cone No1	bundle	144.00	8.50	47.00	65.00	28.00	3,055.00	85,540.00	1.00	85540	8.50
Cone No2	bundle	144.00	4.50	37.00	59.00	26.00	2,183.00	56,758.00	1.00	56758	4.50
Cone No3	bundle	144.00	3.50	30.00	50.00	20.00	1,500.00	30,000.00	1.00	30000	3.50
Cone No4	bundle	144.00	2.00	46.00	125.00	16.00	5,750.00	92,000.00	1.00	92000	2.00
Cone No5	bundle	144.00	3.00	36.00	120.00	14.00	4,320.00	60,480.00	1.00	60480	3.00
Sauce bottle Orange	parcel	144.00	4.50	25.00	60.00	70.00	1,500.00	105,000.00	1.00	105000	4.50
Sauce bottle Transparency	parcel	144.00	4.50	25.00	60.00	70.00	1,500.00	105,000.00	1.00	105000	4.50
Milk bottle Kid. Chinese	carton	120.00	7.50	34.50	41.00	62.00	1,414.50	87,699.00	1.00	87699	7.50
Water bottle 558	carton	72.00	7.50	42.00	48.00	49.00	2,016.00	98,784.00	1.00	98784	7.50
Photo Album Medium size	bundle	12.00	3.80	8.00	24.00	37.00	192.00	7,104.00	1.00	7104	3.80
Photo Album Jumbo size	bundle	12.00	2.10	14.00	19.00	31.00	266.00	8,246.00	1.00	8246	2.10
Photo Album Small size	bundle	12.00	1.60	12.00	15.00	29.00	180.00	5,220.00	1.00	5220	1.60
Photo Album Big size	bundle	12.00	4.20	16.50	30.00	35.00	495.00	17,325.00	1.00	17325	4.20
Back scratching stick	carton	144.00	5.30	21.00	44.00	20.00	924.00	18,480.00	1.00	18480	5.30
Back cleaning brush Twin	carton	24.00	4.40	24.00	39.00	34.00	936.00	31,824.00	1.00	31824	4.40
Topknot of Pot's cover Medium	carton	600.00	25.00	35.00	65.00	45.00	2,275.00	102,375.00	1.00	102375	25.00
Topknot of Pot's cover Size	carton	720.00	25.00	32.00	45.00	50.00	1,440.00	72,000.00	1.00	72000	25.00
Topknot of Pot's cover Big	carton	600.00	25.00	35.00	65.00	45.00	2,275.00	102,375.00	1.00	102375	25.00

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
Ice tray: pumpkin	bundle	72.00	15.00	42.00	85.00	27.00	3,570.00	96,390.00	1.00	96390	15.00
Plastic bag with lock	bundle	24.00	2.40	28.00	41.00	29.00	1,148.00	33,292.00	1.00	33292	2.40
Cigarette and lighter container: gastank, blue	carton	60.00	4.80	38.00	46.00	30.00	1,748.00	52,440.00	1.00	52440	4.80
Cigarette and lighter container: gastank, orange	carton	60.00	4.80	38.00	46.00	30.00	1,748.00	52,440.00	1.00	52440	4.80
Water pourer: Medium	bundle	12.00	4.00	40.00	55.00	46.00	2,200.00	101,200.00	1.00	101200	4.00
Water pourer: Small	bundle	12.00	3.50	26.00	48.00	42.00	1,248.00	52,416.00	1.00	52416	3.50
Water pourer: Big	bundle	6.00	3.50	45.00	82.00	35.00	3,690.00	129,150.00	1.00	129150	3.50
Water filter: 5 level	carton	120.00	8.50	40.00	52.00	26.50	2,080.00	55,120.00	1.00	55120	8.50
Water filter: Turbine	carton	120.00	5.50	40.00	52.00	26.50	2,080.00	55,120.00	1.00	55120	5.50
Chair: CS grade B	bundle	48.00	16.00	40.00	70.00	28.00	2,800.00	78,400.00	1.00	78400	16.00
Chair: M: Big	bundle	48.00	22.00	60.00	103.00	27.00	6,180.00	166,860.00	1.00	166860	22.00
Fabric Gloves: hot protector	bundle	10.00	0.20	30.00	50.00	25.00	1,500.00	37,500.00	10.00	37500	2.00
Fabric Gloves: Special weaver, rabbit	parcel	120.00	3.40	19.00	45.00	18.00	817.00	14,706.00	1.00	14706	3.40
Fabric Gloves: Red rim	parcel	120.00	3.90	25.00	50.00	16.00	1,250.00	20,000.00	1.00	20000	3.90
Fabric Gloves: white color, yellow rim	parcel	120.00	6.20	36.00	50.00	19.00	1,800.00	34,200.00	1.00	34200	6.20
Fabric Gloves: eye, white, 125	bundle	60.00	2.00	22.00	26.00	28.00	572.00	16,016.00	1.00	16016	2.00
Fabric Gloves: eye, size 10-12	bundle	60.00	1.60	18.00	25.00	25.00	450.00	11,250.00	1.00	11250	1.60
Fabric Gloves: eye, size 132	bundle	60.00	2.40	22.00	27.00	29.00	594.00	17,226.00	1.00	17226	2.40
Fabric Gloves: eye, size 5-7	bundle	60.00	1.20	16.00	23.00	24.00	368.00	8,832.00	1.00	8832	1.20
Fabric Gloves: eye, size 7-9	bundle	60.00	1.50	16.00	23.00	24.00	368.00	8,832.00	1.00	8832	1.50
Fabric Gloves: Sun	parcel	120.00	5.20	23.00	44.00	19.00	1,012.00	19,228.00	1.00	19228	5.20
Fabric Gloves: Sun, nylon	parcel	120.00	5.20	27.00	52.00	20.00	1,404.00	28,080.00	1.00	28080	5.20
Fabric Gloves: peacock, long, nylon	parcel	60.00	4.00	30.00	55.00	15.00	1,650.00	24,750.00	1.00	24750	4.00
Fabric Gloves: peacock, white, nylon	parcel	120.00	5.40	24.00	52.00	20.00	1,248.00	24,960.00	1.00	24960	5.40
Fabric Gloves: eagle, colorful, nylon	parcel	120.00	4.80	25.00	52.00	20.00	1,300.00	26,000.00	1.00	26000	4.80
Fabric Gloves: golden fish, colorful, nylon	parcel	120.00	4.50	20.00	53.00	22.00	1,060.00	23,320.00	1.00	23320	4.50
Fabric Gloves: Sun, sailclothes	bundle	60.00	1.90	21.00	26.00	28.00	546.00	15,288.00	1.00	15288	1.90
Fabric Gloves: peacock, sailclothes	parcel	120.00	4.00	24.00	49.00	19.00	1,176.00	22,344.00	1.00	22344	4.00
Clothes for floor cleaning(Mob)	sack	72.00	36.00	50.00	80.00	25.00	4,000.00	100,000.00	1.00	100000	36.00
Pollution filter clothes: blue	bundle	600.00	4.50	29.00	42.00	22.00	1,218.00	26,796.00	1.00	26796	4.50
Rug: round shape	parcel	50.00	20.00	40.00	90.00	30.00	3,600.00	108,000.00	1.00	108000	20.00
Rug: egg shape	parcel	50.00	20.00	40.00	90.00	30.00	3,600.00	108,000.00	1.00	108000	20.00
Rug: small	carton	100.00	25.00	47.00	60.00	40.00	2,820.00	112,800.00	1.00	112800	25.00
Rug: heart shape	parcel	50.00	20.00	40.00	90.00	30.00	3,600.00	108,000.00	1.00	108000	20.00
Rug: square shape	parcel	50.00	20.00	35.00	42.00	60.00	1,470.00	88,200.00	1.00	88200	20.00
Rug: weaved	parcel	50.00	25.00	45.00	80.00	32.00	3,600.00	115,200.00	1.00	115200	25.00
Full head Hat: A3	parcel	120.00	10.00	30.00	45.00	65.00	1,350.00	87,750.00	1.00	87750	10.00
Full head Hat: loinclothes with cap	bundle	60.00	4.20	33.00	35.00	17.00	1,287.00	21,879.00	1.00	21879	4.20
Full head Hat: loinclothes	bundle	60.00	2.70	33.00	39.00	10.00	1,287.00	12,870.00	1.00	12870	2.70
Socks: short: Mix color	parcel	120.00	2.80	26.00	40.00	18.00	1,040.00	18,720.00	1.00	18720	2.80
Socks: business: Mix color	parcel	120.00	3.50	26.00	40.00	20.00	1,040.00	20,800.00	1.00	20800	3.50
Dog chain: 20x6	carton	192.00	20.00	38.00	38.00	20.00	1,444.00	28,880.00	1.00	28880	20.00
Dog chain: 22x6	carton	192.00	20.00	40.00	40.00	19.00	1,600.00	30,400.00	1.00	30400	20.00
Dog chain: 25x6	carton	144.00	19.00	40.00	40.00	24.00	1,600.00	38,400.00	1.00	38400	19.00
Dog chain: 30x6	carton	96.00	18.00	39.00	39.00	14.00	1,521.00	21,294.00	1.00	21294	18.00
Dog chain: 35x6	carton	96.00	18.00	40.00	40.00	20.00	1,600.00	32,000.00	1.00	32000	18.00
Dog chain: 45x6	carton	48.00	19.00	39.00	40.00	16.00	1,560.00	24,960.00	1.00	24960	19.00
Pingpong ball: white	box	6.00	0.60	5.00	13.00	4.00	65.00	260.00	40.00	10400	24.00
Pingpong ball: orange	box	6.00	0.60	5.00	13.00	4.00	65.00	260.00	40.00	10400	24.00
Badminton ball	carton	600.00	6.50	35.00	66.00	41.00	2,310.00	94,710.00	1.00	94710	6.50

Table B.2: The shipping analysis chart (SAC) (Cont.)

English Name	Shipping unit type			Size of Shipping unit type					Avg. Shipping quantity	Cubic space at shipping area	Total weight at Shipping
	Type	Capacity	Weight	Wide(cm)	Length(cm)	Height(cm)	Area (cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )			
paper card: gold seam 007	carton	144.00	25.00	32.00	37.00	27.00	1,184.00	31,968.00	1.00	31968	25.00
paper card Thai	carton	240.00	12.00	35.00	44.00	19.00	1,540.00	29,260.00	1.00	29260	12.00
plastic card: Winner 222	carton	144.00	25.00	32.00	38.00	26.50	1,216.00	32,224.00	1.00	32224	25.00
paper card Winner	carton	144.00	8.00	28.00	34.00	26.00	952.00	24,752.00	1.00	24752	8.00
Elastic fabric 10	Small parcel	12.00	1.00	29.00	19.00	4.00	551.00	2,204.00	5.00	11020	5.00
Elastic fabric 11	Small parcel	12.00	1.20	34.00	19.00	4.00	646.00	2,584.00	5.00	12920	6.00
Elastic fabric 14	Small parcel	12.00	1.40	38.00	19.00	4.00	722.00	2,888.00	5.00	14440	7.00
Elastic fabric 16	bundle	60.00	16.00	40.00	19.00	40.00	760.00	30,400.00	1.00	30400	16.00
Elastic fabric 4	Small parcel	12.00	0.50	16.00	19.00	4.00	304.00	1,216.00	5.00	6080	2.50
Elastic fabric 6	Small parcel	12.00	0.70	18.00	19.00	4.00	342.00	1,368.00	5.00	6840	3.50
Elastic fabric 8	Small parcel	12.00	0.80	22.00	19.00	4.00	418.00	1,672.00	5.00	8360	4.00
Elastic fabric 1 inch wide	parcel	16.00	10.00	11.00	11.00	42.00	121.00	5,082.00	1.00	5082	10.00
Elastic fabric 3/4 inch wide	parcel	20.00	8.50	11.00	11.00	42.00	121.00	5,082.00	1.00	5082	8.50
Curtain hooker Color 1	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	1.00	24048.75	9.00
Curtain hooker Color 2	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	1.00	24048.75	9.00
Curtain hooker Color 3	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	1.00	24048.75	9.00
Curtain hooker Color 4	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	1.00	24048.75	9.00
Curtain hooker Color 5	carton	10.00	9.00	27.50	33.00	26.50	907.50	24,048.75	1.00	24048.75	9.00
Ring: Medium size	Small parcel	144.00	0.40	5.00	5.00	3.00	25.00	75.00	10.00	750	4.00
Ring 500 pieces chain	carton	5,000.00	13.00	26.00	34.00	25.00	884.00	22,100.00	1.00	22100	13.00
Ring: Small size	Small parcel	144.00	0.30	5.00	5.00	3.00	25.00	75.00	10.00	750	3.00
Ring: Big size	Small parcel	144.00	0.60	5.00	5.00	3.00	25.00	75.00	25.00	1875	15.00
Mosquitoes wiping stick container	parcel	60.00	12.00	41.50	65.00	25.00	2,697.50	67,437.50	1.00	67437.5	12.00
Mosquitoes wiping stick container, long	bundle	120.00	6.50	29.00	43.00	31.00	1,247.00	38,657.00	1.00	38657	6.50
Buddism Ordaining set: Red	parcel	72.00	2.80	40.00	19.00	49.00	760.00	37,240.00	1.00	37240	2.80
Buddism Ordaining set: Yellow	parcel	72.00	2.80	40.00	19.00	49.00	760.00	37,240.00	1.00	37240	2.80
Artificial clay small size	carton	864.00	8.00	33.00	42.00	13.00	1,386.00	18,018.00	1.00	18018	8.00
Artificial clay big size	carton	144.00	18.00	25.00	32.00	17.00	800.00	13,600.00	1.00	13600	18.00
Pot mender	bundle	20.00	2.90	36.00	39.00	3.00	1,404.00	4,212.00	1.00	4212	2.90
Magnifying glass	carton	400.00	20.00	35.50	57.00	36.50	2,023.50	73,857.75	1.00	73857.75	20.00
Whetstone	carton	60.00	31.00	29.00	43.00	17.00	1,247.00	21,199.00	1.00	21199	31.00
Tape Cleanser set	carton	40.00	4.00	32.00	54.00	15.00	1,728.00	25,920.00	1.00	25920	4.00
CD Cleanser set	carton	50.00	9.00	37.00	37.00	26.00	1,369.00	35,594.00	1.00	35594	9.00
Perfume gel G&G	carton	144.00	12.00	27.00	42.00	21.00	1,600.00	38,400.00	1.00	38400	12.00
Steel pot stand	carton	120.00	10.00	39.50	44.00	25.00	1,738.00	43,450.00	1.00	43450	10.00

## Note

Average shipping quantity = From the receipt to customer during May to August 2004

Required cubic space at shipping area = Avg shipping quantity x Cubic space of unit type(cm<sup>3</sup>)

**Table B.3: The storage analysis chart**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Cotton wool/ Shell_pot, JoJo	carton	240	14	44	5R	42	2552	107184	11	1	60	15312	643104	28072	1179024
27 baht cotton wool	carton	72	12	47	62	80	2914	233120	2	0	10	2914	233120	5828	466240
a cigarette lighter AS	carton	1000	20	27	45	28	1215	34020	5	0	30	3645	102060	6075	170100
a cigarette lighter Black Star	carton	1000	20	27	45	28	1215	34020	5	0	30	3645	102060	6075	170100
a cigarette lighter Pilot	carton	1000	22	27	44	28	1188	33264	5	0	30	3564	99792	5940	166320
a cigarette lighter Red Star	carton	1000	20	27	45	28	1215	34020	5	0	30	3645	102060	6075	170100
a cigarette lighter Red Tai-Yo	carton	1000	20	28	46	18	1288	23184	55	5	300	38640	695520	70840	1275120
a cigarette lighter Tai-Yo	carton	1000	20	28	46	28	1288	36064	62	5	340	43792	1226176	79856	2235968
A gas oven lighter grade A	carton	50	7	36	40	41	1422	58302	6	1	40	5688	233208	8532	349812
A gas oven lighter grade C	carton	120	9	51	33	19	1658	30664	23	3	130	21548	398629	38123	705266
Adhesive tape for wiring( Black)	carton	100	2	15	33	18	495	8910	33	3	180	8910	160380	16335	294030
Adhesive tape for wiring( Black) TOV	carton	250	10	35	35	19	1225	23275	10	0	50	6125	116375	12250	232750
Adhesive tape for wiring( Blue)	carton	100	2	15	33	18	495	8910	25	0	130	6435	115830	12375	222750
Adhesive tape for wiring( Green)	carton	100	2	15	33	18	495	8910	25	0	130	6435	115830	12375	222750
Adhesive tape for wiring( Red)	carton	100	2	15	33	18	495	8910	25	0	130	6435	115830	12375	222750
Adhesive tape for wiring( White)	carton	100	2	15	33	18	495	8910	25	0	130	6435	115830	12375	222750
Adhesive tape for wiring( Yellow)	carton	100	2	15	33	18	495	8910	25	0	130	6435	115830	12375	222750
Aluminium foil long	carton	24	9	34	48	22	1632	35904	12	2	70	11424	251328	19584	430848
Aluminium foil short	carton	24	4	21	31	33	651	21483	12	2	70	4557	150381	7812	257796
Aluminium Mop	bundle	1200	4	8	130	16	1040	16640	22	2	120	12480	199680	22880	366080
Artificial clay big size	carton	144	18	25	32	17	800	13600	12	2	70	5600	95200	9600	163200
Artificial clay small size	carton	864	8	33	42	13	1386	18018	11	1	60	8316	108108	15246	198198
Back cleaning brush Twin	carton	24	4	24	39	34	936	31824	12	2	70	6552	222768	11232	381888
Back scratching stick	carton	144	5	21	44	20	924	18480	10	0	50	4620	92400	9240	184800
Badminton ball	carton	600	7	35	66	41	2310	94710	4	0	20	4620	189420	9240	378840
Basket 436, Shopsticks	parcel	144	9	30	75	27	2250	60750	1	0	10	2250	60750	2250	60750
Basket CS 014	parcel	48	6	36	78	25	2808	70200	4	1	30	8424	210600	11232	280800
Basket CS 433 grade A	bundle	36	6	31	60	26	1860	48360	7	1	40	7440	193440	13020	338520
Basket Spoon, one slot	parcel	144	5	28	58	17	1624	27608	2	0	10	1624	27608	3248	55216
Bath room cleaner Jackie, Pink	carton	24	13	30	43	24	1269	30444	13	3	80	10148	243552	16491	395772
Bath room cleaning brush	carton	12	2	33	49	19	1617	30723	56	6	310	50127	952413	90552	1720488
Bath room cleaning brush Fish	carton	120	10	45	55	43	2475	106425	6	1	40	9900	425700	14850	638550
Bath room cleaning brush Hama	carton	120	9	35	66	41	2310	94710	11	1	60	13860	568260	25410	1041810
Bath room cleaning brush Sack	bundle	60	5	60	60	15	3600	54000	5	1	30	10800	162000	18000	270000
Belanine spoon long	carton	144	1	15	20	11	290	3190	22	2	120	3480	38280	6380	70180
Belanine spoon short	carton	144	2	17	17	13	289	3757	22	2	120	3468	45084	6358	82654
Book 10 baht	bundle	120	15	23	42	17	966	16422	7	1	40	3864	65688	6762	114954
Book 5 baht	bundle	360	20	24	55	16	1320	21120	5	1	30	3960	63360	6600	105600
Book Drawing, Small	bundle	240	20	26	44	19	1144	21736	3	0	20	2288	43472	3432	65208
Book tearable paper, Big	parcel	400	25	39	54	19	2106	40014	6	1	40	8424	160056	12636	240084
Book tearable paper, Small	parcel	1000	35	38	67	20	2546	50920	2	0	10	2546	50920	5092	101840
Book tearable paper, without line, Big	parcel	500	25	39	49	22	1911	42042	4	1	30	5733	126126	7644	168168
Book tearable paper, without line, Small	parcel	1000	35	38	67	20	2546	50920	2	0	10	2546	50920	5092	101840
Bottle cleaning brush BI with sponge	bundle	60	3	20	74	15	1480	22200	3	1	20	2960	44400	4440	66600
Bottle cleaning brush Rabbit	bundle	60	3	20	74	15	1480	22200	3	1	20	2960	44400	4440	66600
Bottle cleaning brush Twin head	bundle	60	3	20	78	34	1560	53040	3	1	20	3120	106080	4680	159120
Bottle opener 200	carton	600	35	40	50	30	2000	60000	3	1	20	4000	120000	5000	150000
Bottle opener 777	small box	12	1	17	23	5	391	1955	6	1	30	1173	5865	2151	10753

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Bottle opener 900	carton	600	35	40	50	30	2000	60000	3	1	2.0	4000	120000	5000	150000
Bottle opener A80	parcel	12	1	11	20	7	210	1470	55	5	30.0	6300	44100	11550	80850
Bowl 16cm, grade A, with handle	sack	72	7	16	32	60	512	30720	5	1	3.0	1536	92160	2560	153600
Bowl 16cm, grade B, Mix	sack	72	7	16	32	60	512	30720	6	1	4.0	2048	122880	3072	184320
Bowl 18cm, grade B, drnk	sack	72	6	20	40	60	800	48000	5	1	3.0	2400	144000	4000	240000
Bowl 20A	sack	72	6	20	40	60	800	48000	12	3	8.0	6400	384000	9600	576000
Bowl 20cm, grade A, dark	sack	72	5	18	36	56	648	36288	11	3	7.0	4536	254016	7128	399168
Bowl 20cm, grade B, dark	sack	72	6	20	40	60	800	48000	5	1	3.0	2400	144000	4000	240000
Brooch in Pack	carton	1000	20	37	29	36	1043	37552	3	0	2.0	2086	75103	3129	112655
Brooch Bee, 1	small box	1	0	10	13	4	130	520	100	0	50.0	6500	26000	13000	52000
Brooch Bee, 2	small box	1	1	11	13	6	143	858	100	0	50.0	7150	42900	14300	85800
Brooch Bee, 3	small box	1	1	10	13	5	130	650	100	0	50.0	6500	32500	13000	65000
Brooch grade A	bundle	720	3	18	31	40	558	22320	5	0	3.0	1674	66960	2790	111600
Brooch Lucky	bundle	30	4	14	19	49	257	12569	6	1	4.0	1026	50274	1539	75411
Brooch Rose, 0	small box	1	0	9	14	4	119	476	100	0	50.0	5950	23800	11900	47600
Brooch Rose, 1	small box	1	0	9	15	5	135	608	100	0	50.0	6750	30375	13500	60750
Brooch Rose, 2	small box	1	1	10	18	5	166	831	100	0	50.0	8313	41563	16625	83125
Brooch Rose, 3	small box	1	0	9	15	4	135	540	100	0	50.0	6750	27000	13500	54000
Brooch Rose, 4	small box	1	1	10	19	5	190	950	100	0	50.0	9500	47500	19000	95000
Brooch tiny, Gold	bundle	10	1	13	17	22	215	4719	11	1	6.0	1287	28314	2360	51909
Brooch: tiny, White	bundle	10	1	13	17	22	215	4719	21	1	11.0	2360	51909	4505	99099
Broom water broomy	carton	12	4	33	96	18	3168	57024	32	2	17.0	53856	969408	101376	1824768
Broom water Samor	carton	24	12	26	125	17	3250	55250	11	1	6.0	19500	331500	35750	607750
Brush: Black meal of coconut	bundle	100	4	25	56	40	1400	56000	6	1	4.0	5600	224000	8400	336000
Brush Brass 5 rows	bundle(box)	60	5	13	25	30	313	9375	2	0	1.0	313	9375	625	18750
Brush Brass 6 rows	bundle(box)	60	5	13	25	30	325	9750	2	0	1.0	325	9750	650	19500
Brush Brass 7 rows	bundle(box)	60	6	13	25	30	325	9750	2	0	1.0	325	9750	650	19500
Brush Brass,3 Roses	bundle(box)	30	7	16	23	54	368	19872	14	4	9.0	3312	178848	5152	278208
Brush Brass, Coin	bundle(box)	48	3	22	22	69	484	33396	14	2	8.0	3872	267168	6776	467544
Brush Brass,Hama	carton	12	4	25	33	17	825	14025	12	2	7.0	5775	98175	9900	168300
Brush Brass,Tiger	bundle(box)	48	3	22	22	69	484	33396	14	2	8.0	3872	267168	6776	467544
Brush: Brown meal of coconut	bundle	100	4	25	56	40	1400	56000	7	1	4.0	5600	224000	9800	392000
Brush Nylon, Color	bundle	101	5	25	55	33	1375	45375	6	1	4.0	5500	181500	8250	272250
Brush Nylon, Hama	carton	12	3	25	33	17	825	14025	12	2	7.0	5775	98175	9900	168300
Brush Rosso, Brass	carton	12	5	25	25	20	625	12500	11	1	6.0	3750	75000	6875	137500
Brush Rose, Milk color	bundle(box)	60	8	17	25	58	425	24650	12	2	7.0	2975	172550	5100	295800
Brush Rose, Transparent color	bundle(box)	60	4	12	24	41	282	12126	12	2	7.0	1974	84882	3384	145512
Buddism Ordaining set Red	parcel	72	3	40	19	49	760	37240	12	2	7.0	5320	260680	9120	446880
Buddism Ordaining set Yellow	parcel	72	3	40	19	49	760	37240	12	2	7.0	5320	260680	9120	446880
Can opener 5 rings	bundle	60	4	11	20	34	220	7480	12	2	7.0	1540	52360	2640	89760
CD Cleanser set	carton	50	9	17	17	26	1169	15594	3	0	2.0	2738	71188	4107	106782
Cement cleaning Sponge Tree	parcel	100.00	1	50	48	29	2400	69600	12	2	7.0	16800	487200	28800	835200
Chair CS grade B	bundle	48	16	40	70	28	2800	78400	3	0	2.0	5600	156800	8400	235200
Chiu M. Hug	bundle	48	22	60	103	27	6180	166860	3	0	2.0	12360	333720	18540	500580
chemical pen pilot, small, Black	carton	1728	22	37	48	29	1734	50279	2	0	1.0	1734	50279	3468	100558
chemical pen pilot, small, Blue	carton	1728	22	37	48	29	1734	50279	2	0	1.0	1734	50279	3468	100558
chemical pen pilot, small, Red	carton	1728	22	37	48	29	1734	50279	2	0	1.0	1734	50279	3468	100558
Chopstick	sack	1500	25	37	68	21	2516	52836	5	0	3.0	7548	158508	12580	264180

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2 )	Cubic space(cm3)	Area ( cm2 )	Cubic space(cm3)
Cigarette and lighter container gastank, blue	carton	60	5	38	46	30	1748	52440	2	0	1 0	1748	52440	3496	104880
Cigarette and lighter container gastank, orange	carton	60	5	38	46	30	1748	52440	2	0	1 0	1748	52440	3496	104880
Cleaning frill Dozen pack	bundle	12 00	3	32	32	22	1024	22528	10	0	5 0	5120	112640	10240	225280
Cleaning frill Kilo	bundle	10 00	10	30	65	46	1950	89700	5	0	3 0	5850	269100	9750	448500
Cleaning sponge with net Merrysponge	carton	288 00	4	23	64	52	1440	74880	12	2	7 0	10080	524160	17280	898560
Cleaning sponge with net Modern	parcel	720 00	6	56	73	60	4088	245280	6	1	4 0	16352	981120	24528	1471680
Cleaning sponge with net House wife	bundle	720 00	5	50	70	60	3500	210000	12	2	7 0	24500	1470000	42000	2520000
Cleaning sponge with scrubber Modern	parcel	720 00	6	57	105	28	5985	167580	12	2	7 0	41895	1173060	71820	2010960
Cleaning sponge 3M, 2 purpose	carton	240 00	5	38	66	37	2508	92796	52	2	27 0	67716	2505492	130416	4825392
Cleaning sponge Hama, L	parcel	288 00	3	60	72	45	4320	194400	3	0	2 0	8640	388800	12960	583200
Cleaning sponge Tree, L	parcel	288 00	3	59	69	46	4071	187266	12	2	7 0	28497	1310862	48852	2247192
Cleaning sponge Tree, M	parcel	432 00	3	63	77	34	4851	164934	6	1	4 0	19404	659736	29106	989604
Cleaning sponge Tree, S	parcel	720 00	3	54	68	44	3672	161568	6	1	4 0	14688	646272	22032	969408
Cleaning stainless frill Big brite	carton	288 00	7	44	45	40	1980	79200	12	2	7 0	13860	554400	23760	950400
Cleaning stainless frill Poly	carton	144 00	5	43	46	17	1978	33626	33	3	18 0	35604	605268	65274	1109658
Cleaning tube	carton	12	1	19	24	11	456	5016	20	0	10 0	4560	50160	9120	100320
Clipboard A5	carton	144	16	32	48	30	1536	46080	2	0	1 0	1536	46080	3072	92160
Clipper Black 108	carton	720	26	44	51	31	2244	69564	4	1	3 0	6732	208692	8976	278256
Clipper Black 109	carton	720	18	32	48	32	1536	49152	4	1	3 0	4608	147456	6144	196608
Clipper Black 110	box	144	2	12	16	11	192	2112	11	1	6 0	1152	12672	2112	23232
Clipper Black 111	box	144	1	10	21	9	210	1890	12	2	7 0	1470	13230	2520	22680
Clipper Black 112	box	144	1	17	17	7	289	2023	22	2	12 0	3468	24276	6358	44506
Clipper White 0	box	36	1	15	23	18	345	6210	22	2	12 0	4140	74520	7590	136620
Clipper White 2	box	36	5	12	18	6	201	1208	35	5	20 0	4025	24150	7044	42263
Clipper White 3	box	72	5	14	16	6	216	1188	35	5	20 0	4320	23760	7560	41580
Clipper White 4	box	144	1	12	18	7	201	1308	35	5	20 0	4025	26163	7044	45784
Clipper White 5	box	144	0	10	16	5	147	663	35	5	20 0	2945	13253	5154	23192
Clipping Blade Dragonfly	carton	7200	30	25	33	20	825	16500	6	1	4 0	3300	66000	4950	99000
Clipping Blade Sakura	carton	7200	30	26	33	21	858	18018	2	0	1 0	858	18018	1716	36036
Clothes for floor cleaning( Mob)	sack	72	36	50	80	25	4000	100000	6	1	4 0	16000	400000	24000	600000
Clothes hanger 222 ( wire)	carton	144	9	22	67	47	1474	69278	6	1	4 0	5896	277112	8844	415668
Clothes hanger 222 ,plastic	carton	144	5	34	34	41	1156	47396	12	2	7 0	8092	331772	13872	568752
Clothes hanger 3 rings	carton	144	8	44	46	22	2024	44528	30	10	20 0	40480	890560	60720	1335840
Clothes hanger 5 holes	carton	120	5	40	53	26	2094	54431	6	1	4 0	8374	217724	12561	326586
Clothes hanger 5 rings	carton	144	5	41	44	21	1804	37884	30	10	20 0	36080	757680	54120	1136520
Clothes hanger 590, Black	carton	144	9	36	38	60	1368	82080	6	0	3 0	4104	246240	8208	492480
Clothes hanger Aluminium, 639	carton	72	5	43	42	29	1806	52374	6	1	4 0	7224	209496	10836	314244
Clothes hanger Aluminium, 646	carton	144	6	43	42	29	1806	52374	8	2	5 0	9030	261870	14448	418992
Clothes hanger C1	carton	144	3	27	27	37	702	25983	23	3	13 0	9129	337782	16152	597615
Clothes hanger No 799	carton	144	10	34	34	66	1156	76296	6	1	4 0	4624	305184	6936	457776
Clothes hanger PP221	carton	144	3	25	25	40	625	25000	22	2	12 0	7500	300000	13750	550000
Clothes hanger red heart-shaped, 55	carton	144	4	26	42	21	1058	22223	25	5	15 0	15874	333349	26456	555581
Clothes hanger red heart-shaped, 99	carton	72	5	40	55	44	2200	96800	12	2	7 0	15400	677600	26400	1161600
Clothes hanger Round Shape	carton	12	3	40	56	37	2240	82880	6	1	4 0	8960	331520	13440	497280
Clothes hanger Square Mini	carton	48	3	40	51	25	2040	51000	5	0	3 0	6120	153000	10200	255000
Clothes hanger Square Twin	carton	12	4	40	55	38	2200	83600	6	1	4 0	8800	334400	13200	501600
Clothes hanger Umbrella	carton	24	3	25	41	21	1100	25100	12	2	7 0	7700	177100	13200	303600
Comb grade A No 801	hundle	432	7	23	26	39	574	22089	6	1	4 0	2295	88158	3143	132536

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm 3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm 2)	Cubic space(cm3)
Comb. grade A No 802	bundle	432	7	23	26	39	574	22089	6	1	4.0	2295	88358	3443	132536
Comb. grade A No 803	bundle	432	7	23	26	39	574	22089	6	1	4.0	2295	88358	3443	132536
Comb. grade A No 804	bundle	432	7	23	26	39	574	22089	6	1	4.0	2295	88358	3443	132536
Comb. grade A No 805	bundle	432	7	23	26	39	574	22089	6	1	4.0	2295	88358	3443	132536
Comb. grade A No 811A	bundle	720	5	15	25	53	315	19875	5	1	3.0	1125	59625	1875	99375
Comb. Hair clipper, plastic	bundle	120	2	10	15	36	150	5400	35	5	20.0	3000	108000	5250	189000
Comb. Hair clipper, stainless	bundle	120	3	10	15	36	150	5400	13	3	8.0	1200	43200	1950	70200
Cone No1	bundle	144	9	47	65	28	3055	85540	5	0	3.0	9165	256620	15275	427700
Cone No2	bundle	144	5	37	59	26	2183	56758	5	0	3.0	6549	170274	10915	283790
Cone No3	bundle	144	4	30	50	20	1500	30000	5	0	3.0	4500	90000	7500	150000
Cone No4	bundle	144	2	46	125	16	5750	92000	5	0	3.0	17250	276000	28750	460000
Cone No5	bundle	144	3	36	120	14	4120	60480	5	0	3.0	12960	181440	21600	302400
Cotton butts 100 pieces in pack	carton	576	10	38	49	48	1862	89376	12	2	7.0	13034	625632	22344	1072512
Cotton butts 100 pieces in pack	carton	240	9	37	44	40	1628	65120	11	1	6.0	9768	390720	17908	716320
Cotton butts 100 pieces in pack	carton	960	9	43	53	41	2279	93439	12	2	7.0	15953	654073	27348	1121268
Cotton butts 50 pieces in pack	carton	1200	10	42	54	40	2268	90720	12	2	7.0	15876	635040	27216	1088640
Cotton butts Fancy Giant size pot	carton	144	13	58	80	30	4640	139200	2	0	1.0	4640	139200	9280	278400
Cotton butts Fancy Jumbo Shell Pot	carton	240	21	50	67	51	3350	170850	6	1	4.0	13400	683400	20100	1025100
Cotton butts Fancy Pot 2 slots	carton	240	20	50	67	44	3350	147400	6	1	4.0	13400	589600	20100	884400
Cotton butts Square box, pineapple	carton	240	14	35	60	50	2100	105000	11	1	6.0	12600	630000	23100	1155000
Cotton butts transparent small size pot	carton	240	9	33	44	41	1452	59532	11	1	6.0	8712	357192	15972	654852
Cotton wool: Ambulance bus	carton	240	8	41	40	32	1640	52480	10	0	5.0	8200	262400	16400	524800
Cup 514: Transparent pattern	parcel	144	6	49	50	31	2450	75950	4	1	3.0	7350	227850	9800	303800
Cup 514: White pattern	parcel	144	6	49	50	31	2450	75950	2	0	1.0	2450	75950	4900	151900
Cup 688: Sakura, small	parcel	144	6	40	40	37	1600	59200	4	1	3.0	4800	177600	6400	236800
Cup 002 with Handle	parcel	288	6	32	46	65	1472	95680	12	2	7.0	10304	669760	17664	1148160
Cup 004 with Handle, Cartoon pattern	parcel	144	6	40	45	30	1800	54000	11	1	6.0	10800	324000	19800	594000
Cup 204 with Handle	carton	72	3	28	32	51	880	44440	5	1	3.0	2640	133320	4400	222200
Cup 205 with Handle	carton	72	3	31	49	28	1495	41099	5	1	3.0	4484	123296	7473	205494
Cup 404 with Handle	parcel	144	5	30	45	56	1350	75600	8	1	5.0	6750	378000	10800	604800
Cup: 45 Mitsu with Handle	parcel	72	2	28	52	20	1456	29120	24	4	14.0	20384	407680	34944	698880
Cup 475	parcel	144	6	24	36	50	864	43200	7	2	5.0	4320	216000	6048	302400
Cup 639 Sakura, stripe with Cover	carton	72	5	28	50	50	1400	70000	7	1	4.0	5600	280000	9800	490000
Cup 733 with Handle	parcel	144	3	21	45	43	945	40635	12	2	7.0	6615	284445	11340	487620
Cup A3 with Handle	parcel	144	9	50	50	38	2500	95000	10	0	5.0	12500	475000	25000	950000
Cup Arale	parcel	72	4	46	50	28	2300	64400	6	1	4.0	9200	257600	13800	386400
Cup Freshy	carton	144	2	19	26	42	494	20748	25	5	15.0	7410	311220	12350	518700
Cup Frog style 2012	parcel	48	2	21	30	46	630	28980	10	2	6.0	1780	171880	6300	289800
Cup Kitty style 2013	parcel	48	2	21	30	46	630	28980	10	2	6.0	1780	171880	6300	289800
Cup Marble 004	parcel	144	5	40	50	28	2000	56000	11	1	6.0	12000	316000	22000	616000
Cup P.S 10 ounces	carton	1000	7	37	44	42	1606	67452	10	0	5.0	8030	337260	16060	674520
Cup P.S 12 ounces	carton	1000	9	37	44	43	1628	70004	10	0	5.0	8140	350020	16280	700040
Cup P.S. 70 ounces	carton	2000	10	40	63	40	2520	100800	10	0	5.0	12600	504000	25200	1008000
Cup Transparent, pineapple pattern	carton	96	6	34	48	43	1632	70176	7	2	5.0	8160	350880	11424	491232
Cup Wine	carton	144	7	31	52	52	1612	83824	2	0	1.0	1612	83824	3224	167648
Curtain hooker Color 1	carton	10	9	28	33	27	908	24049	2	0	1.0	908	24049	1815	48098
Curtain hooker Color 2	carton	10	9	28	33	27	908	24049	2	0	1.0	908	24049	1815	48098
Curtain hooker Color 3	carton	10	9	28	33	27	908	24049	2	0	1.0	908	24049	1815	48098



**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Curtain hooker: Color 4	carton	10	9	28	33	27	908	24049	2	0	1.0	908	24049	1815	48098
Curtain hooker: Color 5	carton	10	9	28	33	27	908	24049	2	0	1.0	908	24049	1815	48098
Cutter 30-K	carton	240	7	20	40	24	790	18960	2	0	1.0	790	18960	1580	37920
Cutter 44-K	carton	120	3	20	40	24	790	18960	4	1	3.0	2370	56880	3160	75840
Cutter ST-10	carton	240	4	28	34	25	935	23375	4	1	3.0	2805	70125	3740	93500
Cutter ST-100	carton	120	6	21	48	16	1008	16128	3	0	2.0	2016	32256	3024	48384
Cutter ST-9	carton	240	3	24	28	21	658	13818	4	1	3.0	1974	41454	2632	55272
Cutter 3 pieces	carton	60	8	27	37	44	999	43956	5	1	3.0	2997	131868	4995	219780
CutterPI Colorful	carton	120	5	22	46	23	1001	23023	6	1	4.0	4004	92092	6006	138138
CutterPI with Blade	carton	120	6	35	56	22	1960	43120	6	1	4.0	7840	172480	11760	258720
Dipper with short handle	carton	300	25	33	43	34	1419	48246	1	0	1.0	1419	48246	1419	48246
Dish liquid cleanser: Cleo	carton	24	12	27	38	26	1026	26676	55	5	30.0	30780	800280	56430	1467180
Dish liquid cleanser: Sunny Wash 800cc	carton	24	20	33	44	30	1452	43560	10	0	5.0	7260	217800	14520	435600
Dish soap cleanser	carton	100	5	24	29	10	696	6960	25	0	13.0	9048	90480	17400	174000
Doctor gloves: L	carton	1,000.00	8	27	38	25	1026	25650	5	0	3.0	3078	76950	5130	128250
Doctor gloves: M	carton	1,000.00	8	27	38	25	1026	25650	12	2	7.0	7182	179550	12312	307800
Doctor gloves: S	carton	1,000.00	8	27	38	25	1026	25650	22	2	12.0	12312	307800	22572	564300
Dog chain: 20x6	carton	192	20	38	38	20	1444	28880	3	0	2.0	2888	57760	4332	86640
Dog chain: 22x6	carton	192	20	40	40	19	1600	30400	3	0	2.0	3200	60800	4800	91200
Dog chain: 25x6	carton	144	19	40	40	24	1600	38400	3	0	2.0	3200	76800	4800	115200
Dog chain: 30x6	carton	96	18	39	39	14	1521	21294	3	0	2.0	3042	42588	4563	63882
Dog chain: 35x6	carton	96	18	40	40	20	1600	32000	3	0	2.0	3200	64000	4800	96000
Dog chain: 45x6	carton	48	19	39	40	16	1560	24960	3	0	2.0	3120	49920	4680	74880
Drawer lock	small box	12	1	11	13	6	143	858	20	0	10.0	1430	8580	2860	17160
Dry Alcohol cup	carton	500	18	26	50	23	1300	29900	5	0	3.0	3900	89700	6500	149500
Dry cell: CAT, Big	carton	144	16	22	29	20	624	12470	23	3	13.0	8106	162110	14341	286810
Dry cell: CAT, Small	carton	144	12	22	29	20	624	12470	53	3	28.0	17458	349160	33046	660910
Dry cell: Chinese, 2A	carton	60	17	19	31	27	589	15903	22	2	12.0	7068	190836	12958	349866
Dry cell: Chinese, 3A	carton	2160	18	26	32	15	832	12480	5	2	4.0	3328	49920	4160	62400
Dry cell: Panasonic, 2A, Alkaline	carton	144	9	24	31	24	744	17484	2	0	1.0	744	17484	1488	34968
Dry cell: Panasonic, 2A, black	carton	1000	22	18	31	27	558	15066	2	0	1.0	558	15066	1116	30132
Dry cell: Panasonic, 2A, green	carton	1000	20	18	31	27	558	15066	6	1	4.0	2232	60264	3348	90396
Dry cell: Panasonic, 2A, red	carton	1000	21	18	31	27	558	15066	2	0	1.0	558	15066	1116	30132
Dry cell: Panasonic, 3A, black	carton	1200	12	25	29	13	725	9425	2	0	1.0	725	9425	1450	18850
Dry cell: Panasonic, 3A, Alkaline	carton	144	5	25	31	17	775	13175	2	0	1.0	775	13175	1550	26350
Dry cell: Panasonic, 9V, square shape	carton	288	10	24	24	17	576	9792	2	0	1.0	576	9792	1152	19584
Dry cell: Panasonic, size C, Middle	carton	480	25	30	33	23	959	22051	4	1	3.0	2876	66154	3835	88205
Dry cell: Panasonic, size D, Big	carton	288	26	29	39	22	1131	24882	6	1	4.0	4524	99528	6786	149292
Elastic fabric 1 inch wide	parcel	16	10	11	11	42	121	5082	6	1	4.0	484	20328	726	30492
Elastic fabric 10	bundle	120	10	29	19	40	551	22040	2	0	1.0	551	22040	1102	44080
Elastic fabric 11	bundle	120	12	34	19	40	646	25840	2	0	1.0	646	25840	1292	51680
Elastic fabric 14	bundle	120	14	38	19	40	722	28880	2	0	1.0	722	28880	1444	57760
Elastic fabric 16	bundle	60	16	40	19	40	760	30400	2	0	1.0	760	30400	1520	60800
Elastic fabric 1/4 inch wide	parcel	20	9	11	11	42	121	5082	6	1	4.0	484	20328	726	30492
Elastic fabric 4	bundle	120	5	16	19	38	304	11552	2	0	1.0	304	11552	608	23104
Elastic fabric 6	bundle	120	7	18	19	39	342	13318	2	0	1.0	342	13338	684	26676
Elastic fabric 8	bundle	120	8	22	19	38	418	15884	2	0	1.0	418	15884	836	31768
Envelope airplane pattern	carton	5000	16	28	50	35	1400	49000	2	0	1.0	1400	49000	2800	98000

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity		
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2 )	Cubic space(cm3)	Area ( cm2 )	Cubic space(cm3)	
Envelope: Cartoon pattern	carton	5000	16	28	50	35	1400	49000	2	0	1.0	1400	49000	2800	98000	
Envelope: National flag pattern	carton	5000	16	28	50	35	1400	49000	2	0	1.0	1400	49000	2800	98000	
Envelope: Pink stripe	carton	5000	16	28	50	35	1400	49000	3	0	2.0	2800	98000	4200	147000	
Envelope: Standard size, Cartoon	carton	5000	17	27	60	35	1620	56700	2	0	1.0	1620	56700	3240	113400	
Envelope: Standard size, Color	carton	5000	17	27	60	35	1620	56700	4	1	3.0	4860	170100	6480	226800	
Envelope: White long	carton	5000	22	28	37	48	1036	49728	2	0	1.0	1036	49728	2072	99456	
Envelope: White stripe	carton	5000	16	28	50	35	1400	49000	6	1	4.0	5600	196000	8400	294000	
Fabric cleaning Brush 003	carton	72	5	36	36	19	1296	24624	30	0	15.0	19440	369360	38880	738720	
Fabric cleaning Brush 031	carton	72	5	17	40	33	677	22346	23	3	13.0	8803	290502	15575	513964	
Fabric cleaning Brush 707	carton	144	5	29	31	33	26	1023	26598	8	2	5.0	5115	132990	8184	212784
Fabric cleaning Brush Eastman 2 colors	carton	120	15	25	38	52	950	49400	53	3	28.0	26600	1383200	50350	2618200	
Fabric cleaning Brush Eastman, Bone	carton	144	14	34	48	35	1632	57120	23	3	13.0	21216	742560	37536	1313760	
Fabric cleaning Brush flat iron shape,brass	carton	24	5	29	38	16	1102	17632	55	5	30.0	33060	528960	60610	969760	
Fabric cleaning Brush JCJ	carton	72	4	19	33	30	627	18810	20	0	10.0	6270	188100	12540	376200	
Fabric cleaning Brush Nylon 888	bundle	60	6	16	24	50	364	18213	12	2	7.0	2550	127488	4371	218550	
Fabric cleaning Brush:Nylon, flat iron	carton	24	4	29	40	17	1160	19140	55	5	30.0	34800	574200	63800	1052700	
Fabric cleaning Brush:Nylon, flat iron,china	carton	144	11	30	50	39	1500	58500	5	0	3.0	4500	175500	7500	292500	
Fabric cleaning Brush:Rainbow, Samor	carton	240	22	33	47	52	1551	80652	23	3	13.0	20163	1048476	35673	1854996	
Fabric cleaning Brush Samor, White fiber	carton	144	17	34	37	49	1258	61642	23	3	13.0	16354	801346	28934	1417766	
Fabric cleaning soap 3 stars	carton	50	16	32	31	23	977	22460	3	0	2.0	1953	44919	2930	67379	
Fabric cleaning soap Carus crane	carton	50	15	31	31	21	961	20181	3	0	2.0	1922	40362	2883	60543	
Fabric Gloves eagle, colorful, nylon	parcel	120	5	25	52	20	1300	26000	45	5	25.0	32500	650000	58500	1170000	
Fabric Gloves eye, size 10-12	bundle	60	2	18	25	25	450	11250	11	1	6.0	2700	67500	4950	123750	
Fabric Gloves eye, size 132	bundle	60	2	22	27	29	594	17226	11	1	6.0	3564	103356	6534	189486	
Fabric Gloves eye, size 5-7	bundle	60	1	16	23	24	368	8832	11	1	6.0	2208	52992	4048	97152	
Fabric Gloves eye, size 7-9	bundle	60	2	16	23	24	368	8832	11	1	6.0	2208	52992	4048	97152	
Fabric Gloves eye, white, 125	bundle	60	2	22	26	28	572	16016	11	1	6.0	3432	96096	6292	176176	
Fabric Gloves golden fish, colorful, nylon	parcel	120	5	20	53	22	1060	23320	10	0	5.0	5300	116600	10600	233200	
Fabric Gloves hot protector	carton	600	14	50	75	50	3750	187500	4	0	2.0	7500	375000	15000	750000	
Fabric Gloves peacock, long, nylon	parcel	60	4	30	55	15	1650	24750	20	0	10.0	16500	247500	33000	495000	
Fabric Gloves peacock, sailclothes	parcel	120	4	24	49	19	1176	22344	23	3	13.0	15288	290472	27048	513912	
Fabric Gloves: peacock,white, nylon	parcel	120	5	24	52	20	1248	24960	23	3	13.0	16224	324480	28704	574080	
Fabric Gloves Red rim	parcel	120	4	25	50	16	1250	20000	58	8	33.0	41250	660000	72500	1160000	
Fabric Gloves Special weaver, rabbit	parcel	120	3	19	43	18	817	14706	11	1	6.0	4902	88236	8987	161766	
Fabric Gloves Sun	parcel	120	5	23	44	19	1012	19228	25	5	15.0	15180	288420	25300	480700	
Fabric Gloves Sun, sailclothes	bundle	60	2	21	26	28	546	15288	12	2	7.0	3822	107016	6552	183456	
Fabric Gloves: white color, yellow rim	parcel	120	6	36	50	19	1800	34200	20	0	10.0	18000	342000	36000	684000	
Fabric Gloves Sun, nylon	parcel	120	5	27	52	20	1404	28080	23	3	13.0	18252	365040	32292	645840	
Fabric Hanger: Big Dee	carton	48	7	49	57	44	2793	122892	3	0	1.5	4190	184338	8379	368676	
Fabric Hanger: Big flowers	carton	48	5	56	55	43	3080	132440	3	0	1.5	4620	198660	9240	397320	
Fabric Hanger: Daily	carton	48	3	52	57	56	2964	165984	3	0	1.5	4446	248976	8892	497952	
Fabric Hanger: Green flowers	carton	72	5	29	63	43	1827	78561	6	1	4.0	7308	314244	10962	471366	
Fabric pincher: 16 pieces, Ploy	carton	36	4	28	31	23	868	19964	12	2	7.0	6076	139748	10416	239568	
Fabric pincher: 18 pieces, CS	carton	36	2	24	36	17	864	14688	12	2	7.0	6048	102816	10368	176256	
Fabric pincher: 18 pieces, round shape, Flower	carton	36	3	32	33	32	1056	33792	30	6	18.0	19008	608256	31680	1013760	
Fabric pincher: 18 pieces, round shape, Merry	carton	48	4	22	33	27	726	19602	11	1	6.0	4356	117612	7986	215622	
Fabric pincher: 18pieces, turbine	carton	36	3	24	36	17	864	14688	12	2	7.0	6048	102816	10368	176256	
Fabric pincher: 24 pieces, Put	carton	36	4	33	34	19	1122	21318	23	3	13.0	14586	277134	25806	490314	

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Fabric pincher: 30 pieces, CS	carton	36	4	35	40	16	1400	22400	23	3	13.0	18200	291200	32200	515200
Fabric pincher: 30 pieces, Put	carton	36	4	35	40	16	1400	22400	25	5	15.0	21000	336000	35000	560000
Fabric pincher: Big size	carton	36	3	24	29	26	696	18096	13	3	8.0	5568	144768	9048	235248
Fabric pincher: Japanese	carton	36	3	18	28	25	504	12600	23	3	13.0	6552	163800	11592	289800
Fabric pincher: Wooden	carton	2880	13	28	45	30	1260	37800	10	0	5.0	6300	189000	12600	378000
Fabric Softener: Pink	carton	36	15	26	51	40	1326	53040	6	1	4.0	5304	212160	7956	318240
Fabric Softener: Sky-blue	carton	36	15	26	51	40	1326	53040	6	1	4.0	5304	212160	7956	318240
Fabric Whitener	carton	72	8	25	33	28	809	22638	11	1	6.0	4851	135828	8894	249018
Feathers stick	bundle	200.00	26	34	67	34	2278	77452	3	0	2.0	4556	154904	6834	232356
Feet cleaning sponge: Jolly	bundle	12.00	1	39	55	30	2145	64350	12	2	7.0	15015	450450	25740	772200
Flashlight, Chinese, Colorful plastic	carton	120	10	30	40	50	1200	60000	6	1	4.0	4800	240000	7200	360000
Flashlight, Gun A2500	carton	24	2	18	28	18	504	9072	10	0	5.0	2520	45360	5040	90720
Flashlight, Gun A2600	carton	24	2	22	25	20	550	11000	10	0	5.0	2750	55000	5500	110000
Flashlight, Gun S2200	carton	12	2	20	20	16	390	6240	10	0	5.0	1950	31200	3900	62400
Flashlight, Panasonic, FF-137	carton	24	4	28	41	27	1148	30422	6	1	4.0	4592	121688	6888	182532
Flashlight, Panasonic, FF-327	carton	48	3	24	43	18	1032	18576	6	1	4.0	4128	74304	6192	111456
Flashlight, PF-127	carton	24	4	28	41	20	1148	22960	6	1	4.0	4592	91840	6888	137760
Flashlight, Tiger 300	carton	192	25	43	62	47	2666	123969	11	1	6.0	15996	743814	29326	1363659
Flashlight, Tiger 500	carton	120	21	40	67	55	2647	144234	3	0	2.0	5293	288469	7940	432703
Flashlight, Tiger 700	carton	72	17	41	53	56	2126	119070	2	0	1.0	2126	119070	4253	238140
Flipper used for frying	carton	300	25	33	43	34	1419	48246	1	0	1.0	1419	48246	1419	48246
Flipper used for frying: with holes	carton	300	25	33	43	34	1419	48246	1	0	1.0	1419	48246	1419	48246
Floor cleaning brush: Nylon, Rose	carton	12	4	24	40	14	960	13440	12	2	7.0	6720	94080	11520	161280
Floor cleaning sponge: Rose	bundle	60.00	3	50	102	37	5100	188700	11	1	6.0	30600	1132200	56100	2075700
Floor cleaning sponge: Tree	parcel	60.00	20	50	102	37	5100	188700	11	1	6.0	30600	1132200	56100	2075700
Full head Hat: A3	parcel	120	10	30	45	65	1350	87750	12	2	7.0	9450	614250	16200	1053000
Full head Hat: Ioinclothes	bundle	60	3	33	39	10	1287	12870	7	1	4.0	5148	51480	9009	90090
Full head Hat: Ioinclothes with cap	bundle	60	4	33	39	17	1287	21879	4	0	2.0	2574	43758	5148	87516
Glass Cleaner: Buka	carton	12	4	18	23	23	403	9258	23	3	13.0	5233	120348	9258	212923
Grilling sieve	bundle	60	8	26	40	20	1040	20800	5	0	3.0	3120	62400	5200	104000
Hair Jel: Jenny	carton	288	19	34	44	26	1496	38896	2	0	1.0	1496	38896	2992	77792
High Cup: 355 with Cover	carton	144	7	36	52	45	1872	83304	2	0	1.0	1872	83304	3744	166608
Hot Stick Glue: Big	carton	800	25	32	64	18	2048	35840	4	1	3.0	6144	107520	8192	143360
Hot Stick Glue: Small	carton	1750	25	32	64	18	2048	35840	4	1	3.0	6144	107520	8192	143360
Hot water pouch: Big, Kangaroo	carton	24	14	30	36	26	1080	28080	3	0	2.0	2160	56160	3240	84240
Hot water pouch: small	carton	200	15	38	50	25	1900	47500	12	2	7.0	13300	332500	22800	570000
Hot water pouch: stripe pattern, small	carton	300	14	26	52	43	1352	58136	6	1	4.0	5408	232544	8112	348816
Ice canteen: Perfect, No 999-MS	carton	12	10	44	67	51	2948	150348	3	0	2.0	5896	300696	8844	451044
Ice canteen: Star S, No. 592	carton	12	6	40	56	46	2240	103040	6	1	4.0	8960	412160	13440	618240
Ice tray: pumpkin	bundle	72	15	42	85	27	3570	96390	4	0	2.0	7140	192780	14280	385560
Indigo: Big bottle, Chicken	carton	144	2	33	45	35	1485	51975	3	0	2.0	2970	103950	4455	155925
Indigo: Big bottle, Crown	carton	108	9	36	37	38	1314	49932	2	0	1.0	1314	49932	2628	99864
Indigo: big square shape, Crown	carton	72	12	31	46	21	1426	29946	4	0	2.0	2852	59892	5704	119784
Indigo: bottle Mokey	carton	288	8	24	33	28	792	22176	2	0	1.0	792	22176	1584	44352
Indigo: Medium bottle, Chicken	carton	360	22	35	40	42	1400	58800	2	0	1.0	1400	58800	2800	117600
Indigo: Small bottle, Chicken	carton	720	19	27	50	39	1350	51975	2	0	1.0	1350	51975	2700	103950
Indigo: square shape, Crown	bundle	60	1	10	24	9	240	2160	23	3	13.0	3120	28080	5520	49680
Indigo: square shape, Monkey	carton	360	9	24	33	28	792	22176	2	0	1.0	792	22176	1584	44352

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Indigo: Square bottle, Chicken	carton	720	13	29	44	25	1276	31900	2	0	1.0	1276	31900	2552	63800
Indigo:Liquid, Chicken	carton	96	18	33	42	49	1386	67914	2	0	1.0	1386	67914	2772	135828
Kerosine: Jun	carton	24	3	18	22	15	396	5940	55	5	30.0	11880	178200	21780	326700
Knife: Chinesee 103	box	12	0	8	25	3	188	469	50	0	25.0	4688	11719	9375	23438
Knife: Chinesee 104A	box	12	0	10	23	5	219	983	20	0	10.0	2185	9833	4370	19665
Knife: Chinesee 106W	box	12	0	10	24	4	228	912	20	0	10.0	2280	9120	4560	18240
Knife: Chinesee 108	box	12	1	13	25	4	325	1138	20	0	10.0	3250	11375	6500	22750
Knife: Chinesee 109	box	12	1	14	25	4	338	1181	20	0	10.0	3375	11813	6750	23625
Knife: Chinesee 1105	box	12	1	13	24	4	306	1222	20	0	10.0	3055	12220	6110	24440
Knife: Chinesee 1168	box	12	1	12	36	4	414	1656	20	0	10.0	4140	16560	8280	33120
Knife: Chinesee 1174	box	12	2	10	29	5	290	1305	20	0	10.0	2900	13050	5800	26100
Knife: Chinesee 1177	box	12	1	7	32	6	224	1344	0	32	10.0	2240	13440	4480	26880
Knife: Chinesee 1178	box	12	1	7	30	6	210	1260	20	0	10.0	2100	12600	4200	25200
Knife: Chinesee 202	box	12	1	8	32	7	236	1536	12	0	6.0	1418	9214	2835	18428
Knife: Chinesee 204	box	12	1	10	16	5	355	1775	12	0	6.0	2130	10650	4260	21300
Knife: Chinesee 205	box	12	2	10	10	5	300	1350	12	0	6.0	1800	8100	3600	16200
Knife: Kiwi 172	box	12	1	9	30	4	270	1080	12	2	7.0	1890	7560	3240	12960
Knife: Kiwi 173	box	12	1	9	30	4	270	1080	12	2	7.0	1890	7560	3240	12960
Knife: Kiwi 193	box	12	0	7	22	3	154	462	60	10	35.0	5390	16170	9240	27720
Knife: Kiwi 194	box	12	0	7	23	3	158	473	60	10	35.0	5513	16538	9450	28350
Knife: Kiwi 195	box	12	0	7	25	3	172	515	60	10	35.0	6003	18008	10290	30870
Knife: Kiwi 21	box	12	2	9	33	4	297	1188	12	2	7.0	2079	8316	3564	14256
Knife: Kiwi 22	box	12	2	9	33	4	297	1188	12	2	7.0	2079	8316	3564	14256
Knife: Kiwi 246	box	12	1	9	30	35	251	8776	12	2	7.0	1755	61434	3009	105315
Knife: Kiwi 247	box	12	1	9	31	4	264	1054	12	2	7.0	1845	7378	3162	12648
Knife: Kiwi 474	box	12	1	10	23	4	214	748	25	5	15.0	3206	11222	5344	18703
Knife: Kiwi 475	box	12	1	10	23	4	214	748	25	5	15.0	3206	11222	5344	18703
Knife: Kiwi 476	box	12	1	11	29	4	319	1276	25	5	15.0	4785	19140	7975	31900
Knife: Kiwi 477	box	12	1	11	29	4	319	1276	25	5	15.0	4785	19140	7975	31900
Knife: Kiwi 501	box	12	0	6	24	3	141	423	60	10	35.0	4935	14805	8460	25380
Knife: Kiwi 502	box	12	0	6	24	3	141	423	60	10	35.0	4935	14805	8460	25380
Knife: Vegetable, Wildman ,small	bundle	120	4	14	18	35	252	8820	12	2	7.0	1764	61740	3024	105840
Knife: Vegetable, Wildman 1 blade	bundle	120	7	16	24	40	376	14852	12	2	7.0	2632	103964	4512	178224
Knife: Vegetable, Wildman 2 blades	bundle	120	7	16	24	40	376	14852	12	2	7.0	2632	103964	4512	178224
Ladle: Belanine	carton	144	7	25	33	18	825	14850	20	0	10.0	8250	148500	16500	297000
Ladle: Chinese pattern	carton	600	25	36	46	35	1656	57960	3	0	2.0	3312	115920	4968	173880
Ladle: Colorful handle	carton	300	18	26	39	35	1014	35490	11	1	6.0	6084	212940	11154	390390
Latex glue 5 Bahi	carton	288	14	39	42	30	1617	48510	2	0	1.0	1617	48510	3234	97020
Latex glue10 Bahi	carton	144	17	37	47	33	1739	57387	3	0	1.5	2609	86081	5217	172161
Leather polish: Kiwi, Black	carton	48	6	22	48	65	1056	68640	6	1	4.0	5280	343200	9504	617760
Leather polish: Kiwi, Brown	carton	48	6	22	48	65	1056	68640	6	1	4.0	5280	343200	8448	549120
Leather polish: Kiwi, Classic Black	carton	48	6	22	48	65	1056	68640	6	1	4.0	4224	274560	6336	411840
Leather polish: Kiwi, Classic Brown	carton	48	6	22	48	65	1056	68640	6	1	4.0	4224	274560	6336	411840
Light bulb of Flashlight: 24V No 1	carton	1000	3	24	28	19	672	12432	2	0	1.0	672	12432	1344	24864
Light bulb of Flashlight: 24V No 2	carton	1000	3	21	28	19	672	12432	2	0	1.0	672	12432	1344	24864
Light bulb of Flashlight: 24V No 3	carton	1000	3	24	28	19	672	12432	3	1	2.0	1344	24864	2016	37296
Light bulb of Flashlight: 24V No 4	carton	1000	3	24	28	19	672	12432	3	1	2.0	1344	24864	2016	37296
Light bulb of Flashlight: 24V No 5	carton	1000	3	24	28	19	672	12432	2	0	1.0	672	12432	1344	24864

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Light bulb Superlamp 200W	carton	25	2	41	41	15	1681	25215	20	0	10.0	16810	252150	33620	504300
Lubricant oil for machinery: flat bottle	carton	144	10	33	17	33	545	17969	6	1	4.0	2178	71874	3267	107811
Lubricant oil for machinery: round bottle	carton	144	12	35	40	29	1400	40600	12	2	7.0	9800	284200	16800	487200
Lunch box 584-2	parcel	144	4	45	60	25	2700	67500	5	1	3.0	8100	202500	13500	337500
Lunch box 921	parcel	48	7	27	44	50	1188	59400	2	0	1.0	1188	59400	2376	118800
Lunch box 922	parcel	36	4	25	50	65	1250	81250	5	1	3.0	3750	243750	6250	406250
Lunch box 923	parcel	48	6	22	56	60	1232	73920	4	1	3.0	3696	221760	4928	295680
Magnifying glass	carton	400	20	36	57	37	2024	73858	2	0	1.0	2024	73858	4047	147716
Meji color pen	carton	240	15	31	67	31	2077	64387	3	0	2.0	4154	128774	6231	193161
Menthol Mid	carton	30	9	24	34	20	799	15980	5	0	3.0	2397	47940	3995	79900
Mentholated ointment	carton	288	35	38	53	23	2014	46322	3	1	2.0	4028	92644	6042	138966
Metal polisher Big, Brasso	carton	12	6	21	27	19	567	10773	12	2	7.0	3969	75411	6804	129276
Metal polisher Medium, Brasso	carton	12	3	17	22	16	366	5848	11	1	6.0	2193	35088	4021	64328
Metal polisher Big, Vnol	carton	20	3	22	22	15	473	7095	22	2	12.0	5676	85140	10406	156090
Metal polisher Small, Brasso	carton	24	3	22	32	12	704	8096	53	3	28.0	19712	226688	37312	429088
Metal polisher Small, Vnol	carton	20	1	17	18	12	297	3564	22	2	12.0	3564	42768	6534	78408
Milk bottle Kid, Chinese	carton	120	8	35	41	62	1415	87699	7	2	5.0	7073	438495	9902	613893
Mirror with Plastic frame	bundle	24 00	5	37	38	20	1406	28120	11	1	6.0	8436	168720	15466	309320
Mirror with Swinger	parcel	144 00	18	36	46	40	1656	66240	2	0	1.0	1656	66240	3312	132480
Mirror bath room	carton	60 00	6	21	66	27	1386	37422	6	0	3.0	4158	112266	8316	224532
Mirror Flower 10x14 ,hang	small box	12 00	8	16	37	27	592	15984	6	1	4.0	2368	63936	3552	95904
Mirror Flower 12x16 ,hang	small box	12 00	10	16	42	32	672	21504	6	1	4.0	2688	86016	4032	129024
Mirror Flower 14x20 ,hang	small box	12 00	15	15	53	37	795	29415	4	1	3.0	2385	88245	3180	117660
Mirror Flower 7x10 ,hang	small box	12	5	15	27	19	495	7695	11	1	6.0	2430	46170	4455	84645
Mirror Flower 8x12 ,hang	small box	12	7	16	32	22	512	11008	11	1	6.0	3072	66048	5632	121088
Mirror Flower No 10	small box	12	5	15	25	18	363	6525	23	3	13.0	4713	84825	8338	150075
Mirror Flower No 12	small box	12	6	15	27	19	384	7301	11	1	6.0	2306	43805	4227	80308
Mirror Flower No 4	bundle	120	8	23	38	12	874	10488	11	1	6.0	5244	62928	9614	115368
Mirror Flower No.5	bundle	120	11	23	45	13	1035	13455	11	1	6.0	6210	80730	11385	148005
Mirror Flower No 6	small box	12	2	15	18	10	261	2610	35	5	20.0	5220	52200	9135	91350
Mirror Flower No 7	small box	12	2	15	18	14	261	3524	35	5	20.0	5220	70470	9135	123323
Mirror Flower No 8	small box	12	3	15	20	14	290	4060	23	3	13.0	3770	52780	6670	93380
Mirror Flower No 9	small box	12	3	15	21	16	305	4720	23	3	13.0	3959	61357	7004	108554
Mosquitoes wiping stick container	parcel	60	12	42	65	25	2698	67438	22	2	12.0	32370	809250	59345	1483625
Mosquitoes wiping stick container: long	bundle	120	7	29	43	31	1247	38657	3	0	2.0	2494	77314	3741	115971
Mop with round fabric	bundle	12 00	9	8	140	15	1120	16800	12	2	7.0	7840	117600	13440	201600
Mosquitoes wiping joss stick Dragon	carton	96	12	37	48	22	1776	39072	22	2	12.0	21312	468864	39072	859584
Mosquitoes wiping reagent Ko-Yo-15	carton	288	3	31	36	14	1116	15624	11	1	6.0	6696	93744	12276	171864
Mothball ATM, big	carton	144 00	14	34	50	13	1700	22100	12	2	7.0	11900	154700	20400	265200
Mothball ATM, small	carton	144 00	6	27	38	11	1026	10773	12	2	7.0	7182	75411	12312	129276
Mothball Big pack 1x2	carton	144 00	9	30	40	25	1200	30000	5	0	3.0	3600	90000	6000	150000
Mothball Jumbo size	carton	25 00	25	36	48	26	1728	44064	5	0	3.0	5184	132192	8640	220320
Mothball Kilo	carton	25 00	25	35	42	24	1470	35280	12	2	7.0	10290	246960	17640	423360
Mothball Small pack	carton	144 00	7	25	38	22	950	20900	11	1	6.0	5700	125400	10450	229900
Nail cleaning brush 1lg, transparent	carton	180	5	32	40	17	1280	21120	6	1	4.0	5120	84480	7680	126720
Nail cleaning brush: flat iron shape	carton	72	5	31	32	22	992	21824	7	1	4.0	3968	87296	6944	152768
Nail cutter 129	carton	600	26	26	50	20	1300	26000	12	2	7.0	9100	182000	15600	312000
Nail cutter 211	carton	600	10	23	46	18	1058	19044	5	0	3.0	3174	57132	5290	95220

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm 3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2 )	Cubic space(cm3)	Area ( cm2 )	Cubic space(cm3)
Nail cutter 309	carton	1200	23	36	40	20	1440	28800	6	1	4.0	5760	115200	8640	172800
Nail cutter 600	carton	1200	28	39	40	18	1560	28080	6	1	4.0	6240	112320	9360	168480
Nail cutter 602	carton	1200	30	34	34	15	1139	17085	5	0	3.0	3417	51255	5695	85425
Nail cutter 777, 211	small box	12	1	8	10	3	80	200	50	0	25.0	2000	5000	4000	10000
Nail cutter 999, Big	small box	12	1	8	9	3	72	216	50	0	25.0	1800	5400	3600	10800
Nail cutter 999, Small	small box	12	0	6	8	3	45	113	100	0	50.0	2250	5625	4500	11250
Nail polisher Big size	carton	216	28	35	39	36	1365	49140	6	1	4.0	5460	196560	8190	294840
Nail polisher Small size	carton	360	30	26	31	52	806	41912	2	0	1.0	806	41912	1612	81824
Nail polisher Square bottle	carton	360	34	33	43	47	1419	66693	11	1	6.0	8514	400158	15609	733623
Nipple Akasen L	carton	288 00	4	27	35	28	945	26460	6	1	4.0	3780	105840	5670	158760
Nipple Akasen M	carton	288 00	4	27	35	28	945	26460	6	1	4.0	3780	105840	5670	158760
Nipple Akasen S	carton	288 00	4	27	35	28	945	26460	6	1	4.0	3780	105840	5670	158760
Nipple Kiki L	carton	288 00	5	27	51	19	1377	26163	6	1	4.0	5508	104652	8262	156978
Nipple Kiki M	carton	288 00	5	27	51	19	1377	26163	6	1	4.0	5508	104652	8262	156978
Nipple Kiki S	carton	288 00	5	27	51	19	1377	26163	6	1	4.0	5508	104652	8262	156978
Nipple Pegen L	carton	720 00	12	45	55	30	2475	74250	2	0	1.0	2475	74250	4950	148500
Nipple Pegen M	carton	720 00	12	45	55	30	2475	74250	2	0	1.0	2475	74250	4950	148500
Nipple Pegen S	carton	720 00	12	45	55	30	2475	74250	2	0	1.0	2475	74250	4950	148500
Olive oil Big size	carton	216	28	35	39	36	1365	49140	6	1	4.0	5460	196560	8190	294840
Olive oil Small size	carton	360	30	26	31	52	806	41912	2	0	1.0	806	41912	1612	81824
One baht cotton wool	parcel	2500	7	70	50	120	3500	420000	4	0	2.0	7000	840000	14000	1680000
Padlock black, long 32mm	small box	6	1	10	13	4	124	494	40	0	20.0	2470	9880	4940	19760
Padlock black, long 38mm	small box	6	1	12	13	5	156	702	30	0	15.0	2340	10530	4680	21060
Padlock black, long 38mm	wooden crate	180	20	37	48	16	1776	28416	2	0	1.0	1776	28416	3552	56832
Padlock black, long 50mm	small box	6	2	13	16	5	208	1040	10	0	5.0	1040	5200	2080	10400
Padlock black, short 25mm 999	small box	6	0	5	10	4	50	175	110	10	60.0	3000	10500	5500	19250
Padlock black, short 32mm	small box	6	1	6	13	4	78	312	40	0	20.0	1560	6240	3120	12480
Padlock black, short 32mm 999	carton	240	20	27	31	16	837	12974	3	0	2.0	1674	25947	2511	38921
Padlock black, short 38 mm	small box	6	1	10	13	5	130	585	40	0	20.0	2600	11700	5200	23400
Padlock black, short 38mm 999	carton	240	20	27	45	23	1215	27945	2	0	1.0	1215	27945	2430	55890
Padlock black, short 50mm 5 rings	carton	120	21	28	35	18	980	17640	3	0	2.0	1960	35280	2940	52920
Padlock black, short 50mm 5 rings	carton	60	20	31	31	20	961	19220	4	0	2.0	1922	38440	3844	76880
Padlock black, short 50mm 999	small box	6	2	9	15	6	135	810	10	0	5.0	675	4050	1350	8100
Padlock brass, long 32mm	small box	6	1	10	13	4	130	520	40	0	20.0	2600	10400	5200	20800
Padlock brass, long 38mm	small box	6	1	12	13	5	150	673	30	0	15.0	2243	10091	4485	20183
Padlock brass, short 20 mm	small box	12	0	5	13	3	65	195	50	0	25.0	1625	4875	3250	9750
Padlock brass, short 32mm	small box	12	1	6	13	4	78	312	80	0	40.0	3120	12480	6240	24960
Padlock gold, long 25mm	small box	12	1	8	10	6	76	456	20	0	10.0	760	4560	1520	9120
Padlock gold, long 32mm	wooden crate	240	21	41	41	19	1681	31939	3	0	2.0	3362	63878	5043	95817
Padlock gold, long 38mm 5 rings	wooden crate	180	20	37	48	16	1776	28416	3	0	2.0	3552	56832	5328	85248
Padlock gold, long 50mm	small box	6	2	13	16	6	208	1248	12	2	7.0	1456	8736	2496	14976
Padlock gold, long 50mm	wooden crate	600	20	27	45	18	1215	21870	2	0	1.0	1215	21870	2430	43740
Padlock gold, short 25mm	wooden crate	240	21	31	52	16	1612	25792	11	1	6.0	9672	154752	17372	283712
Padlock gold, short 32mm	wooden crate	240	21	41	41	19	1681	31939	3	0	2.0	3362	63878	5043	95817
Padlock gold, short 38mm	small box	6	1	7	13	5	91	410	90	10	50.0	4550	20475	8190	36855
Padlock gold, short 38mm	wooden crate	240	20	27	41	18	1161	20898	5	0	3.0	3483	62694	5805	104490
Padlock gold, short 50mm	small box	6	2	9	16	6	144	792	280	0	10.0	1440	7920	2880	15840
Padlock gold, short 50mm	carton	60	21	28	35	18	980	17640	4	0	2.0	1960	35280	3920	70560

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm <sup>2</sup> )	Cubic space of unit type( cm <sup>3</sup> )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )	Area ( cm <sup>2</sup> )	Cubic space(cm <sup>3</sup> )
Padlock Solo 25mm, pack	small box	6	0	5	11	7	55	165	100	0	50.0	2750	8250	5500	16500
Padlock Solo 30mm No 84	small box	12	1	8	13	6	98	585	10	0	5.0	488	2925	975	5850
Padlock Solo 35mm, pack	small box	12	2	9	13	6	117	702	20	0	10.0	1170	7020	2340	14040
Padlock Solo 35mm, pack	carton	12	3	22	30	14	645	9030	5	0	3.0	1935	27090	3225	45150
Padlock Solo 40mm, pack	small box	12	2	9	13	7	117	819	20	0	10.0	1170	8190	2340	16380
Padlock Solo 40mm, pack	carton	12	3	22	30	14	645	9030	5	0	3.0	1935	27090	3225	45150
Padlock Solo 45mm, pack	carton	12	4	22	30	14	645	9030	5	0	3.0	1935	27090	3225	45150
Padlock Solo 50mm	small box	6	2	9	13	6	111	608	20	0	10.0	1105	6078	2210	12155
Padlock Solo 50mm, pack	carton	12	4	22	30	14	645	9030	5	0	3.0	1935	27090	3225	45150
Padlock Solo 55mm, pack	carton	12	4	22	30	14	645	9030	5	0	3.0	1935	27090	3225	45150
Padlock VITA long, 40mm	small box	12	4	15	23	11	345	3795	12	2	7.0	2415	26565	4140	45540
Padlock VITA long, 45mm	small box	12	4	15	23	11	345	3795	12	2	7.0	2415	26565	4140	45540
Padlock VITA long, 50mm	small box	12	5	15	23	11	345	3795	12	2	7.0	2415	26565	4140	45540
Padlock VITA short, 40mm	small box	12	4	15	23	11	345	3795	12	2	7.0	2415	26565	4140	45540
Padlock VITA short, 45mm	small box	12	4	15	23	11	345	3795	12	2	7.0	2415	26565	4140	45540
Padlock VITA short, 50mm	small box	12	5	15	23	11	345	3795	12	2	7.0	2415	26565	4140	45540
Padlock Wolf 20mm	small box	12	0	5	9	3	45	135	100	0	50.0	2250	6750	4500	13500
Padlock Wolf 20mm	carton	1200	28	26	39	20	995	19393	2	0	1.0	995	19393	1989	38786
Padlock Wolf 25mm	small box	12	0	6	10	5	57	285	50	0	25.0	1425	7125	2850	14250
Padlock Wolf 25mm	carton	600	21	26	31	21	806	16926	2	0	1.0	806	16926	1612	33852
Padlock Wolf 30mm	small box	12	1	6	9	5	54	270	50	0	25.0	1350	6750	2700	13500
Padlock Wolf 30mm	carton	600	27	29	35	22	998	21945	2	0	1.0	998	21945	1995	43890
Padlock Wolf 40mm	small box	12	1	9	11	7	89	580	10	0	5.0	446	2901	893	5801
Padlock Wolf 40mm	carton	240	21	22	36	19	792	15048	2	0	1.0	792	15048	1584	30096
Padlock Wolf 50mm	small box	12	1	10	11	9	110	4950	10	0	5.0	550	4950	1100	9900
Padlock Wolf 50mm	carton	120	25	23	40	12	889	10221	3	0	2.0	1778	20441	2666	30662
Padlock World 50mm	wooden crate	120	21	29	40	20	1160	23200	3	0	2.0	2320	46400	3480	69600
Painting brush No 1	bundle(box)	60	2	9	20	32	180	5760	5	1	3.0	540	17280	900	28800
Painting brush No 1.5	bundle(box)	60	2	9	20	32	180	5760	5	1	3.0	540	17280	900	28800
Painting brush No 2	bundle(box)	60	2	13	22	29	286	8294	5	1	3.0	858	24882	1430	41470
Painting brush No 2.5	bundle(box)	60	2	9	20	32	180	5760	2	0	1.0	180	5760	360	11520
Painting brush No 3	bundle(box)	60	2	9	20	32	180	5760	2	0	1.0	180	5760	360	11520
Painting brush No 4	bundle(box)	60	2	9	20	32	180	5760	2	0	1.0	180	5760	360	11520
Pen cleaning brush: meal of coconut 2014	carton	60	4	32	45	19	1424	27056	12	2	7.0	9968	189392	17088	324672
paper card: gold seam 007	carton	144	25	32	37	27	1184	31968	11	1	6.0	7104	191808	13024	351648
paper card Thai	carton	240	12	35	44	19	1540	29260	21	1	11.0	16940	321860	32340	614460
paper card Winner	carton	144	8	28	34	26	952	24752	2	0	1.0	952	24752	1904	49504
Pen Diamond	carton	1000	9	40	49	18	1960	34100	5	0	3.0	5880	102900	9800	171500
Pen Lancer 626 Blue	carton	1000	7	16	43	16	1548	24768	6	1	4.0	6192	99072	9288	148608
Pen Lancer 813 Black	carton	1000	8	16	43	16	1548	24768	3	0	2.0	3096	49536	4644	74304
Pen Lancer 813 Blue	carton	1000	8	16	43	16	1548	24768	5	1	3.0	4644	74304	7740	123840
Pen Lancer 813 Red	carton	1000	8	16	43	16	1548	24768	4	1	3.0	4644	74304	6192	99072
Pen Lancer 825 Black	carton	1000	9	16	45	16	1620	25920	7	1	4.0	6480	103680	11340	181440
Pen Lancer 825 Blue	carton	1000	9	16	45	16	1620	25920	8	1	5.0	8100	129600	12960	207360
Pen Lancer 825 Red	carton	1000	9	16	45	16	1620	25920	8	1	5.0	8100	129600	12960	207360
Pen Lancer 878 Black	carton	1000	7	10	45	11	1150	14850	11	1	6.0	8100	89100	14850	163350
Pen Lancer 878 Blue	carton	1000	7	10	45	11	1150	14850	11	1	6.0	8100	89100	14850	163350
Pen Lancer 878 Red	carton	1000	7	10	45	11	1150	14850	11	1	6.0	8100	89100	14850	163350

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm 3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm 2 )	Cubic space(cm3)	Area ( cm 2 )	Cubic space(cm3)
Pen Lancer 915 Black	carton	1000	7	36	43	17	1548	26316	3	0	2.0	3096	52632	4644	78948
Pen Lancer 915 Blue	carton	1000	7	36	43	17	1548	26316	5	1	3.0	4644	78948	7740	131580
Pen Lancer 915 Red	carton	1000	7	36	43	17	1548	26316	4	1	3.0	4644	78948	6192	105264
Pencil muti-head	carton	2880	20	42	52	35	2184	76440	2	0	1.0	2184	76440	4368	152880
Pencil muti-head, Diamond	carton	288	2	22	22	16	462	7396	14	2	8.0	3698	59168	6472	103344
Perfume gel G&G	carton	144	12	27	42	21	1600	38400	3	0	2.0	3200	76800	4800	115200
Photo Album Big size	bundle	12	4	17	30	35	495	17325	5	0	3.0	1485	51975	2475	86625
Photo Album Jumbo size	bundle	12	2	14	19	31	265	8246	5	0	3.0	798	24738	1330	41230
Photo Album Medium size	bundle	12	4	8	24	37	192	7104	5	0	3.0	576	21312	960	35520
Photo Album Small size	bundle	12	2	12	15	29	180	5220	10	0	5.0	900	26100	1800	52200
pincer with cutting head diamond	carton ( small )	6	1	9	17	4	151	516	20	0	10.0	1530	5155	3060	10710
pincer with sharp head diamond	carton ( small )	6	4	8	17	4	136	476	22	2	12.0	1632	5712	2992	10472
pincer: diamond	carton ( small )	6	4	8	17	4	136	476	44	4	24.0	3264	11424	5984	20944
Pingpong ball orange	carton	480	48	53	87	51	4611	235161	2	0	1.0	4611	235161	9222	470322
Pingpong ball white	carton	480	48	53	87	51	4611	235161	1	0	1.0	4611	235161	4611	235161
Plastic bag with lock	bundle	24	2	28	41	29	1148	33292	5	0	3.0	3444	99876	5740	166460
Plastic binder	carton	120	4	36	38	29	1368	39672	10	0	5.0	6840	198360	13680	396720
Plastic bucket: 3.5	bundle	12	5	36	36	51	1296	66096	6	0	3.0	3888	198288	7776	396576
Plastic bucket Black 16	bundle	12	6	32	32	52	1024	53248	4	0	2.0	2048	106496	4096	212992
Plastic bucket Black 18	bundle	12	8	33	33	60	1089	65340	6	0	3.0	3267	196020	6534	392040
Plastic bucket Yellow 2.5	bundle	12	4	27	27	52	729	37908	12	2	7.0	5103	265356	8748	454896
Plastic bucket Yellow 3.5	bundle	12	4	29	29	53	841	44573	7	1	4.0	3364	178292	5887	312011
Plastic bucket Yellow 4.5	bundle	12	6	31	31	62	961	59582	5	0	3.0	2883	178746	4805	297910
plastic card Winner 222	carton	144	25	32	38	27	1216	32224	6	1	4.0	4864	128896	7296	193344
Plastic fork short	parcel	2000	9	14	30	55	420	23100	3	0	2.0	840	46200	1260	69300
Plastic spoon long	parcel	2000	9	14	30	55	420	23100	3	0	2.0	840	46200	1260	69300
Plastic spoon short	parcel	2000	7	14	32	40	448	17920	6	1	4.0	1792	71680	2688	107520
Plastic spoon-fork	carton	12	4	20	32	14	640	8960	22	2	12.0	7680	107520	14080	197120
Plug head Black	bundle	300	2	10	18	35	180	6300	12	2	7.0	1260	44100	2160	75600
Plug head White	bundle	300	5	10	18	46	180	8280	11	1	6.0	1080	49680	1980	91080
Plug Receptable head Black	bundle	1500	4	9	18	45	162	7290	7	1	4.0	648	29160	1134	51030
Pollution filter clothes blue	bundle	600	5	29	42	22	1218	26796	22	2	12.0	14616	321552	26796	589512
Pot mender	bundle	20	3	36	39	3	1404	4212	6	1	4.0	5616	16848	8424	25272
Power line of a flat iron	carton	50	6	27	35	31	945	29295	4	1	3.0	2835	87885	3780	117180
Power line of a frying pan	carton	50	6	27	35	31	945	29295	4	1	3.0	2835	87885	3780	117180
Power line of a pot	carton	50	5	27	35	31	945	29295	4	1	3.0	2835	87885	3780	117180
Power plug receptable 10M, AMC	carton	24	10	36	47	19	1692	32148	6	1	4.0	6768	128592	10152	192888
Power plug receptable 10M, Motto	carton	24	10	36	47	19	1692	32148	12	2	7.0	11844	225036	20304	385776
Power plug receptable 2001-10	carton	24	7	26	44	26	1122	29172	6	1	4.0	4488	116688	6732	175032
Power plug receptable 2001-11	carton	24	7	26	44	26	1122	29172	6	1	4.0	4488	116688	6732	175032
Power plug receptable 2001-5	carton	24	11	29	53	18	1537	27666	6	1	4.0	6148	110664	9222	165996
Power plug receptable 2001-8	carton	24	9	26	44	26	1122	29172	6	1	4.0	4488	116688	6732	175032
Power plug receptable 2001-9	carton	24	8	26	44	26	1122	29172	6	1	4.0	4488	116688	6732	175032
Power plug receptable 20M, AMC	carton	12	9	40	42	16	1680	26880	5	0	3.0	5040	80640	8400	134400
Power plug receptable 5M, Motto	carton	24	5	16	47	19	1692	32148	12	2	7.0	11844	225036	20304	385776
Power plug receptable 8M, AMC	carton	24	8	16	47	19	1692	32148	6	1	4.0	6768	128592	10152	192888
Power plug receptable Nagas 10M	carton	24	11	31	55	20	1705	34100	12	2	7.0	11935	238700	20460	409200
Power plug receptable Nagas 5M	carton	24	6	31	55	20	1705	34100	12	2	7.0	11935	238700	20460	409200



Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm 3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm 2 )	Cubic space(cm3)	Area ( cm 2 )	Cubic space(cm3)
Power plug receptable Nagas 8M	carton	24	10	31	55	20	1705	34100	12	2	7.0	11935	238700	20460	409200
Power plug receptable NS-1 Nakashi	carton	24	6	27	39	17	1053	17901	6	1	4.0	4212	71604	6318	107406
Power plug receptable SU1, triangle shape	carton	24	4	26	43	16	1118	17888	6	1	4.0	4472	71552	6708	107328
Price tag Shooter	carton	30	11	48	31	41	1488	61008	4	0	2.0	2976	122016	5952	244032
Price Tag sticker	carton	10	4	13	30	23	390	8970	11	1	6.0	2340	53820	4290	98670
Pumping tube plastic	carton	120	11	33	65	63	2145	135135	11	1	6.0	12870	810810	23595	1486485
Razor 4 pieces in one pack	carton	960	25	37	45	49	1665	81585	4	1	2.0	3310	163170	5828	285548
Razor Double blades SuperMax	carton	144	6	33	41	40	1353	54120	5	0	3.0	4059	162360	6765	270600
Razor Fancy	carton	360	6	38	41	45	1558	70110	12	2	7.0	10906	490770	18696	841320
Razor Feather	parcel	144	5	13	36	48	468	22464	3	0	2.0	936	44928	1404	67392
Razor Gillette Thin 2	carton	288	1	40	65	13	2600	33800	53	3	28.0	72800	946400	137800	1791400
Razor Green Sayuri	carton	360	6	38	40	47	1520	70680	2	0	1.0	1520	70680	3040	141360
Razor Karat	bundle	120	7	15	29	48	428	20520	6	1	4.0	1710	82080	2565	123120
Razor S Doll	carton	3000	25	27	40	45	1080	48600	6	1	4.0	4320	194400	6480	291600
Razor single blades Gillette Click	carton	144	12	36	55	18	1980	35640	27	2	15.0	29700	534600	53460	962280
Razor with 2 blades	carton	480	16	45	58	40	2610	104400	5	0	3.0	7830	313200	13050	522000
Razor with Nail cutter	carton	360	6	39	20	45	780	35100	4	1	3.0	2340	105300	3120	140400
Razor Yellow Sayuri	carton	360	6	38	40	47	1520	70680	3	0	2.0	3040	141360	4560	212040
Razor Doctoril	carton	720	5	36	40	49	1440	70560	6	1	4.0	5760	282240	8640	423360
Razor TCI Set	carton	120	3	29	70	17	2030	34510	6	1	4.0	8120	138040	12180	207060
Razor Blade Atta	Wooden crate	100	25	35	49	30	1715	51450	13	3	8.0	13720	411600	22295	668850
Razor Blade Dorgo	carton	10000	15	35	55	23	1925	44275	5	0	3.0	5775	132825	9625	221375
Razor Blade Feather	carton	100	30	35	54	30	1846	55373	2	0	1.0	1846	55373	3692	110745
Razor Blade SuperMax	carton	100	9	19	44	21	836	17556	2	0	1.0	836	17556	1672	35112
Razor Blade SuperStainless	carton	100	7	20	45	22	900	17800	3	0	2.0	1800	39600	2700	59400
Razor Blade Superthin	carton	100	9	20	45	22	900	19800	3	0	2.0	1800	39600	2700	59400
Refilled Gas Buca Jumbo	carton	12	4	21	28	21	588	12348	22	2	12.0	7056	148176	12936	271656
Refilled Gas Buca Small	carton	288	1	30	45	44	1350	59400	6	1	4.0	5400	237600	8100	356400
Ring 500 pieces chain	carton	5000	13	26	34	25	884	22100	6	1	4.0	3536	88400	5304	132600
Ring Big size	parcel	3600	15	20	32	20	640	12800	11	1	6.0	3840	76800	7040	140800
Ring Medium size	parcel	7200	10	21	30	25	630	15750	4	1	3.0	1890	47250	2520	63000
Ring Small size	parcel	7200	8	20	32	20	640	12800	3	1	2.0	1280	25600	1920	38400
Rubber binder big	bundle	20	10	35	33	12	1155	13860	6	1	4.0	4620	55440	6930	83160
Rubber binder small	bundle	20	10	35	33	12	1155	13860	6	1	4.0	4620	55440	6930	83160
Rubber gloves Canon, L	small box	12.00	1	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Canon, M	small box	12.00	1	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Canon, S	small box	12.00	1	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Dragon, L	carton	240.00	20	17	74	43	2738	117734	5	0	3.0	8214	353202	13690	588670
Rubber gloves Dragon, M	carton	240.00	20	17	74	43	2738	117734	5	0	3.0	8214	353202	13690	588670
Rubber gloves Dragon, S	carton	240.00	20	17	74	43	2738	117734	5	0	3.0	8214	353202	13690	588670
Rubber gloves OK, 7.5, cream color	carton	144.00	24	35	46	42	1610	67620	1	0	1.0	1610	67620	1610	67620
Rubber gloves OK, 7.5, orange color	carton	144.00	24	35	46	42	1610	67620	1	0	1.0	1610	67620	1610	67620
Rubber gloves OK, 8.5, cream color	carton	144.00	24	35	46	42	1610	67620	1	0	1.0	1610	67620	1610	67620
Rubber gloves OK, 8.5, orange color	carton	144.00	24	35	46	42	1610	67620	1	0	1.0	1610	67620	1610	67620
Rubber gloves Panda, Black, L	small box	12.00	2	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Panda, Black, M	small box	12.00	2	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Panda, Black, S	small box	12.00	2	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Panda, Goose, 7.5, Pink	small box	12.00	1	15	34	10	493	4930	1	0	1.0	493	4930	493	4930

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Rubber gloves Panda, Goose, 8.5, Pink	small box	12.00	1	15	34	10	493	4930	1	0	1.0	493	4930	493	4930
Rubber gloves Panda, Orange, L	small box	12.00	2	15	36	10	522	5220	4	0	2.0	1044	10440	2088	20880
Rubber gloves Panda, Orange, M	small box	12.00	2	15	36	10	522	5220	3	0	2.0	1044	10440	1566	15660
Rubber gloves Panda, Orange, S	small box	12.00	2	15	36	10	522	5220	3	0	2.0	1044	10440	1566	15660
Rubber gloves PVC, White, M	carton	1,000.00	16	27	58	32	1566	50112	10	0	5.0	7830	250560	15660	501120
Rubber gloves Sun, Orange,L	small box	12.00	1	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Sun, Orange,M	small box	12.00	1	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rubber gloves Sun, Orange,S	small box	12.00	1	15	36	10	522	5220	1	0	1.0	522	5220	522	5220
Rug egg shape	parcel	50	20	40	90	30	3600	108000	5	1	3.0	10800	324000	18000	540000
Rug heart shape	parcel	50	20	40	90	30	3600	108000	5	1	3.0	10800	324000	18000	540000
Rug round shape	parcel	50	20	40	90	30	3600	108000	5	1	3.0	10800	324000	18000	540000
Rug small	carton	100	25	47	60	40	2820	112800	6	1	4.0	11280	451200	16920	676800
Rug square shape	parcel	50	20	35	42	60	1470	88200	5	1	3.0	4410	264600	7350	441000
Rug weaved	parcel	50	25	45	80	32	3600	115200	7	1	4.0	14400	460800	25200	806400
Sauce bottle Orange	parcel	144	5	25	60	70	1500	105000	2	0	1.0	1500	105000	3000	210000
Sauce bottle Transparency	parcel	144	5	25	60	70	1500	105000	3	0	2.0	3000	210000	4500	315000
Saving box Big cylinder A	bundle	36	6	22	88	20	1936	38720	1	0	1.0	1936	38720	1936	38720
Saving box Fat A	bundle	60	4	34	32	40	1088	43520	5	1	3.0	3264	130560	5440	217600
Saving box Giant A	bundle	36	7	43	53	49	2279	111671	2	0	1.0	2279	111671	4558	223342
Saving box Medium A	bundle	60	7	44	54	40	2376	95040	2	0	1.0	2376	95040	4752	190080
Saving box Medium A, Kid	bundle	60	5	33	53	41	1749	71709	2	0	1.0	1749	71709	3498	143418
Saving box Medium B	bundle	60	7	44	54	40	2376	95040	2	0	1.0	2376	95040	4752	190080
Saving box Star, S100-4	bundle	144	6	50	70	30	3500	105000	2	0	1.0	3500	105000	7000	210000
Saving box Star, S1005-4	bundle	144	6	40	75	30	3000	90000	2	0	1.0	3000	90000	6000	180000
Saving box Tiny A	bundle	120	6	32	59	26	1888	49088	3	0	2.0	3776	98176	5664	147264
Scissors 8 inches, 999	carton	240	18	40	96	50	3840	192000	3	2	3.0	11520	576000	11520	576000
Scissors Bee, 304	carton	600	15	40	42	34	1680	57120	1	0	1.0	1680	57120	1680	57120
Scissors Chinese yellow handle	carton	84	10	18	22	15	396	5940	5	0	3.0	1188	17820	1980	29700
Scissors Jasmine	carton	600	10	32	37	30	1184	35520	6	1	4.0	4736	142080	7104	213120
Scissors Mei, Nanhui	box	12	1	10	16	5	155	775	45	5	25.0	3875	19375	6975	34875
Scissors Orange handle	box	6	1	27	18	28	1026	28728	70	10	40.0	41040	1149120	71820	2010960
Scissors paper set	carton	600	17	43	23	31	968	29509	11	1	6.0	5805	177053	10643	324596
Scissors Rose, 304	carton	600	15	40	42	34	1680	57120	6	1	4.0	6720	228480	10080	342720
Scissors Rose, 11	box	12	1	9	20	8	170	1360	45	5	25.0	4250	34000	7650	61200
Scissors Rose, 518	box	12	1	9	20	8	170	1360	45	5	25.0	4250	34000	7650	61200
Scissors Rose, 917	box	12	1	9	20	8	170	1360	45	5	25.0	4250	34000	7650	61200
Scissors Rubber handle size 1	box	12	2	11	22	10	242	2420	3	1	2.0	484	4840	605	6050
Scissors Rubber handle size 2	carton	120	19	23	54	23	1242	28566	3	1	2.0	2484	57132	3105	71415
Scissors Rubber handle size 3	carton	120	18	26	21	42	546	22932	3	1	2.0	1092	45864	1365	57330
Scissors thread, black	box	240	5	13	45	15	579	8678	14	2	8.0	4628	69420	8099	121485
Scissors Wildman 03A	box	12	1	9	20	8	180	1440	23	3	13.0	2340	18720	4140	33120
Scissors Wildman 04A	box	12	1	9	20	8	180	1440	23	3	13.0	2340	18720	4140	33120
Scissors Wildman 05A	box	12	1	10	25	12	250	3000	22	2	12.0	3000	36000	5500	66000
Screw driver 2 pieces in set	carton	360	24	28	28	40	784	31360	2	0	1.0	784	31360	1568	62720
Screw driver 4 pieces in set	carton ( small )	12	1	9	18	12	149	1785	40	0	20.0	2975	35700	5950	71400
Screw driver for electrical test	carton ( small )	12	1	8	20	5	146	658	50	0	25.0	3656	16453	7113	32906
Screw driver for watch	carton	120	16	31	45	27	1395	36968	6	1	4.0	5580	147870	8370	221805
Screw driver with 3 inches punch head	carton ( small )	12	1	7	17	4	107	429	48	0	24.0	2574	10296	5148	20592

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm 3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Screw driver with 4 inches punch head	carton ( small )	12	1	7	19	5	133	599	48	0	24.0	3192	14364	6384	28728
Screw driver with switching head	carton	480	27	38	2	38	76	2888	3	0	2.0	152	5776	228	8664
Scrubber with Handle Black	carton	12.00	1	31	31	14	961	13454	22	2	12.0	11532	161448	21142	295988
Scrubber with sponge Merrybrit, Twin	carton	288.00	4	38	75	38	2831	106163	23	3	13.0	36803	1380113	65113	2441738
Scrubber 3M	carton	200.00	4	37	66	25	2442	61050	52	2	27.0	65934	1648350	126984	3174600
Scrubber Bigsize 1mx2m	bundle	5.00	10	70	120	15	8400	126000	5	0	3.0	25200	378000	42000	630000
Scrubber Diamond	carton	1,000.00	11	50	80	52	4000	208000	11	1	6.0	24000	1248000	44000	2288000
Scrubber Elephant	parcel	500.00	7	47	47	39	2209	86151	11	1	6.0	13254	516906	24299	947661
Scrubber Merbrite Original	carton	360.00	6	34	45	44	1530	67320	25	5	15.0	22950	1009800	38250	1683000
Scrubber Set 10	carton	144.00	12	55	88	46	4840	222640	3	0	2.0	9680	445280	14520	667920
Scrubber Set 11	carton	216.00	18	46	95	45	4370	196650	3	0	2.0	8740	393300	13110	589950
Scrubber Set 14	carton	144.00	20	44	67	46	2948	135608	3	0	2.0	5896	271216	8844	406824
Scrubber Set 1x3	parcel	144.00	4	54	52	37	2808	103896	5	1	3.0	8424	311688	14040	519480
Shoe brush Herping	carton	300	20	24	64	44	1504	66176	11	1	6.0	9024	397056	16544	727936
Shoe polish big, black	carton	72	10	30	31	25	915	22418	12	2	7.0	6405	156923	10980	269010
Shoe polish small, black	carton	144	9	23	31	27	713	19251	22	2	12.0	8556	231012	15686	423522
Shoe polish small, brown	carton	144	9	23	31	27	713	19251	12	2	7.0	4991	134757	8556	231012
Shoe rope 24 inches, Black	parcel	120	5	22	55	10	1210	12100	1	0	1.0	1210	12100	1210	12100
Shoe rope 24 inches, Black, Big	parcel	60	5	23	32	30	736	22080	1	0	1.0	736	22080	736	22080
Shoe rope 24 inches, Black, Flat	parcel	60	3	20	33	29	660	19140	1	0	1.0	660	19140	660	19140
Shoe rope 24 inches, Brown	parcel	120	5	22	55	10	1210	12100	1	0	1.0	1210	12100	1210	12100
Shoe rope 24 inches, Brown, Big	parcel	60	5	23	32	30	736	22080	1	0	1.0	736	22080	736	22080
Shoe rope 24 inches, Brown, Flat	parcel	60	3	20	33	29	660	19140	1	0	1.0	660	19140	660	19140
Shoe rope 24 inches, Dark brown	parcel	120	5	22	55	10	1210	12100	1	0	1.0	1210	12100	1210	12100
Shoe rope 24 inches, Dark brown, Big	parcel	60	5	23	32	30	736	22080	1	0	1.0	736	22080	736	22080
Shoe rope 24 inches, Dark brown, Flat	parcel	60	3	20	33	29	660	19140	1	0	1.0	660	19140	660	19140
Shoe rope 24 inches, White	parcel	120	5	22	55	10	1210	12100	1	0	1.0	1210	12100	1210	12100
Shoe rope 24 inches, White, Big	parcel	60	5	23	32	30	736	22080	1	0	1.0	736	22080	736	22080
Shoe rope 24 inches, White, Flat	parcel	60	3	20	33	29	660	19140	1	0	1.0	660	19140	660	19140
Shoe rope 36 inches, Black	parcel	120	3	25	65	12	1625	19500	1	0	1.0	1625	19500	1625	19500
Shoe rope 36 inches, Black, Big	parcel	60	8	28	28	40	784	31360	1	0	1.0	784	31360	784	31360
Shoe rope 36 inches, Black, Flat	parcel	60	4	30	30	40	900	36000	1	0	1.0	900	36000	900	36000
Shoe rope 36 inches, Brown	parcel	120	3	25	65	12	1625	19500	1	0	1.0	1625	19500	1625	19500
Shoe rope 36 inches, Brown, Big	parcel	60	8	28	28	40	784	31360	1	0	1.0	784	31360	784	31360
Shoe rope 36 inches, Brown, Flat	parcel	60	4	30	30	40	900	36000	1	0	1.0	900	36000	900	36000
Shoe rope 36 inches, Dark brown	parcel	120	3	25	65	12	1625	19500	1	0	1.0	1625	19500	1625	19500
Shoe rope 36 inches, Dark brown, Big	parcel	60	8	28	28	40	784	31360	1	0	1.0	784	31360	784	31360
Shoe rope 36 inches, Dark brown, Flat	parcel	60	4	30	30	40	900	36000	1	0	1.0	900	36000	900	36000
Shoe rope 36 inches, White	parcel	120	3	25	65	12	1625	19500	1	0	1.0	1625	19500	1625	19500
Shoe rope 36 inches, White, Big	parcel	60	8	28	28	40	784	31360	1	0	1.0	784	31360	784	31360
Shoe rope 36 inches, White, Flat	parcel	60	4	30	30	40	900	36000	1	0	1.0	900	36000	900	36000
Shoe rope 42 inches, Black, Big	parcel	60	7	29	29	46	841	38686	1	0	1.0	841	38686	841	38686
Shoe rope 42 inches, Black, Flat	parcel	60	6	29	29	46	841	38686	2	0	1.0	841	38686	1682	77372
Shoe rope 42 inches, Brown, Big	parcel	60	7	29	29	46	841	38686	1	0	1.0	841	38686	841	38686
Shoe rope 42 inches, Brown, Flat	parcel	60	6	29	29	46	841	38686	2	0	1.0	841	38686	1682	77372
Shoe rope 42 inches, Dark brown, Big	parcel	60	7	29	29	46	841	38686	1	0	1.0	841	38686	841	38686
Shoe rope 42 inches, Dark brown, Flat	parcel	60	6	29	29	46	841	38686	2	0	1.0	841	38686	1682	77372
Shoe rope 42 inches, Mix, Flat	parcel	60	6	29	29	46	841	38686	3	0	2.0	1682	77372	2521	116058

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm 3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Shoe rope 42 inches, White, Big	parcel	60	7	29	29	46	841	38686	1	0	1.0	841	38686	841	18686
Shoe rope 42 inches, White, Flat	parcel	60	6	29	29	46	841	38686	2	0	1.0	841	38686	1682	77372
Shoe rope 48 inches, Black, Flat	parcel	60	8	30	30	56	900	50400	1	0	1.0	900	50400	900	50400
Shoe rope 48 inches, Brown, Flat	parcel	60	8	30	30	56	900	50400	1	0	1.0	900	50400	900	50400
Shoe rope 48 inches, White, Flat	parcel	60	8	30	30	56	900	50400	1	0	1.0	900	50400	900	50400
Shoe rope 60 inches, Black, Big	parcel	60	11	30	30	66	900	59400	1	0	1.0	900	59400	900	59400
Shoe rope 60 inches, Black, Flat	parcel	60	9	30	30	63	900	56700	1	0	1.0	900	56700	900	56700
Shoe rope 60 inches, Brown, Big	parcel	60	11	30	30	66	900	59400	1	0	1.0	900	59400	900	59400
Shoe rope 60 inches, Brown, Flat	parcel	60	9	30	30	63	900	56700	1	0	1.0	900	56700	900	56700
Shoe rope 60 inches, White, Big	parcel	60	11	30	30	66	900	59400	1	0	1.0	900	59400	900	59400
Shoe rope 60 inches, White, Flat	parcel	60	9	30	30	63	900	56700	1	0	1.0	900	56700	900	56700
Shoe rubber G2-1	small box	48 00	1	10	20	17	200	3400	54	4	29.0	5800	98600	10800	183600
Shoe rubber G2-4	small box	48 00	1	10	20	17	200	3400	54	4	29.0	5800	98600	10800	183600
Shoe rubber G3-1	small box	48 00	1	10	20	17	200	3400	54	4	29.0	5800	98600	10800	183600
Shoe rubber G3-4	small box	48 00	1	10	20	17	200	3400	54	4	29.0	5800	98600	10800	183600
Shoe rubber Kiwi, Black	carton	48	10	21	46	17	956	16244	8	0	4.0	3822	64974	7644	129948
Shoe rubber Kiwi, Brown	carton	48	10	21	46	17	956	16244	5	0	3.0	2867	48731	4778	81218
Shoe rubber Kiwi, White	carton	48	10	21	46	17	956	16244	5	0	3.0	2867	48731	4778	81218
Shoe supporter Lady, 10 kgs	carton	120 00	6	35	45	24	1575	37800	2	0	1.0	1575	37800	3150	75600
Shoe supporter Man, 10 kgs	carton	120 00	6	35	45	24	1575	37800	2	0	1.0	1575	37800	3150	75600
Shoes hanger	carton	60	7	36	50	37	1800	66600	5	0	3.0	5400	199800	9000	333000
Shon Clipping Blade Dragonfly	carton	7200	30	27	36	21	972	20412	11	1	6.0	5832	122472	10692	224532
Shower cap cartoon pattern, big	bundle	300	8	30	40	30	1200	36000	4	0	2.0	2400	72000	4800	144000
Shower cap cartoon pattern, small	bundle	300	7	30	35	30	1050	31500	4	0	2.0	2100	63000	4200	126000
Shower cap finesse, big	hundle	360	9	26	65	18	1690	30420	4	0	2.0	3380	60840	6760	121680
Shower cap finesse, small	bundle	360	6	25	45	25	1125	28125	4	0	2.0	2250	56250	4500	112500
Shower cap big	bundle	360	10	25	50	25	1250	31250	4	0	2.0	2500	62500	5000	125000
Shower cap small	bundle	360	6	25	50	25	1250	31250	4	0	2.0	2500	62500	5000	125000
Shower sponge Jolly 001	carton	144	4	30	50	50	1500	75000	2	0	1.0	1500	75000	3000	150000
Shower sponge Jolly 002	carton	144	4	30	50	50	1500	75000	3	0	2.0	3000	150000	4500	225000
Shower sponge Jolly 003	carton	144	4	30	50	50	1500	75000	2	0	1.0	1500	75000	3000	150000
Shower sponge Jolly 004	carton	144	4	30	50	50	1500	75000	18	3	11.0	16500	825000	27000	1350000
Shower sponge with Shower Cream	big parcel	500	12	120	110	40	13200	528000	5	1	3.0	39600	1584000	66000	2640000
Shower sponge Natural	carton	36	2	29	31	20	899	17980	10	0	5.0	4495	89900	8990	179800
Showering head spray	carton	12	2	24	21	15	492	7380	20	0	10.0	4920	73800	9840	147600
shrink adhesive tape 1 inch	carton	400	5	23	35	31	805	24955	6	1	4.0	3220	99820	4830	149730
shrink adhesive tape 1 inch big size	carton	72	4	21	32	30	672	20160	5	0	3.0	2016	60480	3360	100800
shrink adhesive tape 1.5 inch big size	carton	48	4	21	32	30	672	20160	5	0	3.0	2016	60480	3360	100800
shrink adhesive tape 2 inch big size	carton	36	4	21	32	30	672	20160	5	0	3.0	2016	60480	3360	100800
shrink adhesive tape 3/4 inch	carton	500	5	23	35	31	805	24955	6	1	4.0	3220	99820	4830	149730
shrink adhesive tape 3/4 inch big size	carton	72	4	21	32	30	672	20160	5	0	3.0	2016	60480	3360	100800
Soap box 2 slots	parcel	72	4	25	47	25	1175	29175	12	2	7.0	8225	205625	14100	352500
Soap box 351P Transparent	sack	144	5	45	72	53	3240	171720	2	0	1.0	3240	171720	6480	343440
Soap box 351P White	sack	144	5	45	72	53	3240	171720	2	0	1.0	3240	171720	6480	343440
Soap box 771	parcel	144	4	20	44	55	880	48400	7	2	5.0	4400	242000	6160	338800
Soap box K'ak	bundle	60	3	22	22	44	484	21296	8	2	5.0	2420	106480	3872	170368
Soap box Pearl	parcel	144	4	42	47	30	1974	59220	11	1	6.0	11844	355320	21714	651420
Soap box Shuyung	parcel	72	4	26	34	50	884	44200	8	2	5.0	4420	221000	7072	353600

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2 )	Cubic space(cm3)	Area ( cm2 )	Cubic space(cm3)
Soap box Transparent stripes	sack	144	4	20	45	60	900	54000	7	2	5.0	4500	270000	6300	378000
Soap box White stripes	sack	144	4	20	45	60	900	54000	7	2	5.0	4500	270000	6300	378000
Soap Big Tamarine	carton	120	16	35	40	22	1400	30800	2	0	1.0	1400	30800	2800	61600
Soap Ginger	carton	300	25	21	41	30	61	25830	5	0	3.0	2583	77490	4305	129150
Soap kok-leang	carton	72	5	21	40	20	840	16800	5	0	3.0	2520	50400	4200	84000
Soap Laura	carton	120	22	26	33	40	858	34320	5	0	3.0	2574	102960	4290	171600
Soap Small Cucumber	carton	144	8	32	38	14	1216	17024	2	0	1.0	1216	17024	2432	34048
Soap Tamarine	carton	240	11	27	39	26	1053	27378	2	0	1.0	1053	27378	2106	54756
Soap Ya-Un	carton	72	6	25	32	25	800	20000	11	1	6.0	4800	120000	8800	220000
Socks business Mix color	parcel	120	4	26	40	20	1040	20800	18	3	11.0	11440	228800	18720	374400
Socks short Mix color	parcel	120	3	26	40	18	1040	18720	12	2	7.0	7280	131040	12480	226400
Spoon Elephant short	carton	1440	15	29	41	29	1189	34481	11	1	6.0	7134	206886	13079	379291
Spoon Panda short	carton	1440	20	28	29	39	812	31668	23	3	13.0	10556	411684	18676	728364
Spoon short Zebra	carton	1440	32	29	44	29	1240	35953	11	1	6.0	7439	215717	13637	395480
Stainless Cutter L-120	carton	240	7	23	42	36	945	34020	6	1	4.0	3780	136080	5670	204120
Stainless spoon coffee	carton	288	4	14	20	14	280	3920	11	1	6.0	1680	23520	3080	43120
Stainless spoon Jet	carton	1440	20	29	34	28	969	27132	11	1	6.0	5814	162792	10659	298452
Stainless spoon-fork#C	carton	576	24	25	40	29	980	27930	11	1	6.0	5880	167580	10780	307230
Staple wire	carton	30	17	23	38	22	874	19228	6	1	4.0	3496	76912	5244	115368
Stapler	carton	240	8	30	37	39	1110	43290	6	1	4.0	4440	173160	6660	259740
Steel pot stand	carton	120	10	40	44	25	1738	43450	6	1	4.0	6952	173800	10428	260700
Super Glue Ateco	carton	288	7	39	40	45	1560	70200	14	4	9.0	14040	631800	21840	982800
Super Glue Chinese	carton	600	10	41	82	29	3321	96309	6	1	4.0	13284	385236	19926	577854
Super Glue Kenji	carton	288	6	30	41	44	1230	54120	6	1	4.0	4920	216480	7380	324720
Tape Cleanser set	carton	40	4	32	54	15	1728	25920	4	1	3.0	5184	77760	6912	103680
Tape 2 side glue Loise size 1x1	carton	288	4	25	36	31	900	27900	22	2	12.0	10800	334800	19800	613800
Tape Box closer murky color	carton	72	5	28	36	30	1008	30240	17	2	10.0	10080	302400	17136	514080
Tape Box closer transparency	carton	72	5	28	36	30	1008	30240	12	2	7.0	7056	211680	12096	362880
Tape Osaka 1meter	carton	600	8	40	51	26	2040	53040	4	1	3.0	6120	159120	8160	212160
Tape transparency 1/2 inch 36 yard	carton	72	5	30	40	17	1200	20400	5	0	3.0	3600	61200	6000	102000
Tape transparency 1/2 inch 10 yard	carton	2304	15	35	37	27	1295	34965	5	0	3.0	3885	104895	6475	174825
Tape transparency 1/2 inch 3 yards	carton	1440	8	34	50	20	1700	34000	5	0	3.0	5100	102000	8500	170000
Tape transparency 1/2 inch 36 yard, big	carton	144	5	30	40	17	1200	20400	15	0	10.0	12000	204000	18000	306000
Tape transparency 1/2 inch 36 yard, small	carton	288	10	29	42	17	1218	20706	5	0	3.0	3654	62118	6090	103530
Tape transparency 1/2 inch 72 yard	carton	144	10	36	46	15	1656	24840	5	0	3.0	4968	74520	8280	124200
Tape transparency 3/4 inch 36 yard	carton	96	5	30	40	17	1200	20400	10	0	5.0	6000	102000	12000	204000
Tape transparency 3/4 inch 72 yard	carton	84	10	36	46	15	1656	24840	5	0	3.0	4968	74520	8280	124200
Ten baht cotton wool	parcel	240	8	45	45	80	2025	162000	5	0	3.0	6075	486000	10125	810000
Thread 1 baht, YNC Black	bundle	1440	6	23	26	53	598	31395	2	0	1.0	598	31395	1196	62790
Thread 1 baht, YNC Dark gray	bundle	1440	6	23	26	53	598	31395	2	0	1.0	598	31395	1196	62790
Thread 1 baht, YNC Mix	bundle	1440	6	23	26	53	598	31395	2	0	1.0	598	31395	1196	62790
Thread 1 baht, YNC White	bundle	1440	6	23	26	53	598	31395	2	0	1.0	598	31395	1196	62790
Thread 1 baht, YNC Yellow	bundle	1440	6	23	26	53	598	31395	2	0	1.0	598	31395	1196	62790
Thread 10 baht set, Mix	bundle	120	3	20	26	23	520	11960	6	1	4.0	2080	47840	3120	71760
Thread 10 baht set, White-Black	bundle	120	3	24	24	39	576	22176	6	1	4.0	2304	88704	3456	133056
Thread A Black	parcel	1440	5	14	14	60	196	11760	3	0	2.0	392	23520	588	35280
Thread A Dark gray	parcel	1440	5	14	14	60	196	11760	3	0	2.0	392	23520	588	35280
Thread A Mix	parcel	1440	5	14	14	60	196	11760	3	0	2.0	392	23520	588	35280

Table B.3: The storage analysis chart (Cont.)

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Thread A White	parcel	1440	5	14	14	60	196	11760	3	0	2.0	392	23520	588	35280
Thread A White-Black	parcel	1440	5	14	14	60	196	11760	3	0	2.0	392	23520	588	35280
Thread Pink set	carton	360	25	57	73	41	4161	170601	2	0	1.0	4161	170601	8322	341202
Thread Sailing ship, Black	parcel	72	2	22	20	17	429	7293	12	2	7.0	3003	51051	5148	87516
Thread Sailing ship, Mix	parcel	72	2	22	20	17	429	7293	12	2	7.0	3003	51051	5148	87516
Thread Sailing ship, White	parcel	72	2	22	20	17	429	7293	12	2	7.0	3003	51051	5148	87516
Tissue box	bundle	60	5	48	57	35	2736	95760	4	0	2.0	5472	191520	10944	383040
Toothbrush: 12 in one box, Mediun Victory	carton	144	6	26	33	20	858	17160	11	1	6.0	5148	102960	9438	188760
Toothbrush 12 in one box, Soft Victory	carton	144	6	26	33	20	858	17160	23	3	13.0	11154	223080	19734	394680
Toothbrush 3 in one pack JGA, transparent	carton	432	16	46	57	27	2622	70794	3	0	2.0	5244	141588	7866	212382
Toothbrush 3 in one pack JGA, turbid	carton	432	16	46	57	27	2622	70794	3	0	2.0	5244	141588	7866	212382
Toothbrush 30 in one box, Mediun Victory	carton	120	5	26	33	23	858	19734	10	0	5.0	4290	98670	8580	197340
Toothbrush 30 in one box, Soft Victory	carton	120	5	26	33	23	858	19734	10	0	5.0	4290	98670	8580	197340
Toothbrush CASA, 203	carton	600	13	46	61	28	2806	78568	5	0	3.0	8418	235704	14030	392840
Toothbrush CASA, 204	carton	600	13	46	61	28	2806	78568	5	0	3.0	8418	235704	14030	392840
Toothbrush CASA, 205	carton	600	13	46	61	28	2806	78568	5	0	3.0	8418	235704	14030	392840
Toothbrush CASA, 207	carton	600	13	46	61	28	2806	78568	5	0	3.0	8418	235704	14030	392840
Toothbrush CASA, 208	carton	600	13	46	61	28	2806	78568	5	0	3.0	8418	235704	14030	392840
Toothbrush CASA, 210	carton	600	13	46	61	28	2806	78568	5	0	3.0	8418	235704	14030	392840
Toothbrush Chinese, Adult 650	carton	1200	16	24	44	66	1056	69696	3	0	2.0	2112	139392	3168	209088
Toothbrush Chinese, Adult 940	carton	1200	15	47	48	37	2256	83472	2	0	1.0	2256	83472	4512	166944
Toothbrush Chinese, Kid	carton	720	10	25	46	44	1150	50600	2	0	1.0	1150	50600	2300	101200
Toothbrush JAGA, 674	carton	600	10	46	57	27	2622	70794	7	1	4.0	10488	283176	18354	495558
Toothbrush JAGA, 690	carton	600	10	46	57	27	2622	70794	7	1	4.0	10488	283176	18354	495558
Toothbrush JAGA, 698	carton	600	10	46	57	27	2622	70794	7	1	4.0	10488	283176	18354	495558
Toothbrush JAGA, 699	carton	600	10	46	57	27	2622	70794	7	1	4.0	10488	283176	18354	495558
Toothbrush JAGA, 739	carton	600	10	46	57	27	2622	70794	7	1	4.0	10488	283176	18354	495558
Toothbrush JAGA, 740	carton	600	10	46	57	27	2622	70794	7	1	4.0	10488	283176	18354	495558
Toothbrush Jomana	carton	288	3	21	44	19	924	17556	63	3	33.0	30492	579348	58212	1106028
Toothbrush Kid, Komo	carton	576	7	29	43	47	1247	58609	5	0	3.0	3741	175827	6235	293045
Toothbrush OralB Med	carton	96	3	24	38	25	881	22031	12	2	7.0	6169	154219	10575	264375
Toothbrush OralB Soft	carton	96	3	24	38	25	881	22031	23	3	13.0	11456	286406	20269	506719
Toothbrush OSAKA, 204	carton	480	8	26	43	59	1097	64694	6	0	3.0	3290	194081	6579	388161
Toothbrush OSAKA, 205	carton	480	8	26	43	59	1097	64694	6	0	3.0	3290	194081	6579	388161
Toothbrush OSAKA, 206	carton	480	8	26	43	59	1097	64694	6	0	3.0	3290	194081	6579	388161
Toothbrush Popular Eastman	carton	144	4	23	47	27	1081	29187	10	0	5.0	5405	145935	10810	291870
Toothbrush Slim Victory	carton	144	4	38	38	27	1444	38988	12	2	7.0	10108	272916	17328	467856
Toothbrush Soft, transparent Eastman	carton	300	20	20	64	44	1280	56320	22	2	12.0	15360	675840	28160	1239040
Toothpast squeezer murky	parcel	120	6	23	50	18	1150	20700	6	1	4.0	4600	82800	6900	124200
Toothpast squeezer transparency	parcel	120	6	23	50	18	1150	20700	3	0	2.0	2300	41400	3450	62100
Toothpick Kilo	carton	40.00	20	28	43	38	1204	45752	3	0	2.0	2408	91504	3612	137256
Toothpick 1x10	carton	30.00	21	33	35	35	1155	40425	12	2	7.0	8085	282975	13860	485100
Toothpick 2in1	carton	240.00	12	30	39	44	1170	51480	10	0	5.0	5850	257400	11700	514800
Toothpick Bamboo, Large	carton	120.00	7	25	33	29	825	23925	12	2	7.0	5775	167475	9900	287100
Toothpick Bamboo, Medium	carton	192.00	10	25	34	28	850	23800	6	1	4.0	3400	95200	5100	142800
Toothpick Bamboo, Small	carton	300.00	12	25	33	29	825	23925	2	0	1.0	825	23925	1650	47850
Toothpick Bandang, Medium	carton	360.00	16	34	38	38	1256	47738	22	2	12.0	15075	572850	27638	1050225
Topknot of Pot's cover Big	carton	600	25	35	65	45	2275	102375	1	0	1.0	2275	102375	2275	102375

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Topknot of Pot's cover: Medium	carton	600	25	35	65	45	2275	102375	1	0	1.0	2275	102375	2275	102375
Topknot of Pot's cover: Size	carton	720	25	32	45	50	1440	72000	1	0	1.0	1440	72000	1440	72000
Tradition razor	carton	3000	18	30	45	48	1350	64125	6	1	4.0	5400	256500	8100	384750
trash dipper with handle slot: grade A	carton	12	4	42	67	13	2814	36582	13	3	8.0	22512	292656	36582	475566
trash dipper: grade A	bundle	72	7	20	48	33	960	31680	5	1	3.0	2880	95040	4800	158400
trash dipper: small size 34.5	carton	36	5	32	50	23	1600	36800	7	2	5.0	8000	184000	11200	257600
U-lock: 3 pieces	small box	12	2	10	16	5	160	800	20	0	10.0	1600	8000	3200	16000
U-lock: Harry Master, 11.5	small box	24	3	14	22	5	297	1337	23	3	13.0	3861	17375	6831	30740
U-lock: Harry Master, 55	small box	24	1	7	18	3	114	341	23	3	13.0	1479	4436	2616	7849
U-lock: Harry Master, 75	small box	24	1	9	19	4	171	599	23	3	13.0	2223	7781	3933	13766
U-lock: Harry Master, 95	small box	24	2	12	23	4	259	906	23	3	13.0	3364	11773	5951	20829
Wall hooker 1x3	carton	160.00	8	35	47	29	1645	47705	6	1	4.0	6580	190820	9870	286230
Wall hooker 1x8	carton	200.00	9	36	36	29	1296	37584	6	1	4.0	5184	150336	7776	225504
Wall hooker 3 in a row	bundle	60.00	4	24	24	30	576	17280	2	0	1.0	576	17280	1152	34560
Wall hooker 4 in a row	bundle	60.00	5	24	33	30	776	23265	2	0	1.0	776	23265	1551	46530
Wall hooker 5 in a row	bundle	60.00	6	24	24	30	576	17280	2	0	1.0	576	17280	1152	34560
Wall hooker: Fancy	carton	720.00	12	42	49	49	2058	100842	4	1	3.0	6174	302526	8232	403368
Water bottle 1x3	parcel	72	5	44	87	25	3828	95700	5	1	3.0	11484	287100	19140	478500
Water bottle 1x3: Square shape	parcel	36	3	40	50	50	2000	100000	10	2	6.0	12000	600000	20000	1000000
Water bottle 1x4	parcel	48	3	45	57	25	2565	64125	10	2	6.0	15390	384750	25650	641250
Water bottle: 558	carton	72	8	42	48	49	2016	98784	2	0	1.0	2016	98784	4032	197568
Water bottle: Pumpkin 711	parcel	72	5	43	65	27	2795	75465	2	0	1.0	2795	75465	5590	150930
Water bottle: Pumpkin sport	parcel	72	6	45	58	28	2610	73080	2	0	1.0	2610	73080	5220	146160
Water bottle: pushed, small	parcel	72	4	53	53	28	2809	78652	2	0	1.0	2809	78652	5618	157304
Water canteen: 022	carton	24	5	30	34	50	1020	51000	6	1	4.0	4080	204000	6120	306000
Water canteen: 999, soldier	carton	12	2	32	38	26	1216	31616	10	0	5.0	6080	158080	12160	316160
Water canteen: 999-2 5, Perfect	carton	12	6	40	56	45	2240	100800	3	0	2.0	4480	201600	6720	302400
Water canteen: Leo	carton	72	10	39	52	51	2028	103428	2	0	1.0	2028	103428	4056	206856
Water canteen: Ice cream 618	carton	72	11	36	50	64	1782	114048	2	0	1.0	1782	114048	3564	228096
Water canteen: Ikkusang8, No 468D	carton	72	6	32	47	52	1504	77456	5	1	3.0	4512	232368	7520	387280
Water canteen No 111	carton	72	6	34	66	43	2211	93968	3	1	2.0	4422	187935	6633	281903
Water canteen: No 469X	carton	72	6	32	47	58	1504	86480	2	0	1.0	1504	86480	3008	172960
Water canteen: No 486D	carton	48	4	32	48	42	1536	64512	3	0	2.0	3072	129024	4608	193536
Water canteen: No 486X	carton	48	5	32	48	42	1536	64512	4	1	3.0	4608	193536	6144	258048
Water canteen: PB-395	carton	36	4	27	50	35	1322	46654	4	1	3.0	3965	139963	5287	186617
Water canteen: PB-411	carton	36	4	24	46	41	1106	45022	4	1	3.0	3319	135066	4425	180088
Water canteen: PB-426	carton	36	4	26	51	37	1321	48870	4	1	3.0	3962	146609	5283	195478
Water canteen: PII-457	carton	36	4	26	51	35	1306	45695	4	1	3.0	3917	137084	5222	182778
Water canteen: PII-487	carton	36	9	46	54	38	2506	96215	2	0	1.0	2506	96215	5011	192430
Water canteen: PII-488	carton	36	9	46	50	35	1270	44147	4	1	3.0	3810	133340	5080	177786
Water canteen: PB-493	carton	36	4	26	51	37	1321	48870	4	1	3.0	3962	146609	5283	195478
Water canteen: PB-495	carton	36	4	26	50	35	1295	45706	4	1	3.0	3884	137119	5179	182826
Water canteen: Tommy	carton	72	9	38	56	41	2128	87248	2	0	1.0	2128	87248	4256	174496
Water canteen: P-II	parcel	72	5	20	45	86	900	77400	5	1	3.0	2700	232200	4500	387000
Water filter: 5 level	carton	120	9	40	52	27	2080	55120	3	0	2.0	4160	110240	6240	165360
Water filter: Turbine	carton	120	6	40	52	27	2080	55120	12	2	7.0	14560	385840	24960	661440
Water pourer: Big	bundle	6	4	45	82	35	3690	129150	13	1	7.0	25830	904050	47970	1678950
Water pourer: Medium	bundle	12	4	40	55	46	2200	101200	6	1	4.0	8800	404800	13200	607200

**Table B.3: The storage analysis chart (Cont.)**

English Name	Storage: Unit Load			Size of Storage: Unit type					Storage Quantity			Required Storage space for Average storage quantity		Required Storage space for Maximum storage quantity	
	Type	Capacity	Weight(kg)	Wide(cm)	Length(cm)	Height(cm)	Area of unit type ( cm 2 )	Cubic space of unit type( cm3 )	Maximum storage quantity	Avg. Safety stock	Avg. storage quantity	Area ( cm2)	Cubic space(cm3)	Area ( cm2)	Cubic space(cm3)
Water pourer: Small	bundle	12	4	26	48	42	1248	52416	6	1	4.0	4992	209664	7488	314496
Water sprayer: 1008	carton	24	2	28	40	32	1106	35392	5	0	3.0	3318	106176	5530	176960
Water sprayer: 2 in 1	carton	12	2	40	40	24	1600	38400	6	0	3.0	4800	115200	9600	230400
Water sprayer: 589	carton	24	2	24	38	37	912	33744	12	2	7.0	6384	236208	10944	404928
Water sprayer: 590	carton	24	2	26	38	27	988	26676	12	2	7.0	6916	186732	11856	320112
Water sprayer: Bone shape, Murky	carton	180	12	60	92	30	5520	165600	5	0	1.0	16560	496800	27600	828000
Water sprayer: Bone shape, transparency	carton	180	12	60	92	30	5520	165600	6	1	4.0	22080	662400	33120	993600
Water sprayer: bottle gourd, Star S, 607	carton	24	2	23	38	36	855	30353	6	0	3.0	2565	91058	5130	182115
Water sprayer: Canon, Yellow	carton	12	2	29	33	32	957	30624	14	2	8.0	7656	244992	13398	428736
Water sprayer: foggy	carton	12	1	27	33	23	891	20493	50	0	25.0	22275	512325	44550	1024650
Water sprayer: Lucky, Bell	carton	24	2	27	38	32	1007	32224	14	2	8.0	8056	257792	14098	451136
Water sprayer: Smartwing	bundle	72	8	29	54	70	1566	109620	5	0	3.0	4698	328860	7830	548100
Water sprayer: Solo	carton	60	5	41	41	56	1681	94136	6	0	3.0	5043	282408	10086	564816
Water sprayer: Taiwan, Transparency	carton	12	1	24	33	28	792	22176	17	2	10.0	7920	221760	13464	376992
Wax for Leather Shoe: Small	carton	24	4	30	32	13	960	12480	65	5	35.0	33600	436800	62400	811200
Whetstone	carton	60	31	29	43	17	1247	21199	10	0	5.0	6235	105995	12470	211990
White board pen: pilot, Black	carton	576	10	29	44	22	1262	27753	1	0	1.0	1262	27753	1262	27753
White board pen: pilot, Blue	carton	576	10	29	44	22	1262	27753	1	0	1.0	1262	27753	1262	27753
White board pen: pilot, Red	carton	576	10	29	44	22	1262	27753	1	0	1.0	1262	27753	1262	27753
Wine opener: 800	carton	600	45	45	48	40	2160	86400	11	10	11.0	21760	950400	21760	950400
Wooden Brush: Rose, Clorful fiber	bundle	60	6	16	23	51	368	18768	24	4	14.0	5152	262752	8812	450432
Wooden chopping block	carton	12	8	20	25	20	500	10000	10	0	5.0	2500	50000	5000	100000
Wooden Chopstick	carton	2000	20	25	48	28	1200	33600	6	1	4.0	4800	134400	7200	201600
Wooden color short pen	carton	480	20	28	39	45	1092	49140	2	0	1.0	1092	49140	2184	98280
Wooden Pencil	carton	144	25	30	41	47	1230	57810	2	0	1.0	1230	57810	2460	115620

61610

**Note**

Average storage quantity = Average receiving quantity (R) x 0.5. + Safety stock (S)  
 Required Storage space for Maximum storage quantity = Maximum storage quantity x Cubic space of unit type(cm3)  
 Required Storage space for Average storage quantity = Average storage quantity x Cubic space of unit type(cm3)



**APPENDIX C**  
**DETERMINE STORAGE SPACE**

### **Determine storage space for each item**

The storage space of each item depends on the planning inventory level of that item. Combination system is selected to apply for the storage locator system of this warehouse. Therefore, it needs to plan around the maximum space required by the selected items instead of that required by all items. For the items not in fixed homes, it can be planned around the average quantities on a daily, ongoing basis. So, the fixed location storage is used for the selected items and the random location storage for everything else. So, the required storage cubic space for each item depends on item's characteristic. Each item needs to be considered whether it requires special specific storage location and storage method or not, and quantity of unit load stored in a warehouse.

Therefore, selection of the items that requires special specific storage location and storage method will be considered in the term of weight, size, shape, special storage method and turn-over rate.

**In the term of weight:** From figure 4.2, most items have weight below 30 kg. Then items that have the weight over 30 kg are require special specific storage location. The data of weight comes from the table B.3 in appendix B.

**In the term of size:** From figure 4.3, in the term of width dimension, most items have width dimension below 60 cm. Then items that have the width dimension over 60 cm are considered to require special specific storage location and storage equipment. From figure 4.4, in the term of length dimension, most items have length dimension below 110 cm. Then items that have the length dimension over 100 cm are considered to require special specific storage location and storage equipment. From figure 4.5, in the term of height dimension, most items have height dimension below 70 cm. Then items that have the height dimension over 70 cm are considered to require special specific storage location and storage equipment. These items are considered to require special specific storage location and storage equipment because their dimensions are different from bulk items. The data of size comes from the table B.3 in appendix B.

**In the term of oddly Shape:** Shaft shape items require special s storage method.

**In the term of turn-over rate:** The popularity philosophy maintains that the items having the greatest throughput should be located in an area that allows the

most efficient material handling. Consequently, high-turnover items should be located as close as possible to the point of use. These high turn-over items require special specific storage location. Then storage space planning for these items should be planned around maximum space requirement. The turn-over rate of this thesis means the quantity of items that move in and out in 1 month. The data of turn-over rate comes from the calculation in the following equation.

***Turn-over rate (moving unit per month) = (Average receiving quantity/ Average interval of each ordering) x 30***

: Average receiving quantity comes from the table A.1 in appendix A.

: Average interval of each ordering comes from the table A.2 in appendix A.

Table C.1: Storage Space planning chart

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cube space of unit type( cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cube space(cm <sup>3</sup> )
Cotton wool Shell, pot. JoJo	Normal: class 2	14	44	58	42	107184	15	11	6	6	643.104.00
27 baht cotton wool	Sp - size	12	47	62	80	233120	10	2	1	2	466.240.00
a cigarette lighter: AS	Normal: class 1	20	27	45	28	34020	8	5	3	3	102.060.00
a cigarette lighter: Black Star	Normal: class 1	20	27	45	28	34020	10	5	3	3	102.060.00
a cigarette lighter: Pilot	Normal: class 1	22	27	44	28	33264	3	5	3	3	99.792.00
a cigarette lighter: Rod Star	Normal: class 1	20	27	45	28	34020	15	5	3	3	102.060.00
a cigarette lighter: Red Tai-Yo	Normal: class 1	20	28	46	18	23184	50	55	30	30	695.520.00
a cigarette lighter: Tai-Yo	Normal: class 1	20	28	46	28	36064	57	62	34	34	1.226.176.00
A gas oven: lighter grade A	Normal: class 2	6.5	36	39.5	41	58302	8	6	4	4	233.208.00
A gas oven: lighter grade C	Normal: class 2	9	51	32.5	18.5	30663.75	40	23	13	13	398.628.75
Adhesive tape for wiring( Black)	Normal: class 1	2.00	15.00	33.00	18.00	8910.00	30	33.00	18	18	160.380.00
Adhesive tape for wiring( Black) TOV	Normal: class 2	9.50	35.00	35.00	19.00	23275.00	10	10.00	5	5	116.375.00
Adhesive tape for wiring( Blue)	Normal: class 1	2.00	15.00	33.00	18.00	8910.00	25	25.00	13	13	115.830.00
Adhesive tape for wiring( Green)	Normal: class 1	2.00	15.00	33.00	18.00	8910.00	25	25.00	13	13	115.830.00
Adhesive tape for wiring( Red)	Normal: class 1	2.00	15.00	33.00	18.00	8910.00	25	25.00	13	13	115.830.00
Adhesive tape for wiring( White)	Normal: class 1	2.00	15.00	33.00	18.00	8910.00	25	25.00	13	13	115.830.00
Adhesive tape for wiring( Yellow)	Normal: class 1	2.00	15.00	33.00	18.00	8910.00	25	25.00	13	13	115.830.00
Aluminium foil long	Normal: class 2	9	34	48	22	35904	10	12	7	7	251.328.00
Aluminium foil short	Normal: class 2	4.3	21	31	33	21483	10	12	7	7	150.381.00
Aluminium Mop	Sp- Shaft shepe	4	8	130	16	16640	24	22	12	22	366.080.00
Artificial clay: big size	Normal: class 1	18	25	32	17	13600	20	12	7	7	95.200.00
Artificial clay: small size	Normal: class 2	8	35	42	13	18018	15	11	6	6	108.108.00
Back cleaning brush: Twin	Normal: class 2	4.4	24	39	34	31824	15	12	7	7	222.768.00
Back scratching stick	Normal: class 1	5.3	21	44	20	18480	10	10	5	5	92.400.00
Badminton ball	Normal: class 2	6.5	35	66	41	94710	4	4	2	2	189.420.00
Basket: 436, Shopsticks	Normal: class 2	8.5	30	75	27	60750	2	1	1	1	60.750.00
Basket: CS 014	Normal: class 2	5.8	36	78	25	70200	6	4	3	3	210.600.00
Basket: CS 433 grade A	Normal: class 2	5.8	31	60	26	48360	9	7	4	4	193.440.00
Basket: Spoon, one slot	Normal: class 1	5	28	58	17	27608	2	2	1	1	27.608.00
Bath room cleaner: Jackie, Pink	Normal: class 1	13	29.5	43	24	30444	43	13	8	8	243.552.00
Bath room cleaning brush	Normal: class 2	1.8	35	49	19	30723	50	56	31	31	952.413.00
Bath room cleaning brush: Fish	Normal: class 2	10	45	55	43	106425	8	6	4	4	425.700.00
Bath room cleaning brush: Hama	Normal: class 2	9	35	66	41	94710	10	11	6	6	568.260.00
Bath room cleaning brush: Sack	Sp - size	5	60	60	15	54000	6	5	3	5	270.000.00
Belantine spoon long	Normal: class 1	1.4	14.5	20	11	3190	13	22	12	12	38.280.00
Belantine spoon	Normal: class 1	1.5	17	17	13	3757	20	22	12	12	45.064.00
Book: 10 baht	Normal: class 1	15	25	42	7	16422	12	7	4	4	65.688.00
Book: 5 baht	Normal: class 1	20	24	55	16	21120	6	5	3	3	63.360.00
Book: Drawing, Small	Normal: class 1	20	26	44	19	21736	4	3	2	2	43.472.00
Book: tearable paper: Big	Normal: class 2	25	39	54	19	40014	8	6	4	4	160.056.00
Book: tearable paper: Small	Sp - HighWeight	35	38	67	20	50920	3	2	1	2	101.840.00
Book: tearable paper: without line: Big	Normal: class 2	25	39	49	22	42042	5	4	3	3	126.126.00
Book: tearable paper: without line: Small	Sp - HighWeight	35	38	67	20	50920	2	2	1	2	101.840.00
Bottle cleaning brush: BI with sponge	Normal: class 1	3.1	20	74	15	22200	4	3	2	2	44.400.00
Bottle cleaning brush: Rabbit	Normal: class 1	3	20	74	15	22200	2	3	2	2	44.400.00
Bottle cleaning brush: Twin head	Normal: class 2	3.1	20	78	34	53040	3	3	2	2	106.080.00
Bottle opener: 200	Sp - HighWeight	35	40	50	30	60000	1	3	2	3	180.000.00
Bottle opener: 777	Normal: class 1	1.2	17	23	5	1955	3	6	3	3	5.865.00
Bottle opener: 900	Sp - HighWeight	35	40	50	30	60000	1	3	2	3	180.000.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to Indicate Special Item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Bottle opener A80	Normal class 1	1	10.5	20	7	1470	50	55	30	30	44,100.00
Bowl 16cm. grade A. with handle	Normal class 2	6.8	16	32	60	30720	6	5	3	3	92,160.00
Bowl 16cm. grade B. Mix	Normal class 2	6.8	16	32	60	30720	6	6	4	4	122,880.00
Bowl 18cm. grade B. dark	Normal class 2	5.8	20	40	60	48000	6	5	3	3	144,000.00
Bowl 20A	Normal class 2	5.8	20	40	60	48000	27	12	8	8	384,000.00
Bowl 20cm. grade A. dark	Normal class 2	4.8	18	36	56	36288	24	11	7	7	254,016.00
Bowl 20cm. grade B. dark	Normal class 2	5.8	20	40	60	48000	6	5	3	3	144,000.00
Brooch in Pack	Normal class 2	20	36.6	28.5	36	37551.6	3	3	2	2	75,103.20
Brooch Bec 1	Normal class 1	0.4	10	13	4	520	33	100	50	50	26,000.00
Brooch Bec 2	Normal class 1	0.6	11	13	6	858	33	100	50	50	42,900.00
Brooch Bec 3	Normal class 1	0.5	10	13	5	650	33	100	50	50	32,500.00
Brooch: grade A	Normal class 2	2.6	18	31	40	22320	6	5	3	3	66,960.00
Brooch: Lucky	Normal class 2	3.8	13.5	19	49	12568.5	6	6	4	4	50,274.00
Brooch: Rose 0	Normal class 1	0.3	8.5	14	4	476	100	100	50	50	23,800.00
Brooch: Rose 1	Normal class 1	0.4	9	15	4.5	607.5	67	100	50	50	30,375.00
Brooch: Rose 2	Normal class 1	0.5	9.5	17.5	5	831.25	67	100	50	50	41,562.50
Brooch: Rose 3	Normal class 1	0.4	9	15	4	540	67	100	50	50	27,000.00
Brooch: Rose 4	Normal class 1	0.7	10	19	5	950	100	100	50	50	47,500.00
Brooch: tiny. Gold	Normal class 1	1.3	13	16.5	22	4719	10	11	6	6	28,514.00
Brooch: tiny. White	Normal class 1	1.3	13	16.5	22	4719	20	21	11	11	51,909.00
Broom: water broom	Normal class 2	4	33	96	18	57024	45	32	17	17	969,408.00
Broom: water Samor	Sp - size	12	26	125	17	55250	12	11	6	6	331,500.00
Brush: Black meal of coconut	Normal class 2	4.1	25	56	40	56000	8	6	4	4	224,000.00
Brush: Brass 5 rows	Normal class 2	4.9	12.5	25	30	9375	4	2	1	1	9,375.00
Brush: Brass 6 rows	Normal class 2	5.2	13	25	30	9750	3	2	1	1	9,750.00
Brush: Brass 7 rows	Normal class 2	5.7	13	25	30	9750	3	2	1	1	9,750.00
Brush: Brass 3 Roses	Normal class 2	6.5	16	23	54	19872	21	14	9	9	178,848.00
Brush: Brass Coin	Normal class 2	2.6	22	22	69	33396	18	14	8	8	267,168.00
Brush: Brass Hama	Normal class 1	3.9	25	33	17	14025	30	12	7	7	98,175.00
Brush: Brass Tiger	Normal class 2	2.6	22	22	69	33396	12	14	8	8	267,168.00
Brush: Brown meal of coconut	Normal class 2	4.1	25	56	40	56000	12	7	4	4	224,000.00
Brush: Nylon. Color	Normal class 2	4.6	25	55	33	45375	6	6	4	4	181,500.00
Brush: Nylon Hama	Normal class 1	3.2	25	33	17	14025	43	12	7	7	98,175.00
Brush: Rose. Brass	Normal class 1	4.5	25	25	20	12500	15	11	6	6	75,000.00
Brush: Rose. Milk color	Normal class 2	8	17	25	58	24650	15	12	7	7	172,550.00
Brush: Rose. Transparent color	Normal class 2	4.4	12	23.5	43	12126	20	12	7	7	84,882.00
Buddism Ordaining set: Red	Normal class 2	2.8	40	19	49	37240	20	12	7	7	260,680.00
Buddism Ordaining set: Yellow	Normal class 2	2.8	40	19	49	37240	20	12	7	7	260,680.00
Can opener: 5 rings	Normal class 2	3.6	11	20	34	7480	10	12	7	7	52,360.00
CD Cleanser set	Normal class 2	9	37	37	26	35594	9	3	2	2	71,188.00
Cement cleaning Sponge. Tree	Normal class 2	1.1	50	48	29	69600	20	12	7	7	487,200.00
Chair: CS grade B	Normal class 2	16	40	70	28	78400	5	3	2	2	156,800.00
Chair: M. Big	Sp - size	22	60	103	27	166860	3	3	2	3	500,580.00
chemical pen pilot. small. Black	Normal class 2	21.6	36.5	47.5	29	50278.75	1	2	1	1	50,278.75
chemical pen pilot. small. Blue	Normal class 2	21.6	36.5	47.5	29	50278.75	1	2	1	1	50,278.75
chemical pen pilot. small. Red	Normal class 2	21.6	36.5	47.5	29	50278.75	1	2	1	1	50,278.75
Chopstick	Normal class 2	25	37	68	21	52836	3	5	3	3	158,508.00
Cigarette and lighter container. gastank. blue	Normal class 2	4.8	38	46	30	52440	2	2	1	1	52,440.00
Cigarette and lighter container. gastank. orange	Normal class 2	4.8	38	46	30	52440	2	2	1	1	52,440.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cube space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg storage quantity	Planning storage quantity	cube space(cm <sup>3</sup> )
Cleaning frill: Dozen pack	Normal class 2	2.5	32	32	22	22528	12	10	5	5	112.640.00
Cleaning frill: Kilo	Normal class 2	10	30	65	46	89700	5	5	3	3	269.100.00
Cleaning sponge with net: Merry sponge	Normal class 2	3.9	22.5	64	52	74880	15	12	7	7	524.160.00
Cleaning sponge with net: Modern	Normal class 2	5.8	56	73	60	245280	5	6	4	4	981.120.00
Cleaning sponge with net: House wife	Normal class 2	4.5	50	70	60	210000	15	12	7	7	1.470.000.00
Cleaning sponge with scrubber: Modern	Sp - size	5.5	57	105	28	167580	30	12	7	7	1.173.060.00
Cleaning sponge: 3M. 2 purpose	Normal class 2	4.7	38	66	37	92796	33	52	27	27	2.505.492.00
Cleaning sponge: Hana. L	Sp - size	3.1	60	72	45	194400	4	3	2	3	583.200.00
Cleaning sponge: Tree. L	Normal class 2	2.5	59	69	46	187266	20	12	7	7	1.310.862.00
Cleaning sponge: Tree. M	Sp - size	2.7	63	77	34	164934	8	6	4	6	989.604.00
Cleaning sponge: Tree. S	Normal class 2	2.6	54	68	44	161568	6	6	4	4	646.272.00
Cleaning stainless frill: Big brite	Normal class 2	7	44	45	40	79200	30	12	7	7	554.400.00
Cleaning stainless frill: Poly	Normal class 2	5	43	46	17	33626	30	33	18	18	605.268.00
Cleaning tube	Normal class 1	1.20	19.00	24.00	11.00	5016.00	10	20.00	10	10	50.160.00
Clipboard A5	Normal class 2	15.6	32	48	30	46080	4	2	1	1	46.080.00
Clipper: Black 108	Normal class 2	25.7	44	51	31	69564	6	4	3	3	208.692.00
Clipper: Black 109	Normal class 2	17.5	32	48	32	49152	6	4	3	3	147.456.00
Clipper: Black 110	Normal class 1	1.6	12	16	11	2112	20	11	6	6	12.672.00
Clipper: Black 111	Normal class 1	1	10	21	9	1890	10	12	7	7	15.250.00
Clipper: Black 112	Normal class 1	0.5	17	17	7	2023	20	22	12	12	24.276.00
Clipper: White 0	Normal class 1	1.3	15	23	18	6210	20	22	12	12	74.520.00
Clipper: White 2	Normal class 1	5	11.5	17.5	6	1207.5	30	35	20	20	24.150.00
Clipper: White 3	Normal class 1	5	13.5	16	5.5	1188	30	35	20	20	25.760.00
Clipper: White 4	Normal class 1	0.7	11.5	17.5	6.5	1308.125	30	35	20	20	26.162.50
Clipper: White 5	Normal class 1	0.4	9.5	15.5	4.5	662.625	30	35	20	20	15.252.50
Clipping Blade: Dragonfly	Sp - HighWeight	30	25	33	20	16500	5	6	4	6	99.000.00
Clipping Blade: Sakura	Sp - HighWeight	30	26	33	21	18018	2	2	1	2	56.036.00
Clothes for floor cleaning (Mob)	Sp - HighWeight	36	50	80	25	100000	8	6	4	4	400.000.00
Clothes hanger 222 (wire)	Normal class 2	9	22	67	47	69278	30	6	4	4	277.112.00
Clothes hanger 222 plastic	Normal class 2	5.4	34	34	41	47396	15	12	7	7	551.772.00
Clothes hanger 3 rings	Sp - Turn over	8	44	46	22	44528	600	30	20	30	1.355.840.00
Clothes hanger 5 holes	Normal class 2	5	39.5	53	26	54431	8	6	4	4	217.724.00
Clothes hanger 5 rings	Sp - Turn over	4.9	41	44	21	37884	600	30	20	50	1.156.520.00
Clothes hanger 599: Black	Normal class 2	9	36	38	60	82080	6	6	3	3	246.240.00
Clothes hanger Aluminium 639	Normal class 2	4.7	43	42	29	52374	21	6	4	4	209.496.00
Clothes hanger Aluminium 646	Normal class 2	5.8	43	42	29	52374	26	8	5	5	261.870.00
Clothes hanger: CI	Normal class 2	3	26.5	26.5	37	25983.25	86	23	15	13	357.782.25
Clothes hanger: No 799	Normal class 2	10	34	34	66	76296	15	6	4	4	505.184.00
Clothes hanger PF221	Normal class 2	3.2	25	25	40	25000	60	22	12	12	500.000.00
Clothes hanger: red heart-shaped. 55	Normal class 1	3.6	25.5	41.5	21	22223.25	40	25	15	15	553.348.75
Clothes hanger: red heart-shaped. 99	Normal class 2	4.6	40	55	44	96800	43	12	7	7	677.600.00
Clothes hanger: Round Shape	Normal class 2	3.2	40	56	37	82880	10	6	4	4	551.520.00
Clothes hanger: Square Mini	Normal class 2	3	40	51	25	51000	3	5	3	3	153.000.00
Clothes hanger: Square Twin	Normal class 2	3.7	40	55	38	83600	15	6	4	4	534.400.00
Clothes hanger: Umbrella	Normal class 1	2.8	25	44	23	25300	15	12	7	7	177.100.00
Comb: grade A No 801	Normal class 2	6.8	22.5	25.5	38.5	22089.375	10	6	4	4	88.357.50
Comb: grade A No 802	Normal class 2	6.8	22.5	25.5	38.5	22089.375	10	6	4	4	88.357.50
Comb: grade A No 803	Normal class 2	6.8	22.5	25.5	38.5	22089.375	10	6	4	4	88.357.50
Comb: grade A No 804	Normal class 2	6.8	22.5	25.5	38.5	22089.375	10	6	4	4	88.357.50

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to Indicate Special Item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Comb grade A No.8105	Normal class 2	6.8	22.5	25.5	38.5	22089.375	10	6	4	4	88.357.50
Comb grade A No.811A	Normal class 2	5.4	15	25	53	19875	8	5	3	3	59.625.00
Comb Hair clipper, plastic	Normal class 2	2.4	10	15	36	5400	45	35	20	20	108.000.00
Comb Hair clipper, stainless	Normal class 2	3	10	15	36	5400	15	13	8	8	43.200.00
Cone No1	Normal class 2	8.5	47	65	28	85540	8	5	3	3	256.620.00
Cone No2	Normal class 2	4.5	37	59	26	56758	5	5	3	3	170.274.00
Cone No3	Normal class 2	3.5	30	50	20	30000	6	5	3	3	90.000.00
Cone No4	Sp - size	2	46	125	16	92000	6	5	3	3	276.000.00
Cone No5	Sp - size	3	36	120	14	60480	5	5	3	3	181.440.00
Cotton buds 100 pieces in pack	Normal class 2	10	38	49	48	89376	15	12	7	7	625.652.00
Cotton buds 100 pieces in pack	Normal class 2	9.3	37	44	40	65120	5	11	6	6	390.720.00
Cotton buds 100 pieces in pack	Normal class 2	8.5	43	53	41	93439	2	12	7	7	654.073.00
Cotton buds 50 pieces in pack	Normal class 2	10	42	54	40	90720	12	12	7	7	635.040.00
Cotton buds Fancy Giant size pot	Normal class 2	13	58	80	30	139200	12	2	1	1	139.200.00
Cotton buds Fancy Jumbo Shell Pot	Normal class 2	21	50	67	51	170850	1	6	4	4	683.400.00
Cotton buds Fancy Pot 2 slots	Normal class 2	20	50	67	44	147400	6	6	4	4	589.600.00
Cotton buds Square box, pineapple	Normal class 2	14	35	60	50	105000	10	11	6	6	630.000.00
Cotton buds, transparent small size pot	Normal class 2	9	33	44	41	59532	10	11	6	6	357.192.00
Cotton wool Ambulance bus	Normal class 2	7.5	41	40	32	52480	10	10	5	5	262.400.00
Cup 514 Transparent pattern	Normal class 2	6.2	49	50	31	75950	3	4	3	3	227.850.00
Cup 514 White pattern	Normal class 2	6.2	49	50	31	75950	2	2	1	1	75.950.00
Cup 688 Sakura small	Normal class 2	5.7	40	40	37	59200	6	4	3	3	177.600.00
Cup 002 with Handle	Normal class 2	6	32	46	65	95680	15	12	7	7	669.760.00
Cup 004 with Handle, Cartoon pattern	Normal class 2	5.7	40	45	30	54000	10	11	6	6	324.000.00
Cup 204 with Handle	Normal class 2	2.9	27.5	32	50.5	44440	8	5	3	3	133.320.00
Cup 205 with Handle	Normal class 2	3.1	30.5	49	27.5	41098.75	8	5	3	3	123.296.25
Cup 404 with Handle	Normal class 2	5.2	30	45	56	75600	8	8	5	5	378.000.00
Cup 45 Mitsu with Handle	Normal class 1	1.8	28	52	20	29120	30	24	14	14	407.680.00
Cup 475	Normal class 2	5.6	24	36	50	43200	8	7	5	5	216.000.00
Cup 639 Sakura stripe with Cover	Normal class 2	4.5	28	50	50	70000	12	7	4	4	280.000.00
Cup 733 with Handle	Normal class 2	3.4	21	45	43	40635	15	12	7	7	284.445.00
Cup A3 with Handle	Normal class 2	9	50	50	38	95000	10	10	5	5	475.000.00
Cup Arale	Normal class 2	4.2	46	50	28	64400	15	6	4	4	257.600.00
Cup Freshy	Normal class 2	2.3	19	26	42	20748	20	25	15	15	311.220.00
Cup Frog style 2012	Normal class 2	2	21	30	46	28980	12	10	6	6	173.880.00
Cup Kitty style 2013	Normal class 2	2	21	30	46	28980	12	10	6	6	173.880.00
Cup Marble 004	Normal class 2	5	40	50	28	56000	10	11	6	6	336.000.00
Cup P.S 10 ounces	Normal class 2	6.8	36.5	44	42	67452	7	10	5	5	337.260.00
Cup P.S 12 ounces	Normal class 2	9	37	44	43	70004	10	10	5	5	350.020.00
Cup P.S 70 ounces	Normal class 2	9.5	40	63	40	100800	4	10	5	5	504.000.00
Cup Transparent, pineapple pattern	Normal class 2	6.4	34	48	43	70176	10	7	5	5	350.880.00
Cup Wine	Normal class 2	6.5	31	52	52	83824	3	2	1	1	83.824.00
Curtain hooker Color 1	Normal class 1	9	27.5	33	26.5	24048.75	1	2	1	1	24.048.75
Curtain hooker Color 2	Normal class 1	9	27.5	33	26.5	24048.75	1	2	1	1	24.048.75
Curtain hooker Color 3	Normal class 1	9	27.5	33	26.5	24048.75	1	2	1	1	24.048.75
Curtain hooker Color 4	Normal class 1	9	27.5	33	26.5	24048.75	1	2	1	1	24.048.75
Curtain hooker Color 5	Normal class 1	9	27.5	33	26.5	24048.75	1	2	1	1	24.048.75
Cutter 30-K	Normal class 1	6.6	20	39.5	24	18960	4	2	1	1	18.960.00
Cutter 44-K	Normal class 1	3	20	39.5	24	18960	9	4	3	3	56.880.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to Indice Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Cutter ST-10	Normal class 1	4.2	27.5	34	25	23375	9	4	3	3	70.125 00
Cutter ST-100	Normal class 1	5.5	21	48	16	16128	5	3	2	2	32.256.00
Cutter ST-9	Normal class 1	2.6	23.5	28	21	13818	9	4	3	3	41.454.00
Cutter 3 pieces	Normal class 2	8	27	37	44	43956	17	5	3	3	131.868.00
CutterPI Colorful	Normal class 1	5.1	22	45.5	23	23023	21	6	4	4	92.092.00
CutterPI with Blade	Normal class 2	6.1	35	56	22	43120	5	6	4	4	172.480.00
Dipper with short handle	Normal class 2	25	33	43	34	48246	2	1	1	1	48.246.00
Dish liquid cleanser Cleo	Normal class 1	12	27	38	26	26676	60	55	30	30	800.280.00
Dish liquid cleanser Sunny Wash R011cc	Normal class 2	20	33	44	30	43560	12	10	5	5	217.800.00
Dish soap cleanser	Normal class 1	5	24	29	10	6960	13	25	13	13	90.480.00
Doctor gloves L	Normal class 1	8	27	38	25	25650	3	5	3	3	76.950.00
Doctor gloves M	Normal class 1	8	27	38	25	25650	10	12	7	7	179.550.00
Doctor gloves S	Normal class 1	8	27	38	25	25650	20	22	12	12	307.800.00
Dog chain 20x6	Normal class 2	20	38	38	20	28880	2	3	2	2	57.760.00
Dog chain 22x6	Normal class 2	20	40	40	19	30400	2	3	2	2	60.800.00
Dog chain 25x6	Normal class 2	19	40	40	24	38400	2	3	2	2	76.800.00
Dog chain 30x6	Normal class 2	18	39	39	14	21294	2	3	2	2	42.588.00
Dog chain 35x6	Normal class 2	18	40	40	20	32000	2	3	2	2	64.000.00
Dog chain 45x6	Normal class 2	19	39	40	16	24960	2	3	2	2	49.920.00
Drawer lock	Normal class 1	1.1	11	13	6	858	10	20	10	10	8.580.00
Dry Alcohol cup	Normal class 1	18	26	50	23	29900	5	5	3	3	89.700.00
Dry cell CAT Big	Normal class 1	15.5	21.5	29	20	12470	20	23	13	13	162.110.00
Dry cell CAT Small	Normal class 1	12	21.5	29	20	12470	17	53	28	28	349.160.00
Dry cell Chinese 2A	Normal class 1	17	19	31	27	15903	40	22	12	12	190.836.00
Dry cell Chinese 3A	Normal class 1	18	26	32	15	12480	3	5	4	4	49.920.00
Dry cell Panasonic 2A Alkaline	Normal class 1	9	24	31	23.5	17484	2	2	1	1	17.484.00
Dry cell Panasonic 2A black	Normal class 1	22	18	31	27	15066	4	2	1	1	15.066.00
Dry cell Panasonic 2A green	Normal class 1	20	18	31	27	15066	21	6	4	4	60.264.00
Dry cell Panasonic 2A red	Normal class 1	21	18	31	27	15066	4	2	1	1	15.066.00
Dry cell Panasonic 3A black	Normal class 1	12	25	29	13	9425	2	2	1	1	9.425.00
Dry cell Panasonic 3A Alkaline	Normal class 1	5	25	31	17	13175	2	2	1	1	13.175.00
Dry cell Panasonic 9V square shape	Normal class 1	10	24	24	17	9792	2	2	1	1	9.792.00
Dry cell Panasonic size C Middle	Normal class 1	25	29.5	32.5	23	22051.25	4	4	3	3	66.153.75
Dry cell Panasonic size D Big	Normal class 1	26	29	39	22	24882	5	6	4	4	99.528.00
Elastic fabric 1 inch wide	Normal class 2	10	11	11	42	5082	10	6	4	4	20.328.00
Elastic fabric 10	Normal class 2	10	29	19	40	22040	2	2	1	1	22.040.00
Elastic fabric 11	Normal class 2	12	34	19	40	25840	2	2	1	1	25.840.00
Elastic fabric 14	Normal class 2	14	38	19	40	28880	2	2	1	1	28.880.00
Elastic fabric 16	Normal class 2	16	40	19	40	30400	2	2	1	1	30.400.00
Elastic fabric 3/4 inch wide	Normal class 2	8.5	11	11	42	5082	10	6	4	4	20.328.00
Elastic fabric 4	Normal class 2	4.9	16	19	38	11552	2	2	1	1	11.552.00
Elastic fabric 6	Normal class 2	6.8	18	19	39	13338	2	2	1	1	13.338.00
Elastic fabric 8	Normal class 2	8	22	19	38	15884	2	2	1	1	15.884.00
Envelope airplane pattern	Normal class 2	16	28	50	35	49000	3	2	1	1	49.000.00
Envelope Cartoon pattern	Normal class 2	16	28	50	35	49000	3	2	1	1	49.000.00
Envelope National flag pattern	Normal class 2	16	28	50	35	49000	3	2	1	1	49.000.00
Envelope Pink stripe	Normal class 2	16	28	50	35	49000	6	3	2	2	98.000.00
Envelope Standard size Cartoon	Normal class 2	17	27	60	35	56700	2	2	1	1	56.700.00
Envelope Standard size Color	Normal class 2	17	27	60	35	56700	5	4	3	3	170.100.00



Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to Indicate Special Item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Envelope. White long	Normal class 2	22	28	37	48	49728	2	2	1	1	49 728 00
Envelope. White stripe	Normal class 2	16	28	50	35	49000	15	6	4	4	196 000 00
Fabric cleaning Brush:003	Normal class 2	5.3	36	36	19	24624	15	30	15	15	369 360 00
Fabric cleaning Brush:031	Normal class 2	4.8	17.1	39.6	33	22346.28	20	23	13	13	290 501 64
Fabric cleaning Brush:707	Normal class 2	5.2	31	33	26	26598	7	8	5	5	132 990 00
Fabric cleaning Brush:Eastman 2 colors	Normal class 2	15	25	38	52	49400	25	53	28	28	1 383 200 00
Fabric cleaning Brush Eastman. Bone	Normal class 2	14.4	34	48	35	57120	13	23	13	13	742 560 00
Fabric cleaning Brush flat iron shape:brass	Normal class 1	5	29	38	16	17632	33	55	30	30	528 960 00
Fabric cleaning Brush:JCJ	Normal class 2	4	19	33	30	18810	13	20	10	10	188 100 00
Fabric cleaning Brush Nylon 888	Normal class 2	5.5	15.5	23.5	50	18212.5	10	12	7	7	127 487.50
Fabric cleaning Brush Nylon flat iron	Normal class 1	4	29	40	16.5	19140	33	55	30	30	574 200 00
Fabric cleaning Brush Nylon. flat iron china	Normal class 2	11	30	50	39	58500	5	5	3	3	175 500 00
Fabric cleaning Brush Rainbow. Samor	Normal class 2	22	33	47	52	80652	24	23	13	13	1 048 476 00
Fabric cleaning Brush:Samor. White fiber	Normal class 2	17	34	37	49	61642	13	23	13	13	801 346 00
Fabric cleaning soap: 3 stars	Normal class 2	16	31.5	31	23	22459.5	3	3	2	2	44 919 00
Fabric cleaning soap: Carus crane	Normal class 2	15	31	31	21	20181	3	3	2	2	40 362 00
Fabric Gloves eagle. colorful. nylon	Normal class 1	4.8	25	52	20	26000	80	45	25	25	650 000 00
Fabric Gloves eye. size 10-12	Normal class 1	1.6	18	25	25	11250	7	11	6	6	67 500 00
Fabric Gloves eye. size 132	Normal class 1	2.4	22	27	29	17226	15	11	6	6	103 256 00
Fabric Gloves eye. size 5-7	Normal class 1	1.2	16	23	24	8832	5	11	6	6	52 992 00
Fabric Gloves eye. size 7-9	Normal class 1	1.5	16	23	24	8832	7	11	6	6	52 992 00
Fabric Gloves eye. white. 125	Normal class 1	2	22	26	28	16016	8	11	6	6	96 096 00
Fabric Gloves golden fish. colorful. nylon	Normal class 1	4.5	20	53	22	23320	12	10	5	5	116 600 00
Fabric Gloves hot protector	Normal class 2	14	50	75	50	187500	3	4	2	2	375 000 00
Fabric Gloves peacock. long. nylon	Normal class 2	4	30	55	15	24750	20	20	10	10	247 500 00
Fabric Gloves peacock. sailclothes	Normal class 1	4	24	49	19	22344	20	23	13	13	290 472 00
Fabric Gloves peacock.white. nylon	Normal class 1	5.4	24	52	20	24960	30	23	13	13	324 480 00
Fabric Gloves Red rim	Normal class 1	3.9	25	50	16	20000	75	58	33	33	660 000 00
Fabric Gloves Special weaver. rabbit	Normal class 1	3.4	19	43	18	14706	15	11	6	6	88 236 00
Fabric Gloves Sun	Normal class 1	5.2	22	44	19	19228	30	25	15	15	288 420 00
Fabric Gloves Sun. sailclothes	Normal class 1	1.9	21	26	28	15288	10	12	7	7	107 016 00
Fabric Gloves white color. yellow rim	Normal class 2	6.2	36	50	19	34200	24	20	10	10	342 000 00
Fabric Gloves Sun. nylon	Normal class 1	5.2	27	52	20	28080	30	23	13	13	365 040 00
Fabric Hanger Big Bee	Normal class 2	7	49	57	44	122892	3	3	2	2	245 784 00
Fabric Hanger Big flowers	Normal class 2	4.5	56	55	43	132440	5	3	2	2	264 880 00
Fabric Hanger Daily	Normal class 2	3.3	52	57	56	165984	5	3	2	2	331 968 00
Fabric Hanger Green flowers	Normal class 2	4.7	29	63	43	78561	6	6	4	4	314 244 00
Fabric pincher. 16 pieces. Ploy	Normal class 1	4	28	31	23	19964	30	12	7	7	139 748 00
Fabric pincher. 18 pieces. CS	Normal class 1	2.4	24	36	17	14688	43	12	7	7	102 816 00
Fabric pincher. 18 pieces. round shape. Flower	Normal class 2	2.9	32	33	32	33792	29	30	18	18	608 256 00
Fabric pincher. 18 pieces. round shape. Merry	Normal class 1	4.4	22	33	27	19602	10	11	6	6	117 612 00
Fabric pincher. 18pieces. turbine	Normal class 1	2.6	24	36	17	14688	60	12	7	7	102 816 00
Fabric pincher. 24 pieces. Put	Normal class 2	3.5	33	34	19	21318	40	23	13	13	277 154 00
Fabric pincher 30 pieces. CS	Normal class 2	3.9	35	40	16	22400	60	23	13	13	291 200 00
Fabric pincher. 30 pieces. Put	Normal class 2	4.1	35	40	16	22400	60	25	15	15	336 000 00
Fabric pincher: Big size	Normal class 1	3	24	29	26	18096	15	13	8	8	144 768 00
Fabric pincher Japanese	Normal class 1	2.5	18	28	25	12600	20	23	13	13	163 800 00
Fabric pincher Wooden	Normal class 2	13	28	45	30	37800	15	10	5	5	189 000 00
Fabric Softener Pink	Normal class 2	15	26	51	40	53040	21	6	4	4	212 160 00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Fabric Softener: Sky-blue	Normal class 2	15	26	51	40	53040	21	6	4	4	212,160.00
Fabric Whitener	Normal class 1	8	24.5	33	28	22638	10	11	6	6	135,828.00
Feathers stick	Normal class 2	26	34	67	34	77452	3	3	2	2	154,904.00
Feet cleaning sponge: Jolly	Normal class 2	1	39	55	30	64350	15	12	7	7	450,450.00
Flashlight: Chinese: Colorful plastic	Normal class 2	10	30	40	50	60000	8	6	4	4	240,000.00
Flashlight: Gun A2500	Normal class 1	2.1	18	28	18	9072	12	10	5	5	45,360.00
Flashlight: Gun A2600	Normal class 1	1.8	22	25	20	11000	12	10	5	5	55,000.00
Flashlight: Gun S2200	Normal class 1	1.8	19.5	20	16	6240	12	10	5	5	31,200.00
Flashlight: Panasonic: FF-137	Normal class 1	4	28	41	26.5	30422	10	6	4	4	121,688.00
Flashlight: Panasonic: FF-327	Normal class 1	3	24	43	18	18576	10	6	4	4	74,304.00
Flashlight: PF-127	Normal class 1	3.5	28	41	20	22960	10	6	4	4	91,840.00
Flashlight: Tiger 300	Normal class 2	25	43	62	46.5	123969	10	11	6	6	743,814.00
Flashlight: Tiger 500	Normal class 2	21	39.5	67	54.5	144234.25	3	3	2	2	288,468.50
Flashlight: Tiger 700	Normal class 2	16.5	40.5	52.5	56	119070	2	2	1	1	119,070.00
Flipper used for frying	Normal class 2	25	33	43	34	48246	2	1	1	1	48,246.00
Flipper used for frying: with holes	Normal class 2	25	33	43	34	48246	2	1	1	1	48,246.00
Floor cleaning brush: Nylon: Rose	Normal class 1	4.4	24	40	14	13440	20	12	7	7	94,080.00
Floor cleaning sponge: Rose	Sp - size	2.9	51	102	37	188700	15	11	6	6	1,132,200.00
Floor cleaning sponge: Tree	Sp - size	20	50	102	37	188700	20	11	6	6	1,132,200.00
Full head Hat: A3	Normal class 2	10	30	45	65	87750	10	12	7	7	614,250.00
Full head Hat: Iainclothes	Normal class 2	2.7	33	39	10	12870	6	7	4	4	51,480.00
Full head Hat: Iainclothes with cap	Normal class 2	4.2	33	39	17	21879	3	4	2	2	43,758.00
Glass Cleaner: Buka	Normal class 1	4	17.5	23	23	9257.5	20	23	13	13	120,347.50
Grilling sieve	Normal class 1	8	26	40	20	20800	5	5	3	3	62,400.00
Hair Jel: Jenny	Normal class 2	19	34	44	26	38896	3	2	1	1	38,896.00
High Cup: 355 with Cover	Normal class 2	6.8	36	52	44.5	83304	4	2	1	1	83,304.00
Hot Stick Glue: Big	Normal class 2	25	32	64	17.5	35840	5	4	3	3	107,520.00
Hot Stick Glue: Small	Normal class 2	25	32	64	17.5	35840	5	4	3	3	107,520.00
Hot water pouch: Big: Kangaroo	Normal class 2	14.4	30	36	26	28080	3	3	2	2	56,160.00
Hot water pouch: small	Normal class 2	15	38	50	25	47500	20	12	7	7	332,500.00
Hot water pouch: stripe pattern, small	Normal class 2	14	26	52	43	58136	10	6	4	4	232,544.00
Ice canteen: Perfect, No.999-M5	Normal class 2	10	44	67	51	150348	5	3	2	2	300,696.00
Ice canteen: Star S. No. 592	Normal class 2	6	40	56	46	103040	6	6	4	4	412,160.00
Ice tray: pumpkin	Normal class 2	15	42	85	27	96390	4	4	2	2	192,780.00
Indigo: Big bottle: Chicken	Normal class 2	1.6	33	45	35	51975	4	3	2	2	103,950.00
Indigo: Big bottle: Crown	Normal class 2	9	36	36.5	38	49932	2	2	1	1	49,932.00
Indigo: big square shape: Crown	Normal class 2	12	31	46	21	29946	4	4	2	2	59,892.00
Indigo: bottle: Mokey	Normal class 1	7.5	24	33	28	22176	2	2	1	1	22,176.00
Indigo: Medium bottle: Chicken	Normal class 2	22	35	40	42	58800	2	2	1	1	58,800.00
Indigo: Small bottle: Chicken	Normal class 2	19	27	50	38.5	51975	2	2	1	1	51,975.00
Indigo: square shape: Crown	Normal class 1	1.2	10	24	9	2160	20	23	13	13	28,080.00
Indigo: square shape: Monkey	Normal class 1	9	24	33	28	22176	2	2	1	1	22,176.00
Indigo: Square bottle: Chicken	Normal class 1	13	29	44	25	31900	1	2	1	1	31,900.00
Indigo: Liquid: Chicken	Normal class 2	18	33	42	49	67914	2	2	1	1	67,914.00
Kerosine: Jun	Normal class 1	3.3	18	22	15	5940	60	55	30	30	178,200.00
Knife: Chinese 103	Normal class 1	0.2	7.5	25	2.5	468.75	50	50	25	25	11,718.75
Knife: Chinese 104A	Normal class 1	0.4	9.5	23	4.5	983.25	20	20	10	10	9,832.50
Knife: Chinese 106W	Normal class 1	0.4	9.5	24	4	912	20	20	10	10	9,120.00
Knife: Chinese 108	Normal class 1	0.7	13	25	3.5	1137.5	20	20	10	10	11,375.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special Item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Knife Chinese 109	Normal class 1	0.7	13.5	25	3.5	1181.25	20	20	10	10	11,812.50
Knife Chinese 1105	Normal class 1	0.7	13	23.5	4	1222	20	20	10	10	12,220.00
Knife Chinese 1168	Normal class 1	0.9	11.5	36	4	1656	20	20	10	10	16,560.00
Knife Chinese 1174	Normal class 1	1.6	10	29	4.5	1305	20	20	10	10	13,050.00
Knife Chinese 1177	Normal class 1	1.1	7	32	6	1344	20	20	10	10	13,440.00
Knife Chinese 1178	Normal class 1	1.3	7	30	6	1260	20	20	10	10	12,600.00
Knife Chinese 202	Normal class 1	1.2	7.5	31.5	6.5	1535.625	12	12	6	6	9,213.75
Knife Chinese 204	Normal class 1	1.2	10	35.5	5	1775	12	12	6	6	10,650.00
Knife Chinese 205	Normal class 1	1.6	10	30	4.5	1350	12	12	6	6	8,100.00
Knife Kiwi 172	Normal class 1	1.1	9	30	4	1080	20	12	7	7	7,560.00
Knife Kiwi 173	Normal class 1	1	9	30	4	1080	20	12	7	7	7,560.00
Knife Kiwi 193	Normal class 1	0.3	7	22	3	462	75	60	35	35	16,170.00
Knife Kiwi 194	Normal class 1	0.3	7	22.5	3	472.5	50	60	35	35	16,557.50
Knife Kiwi 195	Normal class 1	0.4	7	24.5	3	514.5	50	60	35	35	18,007.50
Knife Kiwi 21	Normal class 1	1.8	9	33	4	1188	10	12	7	7	8,316.00
Knife Kiwi 22	Normal class 1	1.8	9	33	4	1188	10	12	7	7	8,316.00
Knife Kiwi 246	Normal class 2	0.9	8.5	29.5	3.5	877.625	10	12	7	7	61,433.75
Knife Kiwi 247	Normal class 1	0.9	8.5	31	4	1054	10	12	7	7	7,378.00
Knife Kiwi 474	Normal class 1	0.5	9.5	22.5	3.5	748.125	20	25	15	15	11,221.88
Knife Kiwi 475	Normal class 1	0.6	9.5	22.5	3.5	748.125	20	25	15	15	11,221.88
Knife Kiwi 476	Normal class 1	1	11	29	4	1276	20	25	15	15	19,140.00
Knife Kiwi 477	Normal class 1	1	11	29	4	1276	20	25	15	15	19,140.00
Knife Kiwi 501	Sp - Turn over	0.4	6	23.5	3	423	150	60	35	60	25,380.00
Knife Kiwi 502	Sp - Turn over	0.4	6	23.5	3	423	150	60	35	60	25,380.00
Knife Vegetable Wildman small	Normal class 2	3.9	14	18	3.5	8820	10	12	7	7	61,740.00
Knife Vegetable Wildman 1 blade	Normal class 2	7.2	16	23.5	39.5	14852	7	12	7	7	103,964.00
Knife Vegetable Wildman 2 blades	Normal class 2	7	16	23.5	39.5	14852	7	12	7	7	103,964.00
Ladle Belanine	Normal class 1	6.5	25	33	18	14850	13	20	10	10	148,500.00
Ladle Chinese pattern	Normal class 2	25	36	46	35	57960	5	3	2	2	115,920.00
Ladle Colorful handle	Normal class 2	18	26	39	35	35490	7	11	6	6	212,940.00
Latex glue 5 Bahi	Normal class 2	14.4	38.5	42	30	48510	6	2	1	1	48,510.00
Latex glue 10 Bahi	Normal class 2	16.8	37	47	33	57387	6	3	2	2	114,774.00
Leather polish Kiwi, Black	Normal class 2	5.5	22	48	65	68640	8	9	5	5	343,200.00
Leather polish Kiwi, Brown	Normal class 2	5.5	22	48	65	68640	7	8	5	5	343,200.00
Leather polish Kiwi, Classic Black	Normal class 2	5.5	22	48	65	68640	5	6	4	4	274,560.00
Leather polish Kiwi, Classic Brown	Normal class 2	5.5	22	48	65	68640	5	6	4	4	274,560.00
Light bulb of Flashlight 24V No.1	Normal class 1	3	24	28	18.5	12432	1	2	1	1	12,432.00
Light bulb of Flashlight 24V No.2	Normal class 1	3	24	28	18.5	12432	1	2	1	1	12,432.00
Light bulb of Flashlight 24V No.3	Normal class 1	3	24	28	18.5	12432	1	3	2	2	24,864.00
Light bulb of Flashlight 24V No.4	Normal class 1	3	24	28	18.5	12432	1	3	2	2	24,864.00
Light bulb of Flashlight 24V No.5	Normal class 1	3	24	28	18.5	12432	1	2	1	1	12,432.00
Light bulb Superlamp 200W	Normal class 2	2.3	41	41	15	25215	20	20	10	10	252,150.00
Lubricant oil for machinery flat bottle	Normal class 2	10.00	33.00	16.50	33.00	17968.50	10	6.00	4	4	71,874.00
Lubricant oil for machinery round bottle	Normal class 2	12.00	35.00	40.00	29.00	40600.00	20	12.00	7	7	284,200.00
Lunch box 584-2	Normal class 2	3.9	45	60	25	67500	5	5	3	3	202,500.00
Lunch box 921	Normal class 2	7	27	44	50	59400	6	2	1	1	59,400.00
Lunch box 922	Normal class 2	3.5	25	50	65	81250	12	5	3	3	243,750.00
Lunch box 923	Normal class 2	5.5	22	56	60	73920	9	4	3	3	221,760.00
Magnifying glass	Normal class 2	20	35.5	57	36.5	73857.75	2	2	1	1	73,857.75

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special Item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Meji color pen	Normal class 2	15	31	67	31	64387	4	3	2	2	128.774 00
Menthol Mid	Normal class 1	9	23.5	34	20	15980	3	5	3	3	47.940 00
Mentholated ointment	Sp - HighWeight	35	38	53	23	46322	4	3	2	3	138.966 00
Metal polisher Big Brasso	Normal class 1	5.8	21	27	19	10773	10	12	7	7	75.411 00
Metal polisher Medium Brasso	Normal class 1	3	17	21.5	16	5848	15	11	6	6	35.088 00
Metal polisher Big Vnol	Normal class 1	2.6	22	21.5	15	7095	20	22	12	12	85.140 00
Metal polisher Small Brasso	Normal class 1	3.4	22	32	11.5	8096	33	53	28	28	226.688 00
Metal polisher Small Vnol	Normal class 1	1.4	16.5	18	12	3564	20	22	12	12	42.768 00
Milk bottle Kid Chinese	Normal class 2	7.5	34.5	41	62	87699	5	7	5	4	350.796 00
Mirror with Plastic frame	Normal class 2	5.3	37	38	20	28120	30	11	6	6	168.720 00
Mirror with Swinger	Normal class 2	18	36	46	40	66240	2	2	1	1	66.240 00
Mirror bath room	Normal class 1	6.2	21	66	27	37422	6	6	3	3	112.266 00
Mirror Flower 10x14 .hang	Normal class 1	8	16	37	27	15984	6	6	4	4	63.936 00
Mirror Flower 12x16 .hang	Normal class 2	9.5	16	42	32	21504	5	6	4	4	86.016 00
Mirror Flower 14x20 .hang	Normal class 2	15	15	53	37	29415	2	4	3	3	88.245 00
Mirror Flower 7x10 .hang	Normal class 1	5	15	27	19	7695	8	11	6	6	46.170 00
Mirror Flower 8x12 .hang	Normal class 1	6.5	16	32	21.5	11008	7	11	6	6	66.048 00
Mirror Flower No 10	Normal class 1	4.7	14.5	25	18	6525	20	23	13	13	84.825 00
Mirror Flower No 12	Normal class 1	5.5	14.5	26.5	19	7300.75	10	11	6	6	43.804.50
Mirror Flower No 4	Normal class 1	8	23	38	12	10488	10	11	6	6	62.928 00
Mirror Flower No 5	Normal class 1	11	23	45	13	13455	10	11	6	6	8.730 00
Mirror Flower No 6	Normal class 1	1.8	14.5	18	10	2610	45	35	20	20	52.200 00
Mirror Flower No 7	Normal class 1	2.4	14.5	18	13.5	3523.5	45	35	20	20	70.470 00
Mirror Flower No 8	Normal class 1	2.8	14.5	20	14	4060	20	23	13	13	52.780 00
Mirror Flower No 9	Normal class 1	3.4	14.5	21	15.5	4719.75	20	23	13	13	61.356.75
Mosquitoes wiping stick container	Normal class 2	12	41.5	65	25	67437.5	20	22	12	12	809.250 00
Mosquitoes wiping stick container long	Normal class 2	6.5	29	43	31	38657	3	3	2	2	77.314 00
Mop with round fabric	Sp- Shaft shape	8.5	8	140	15	16800	12	12	7	12	201.600 00
Mosquitoes wiping joss stick Dragon	Normal class 2	12	37	48	22	39072	24	22	12	12	468.864 00
Mosquitoes wiping reagent Ko-Yo-15	Normal class 2	2.7	31	36	14	15624	20	11	6	6	95.744 00
Mothball ATM big	Normal class 2	14	34	50	13	22100	20	12	7	7	154.700 00
Mothball ATM small	Normal class 1	6	27	38	10.5	10773	20	12	7	7	75.411 00
Mothball Big pack 1x2	Normal class 2	9	30	40	25	30000	5	5	3	3	90.000 00
Mothball Jumbo size	Normal class 2	25	36	48	25.5	44064	8	5	3	3	132.192 00
Mothball Kilo	Normal class 2	25	35	42	24	35280	20	12	7	7	246.960 00
Mothball Small pack	Normal class 1	7	25	38	22	20900	10	11	6	6	125.400 00
Nail cleaning brush Big transparent	Normal class 2	5	32	40	16.5	21120	8	6	4	4	84.480 00
Nail cleaning brush flat iron shape	Normal class 2	4.5	31	32	22	21824	6	7	4	4	87.296 00
Nail cutter 129	Normal class 1	26	26	50	20	26000	10	12	7	7	182.000 00
Nail cutter 211	Sp - HighWeight	30	23	46	18	19044	3	5	3	5	95.220 00
Nail cutter 309	Normal class 2	23	36	40	20	28800	5	6	4	4	115.200 00
Nail cutter 600	Normal class 2	28	39	40	18	28080	5	6	4	4	112.320 00
Nail cutter 602	Sp - HighWeight	30	33.5	34	15	17085	3	5	3	5	85.425 00
Nail cutter 777, 211	Normal class 1	0.5	8	10	2.5	200	20	50	25	25	5.000 00
Nail cutter 999 Big	Normal class 1	0.5	8	9	3	216	50	50	25	25	5.400 00
Nail cutter 999 Small	Normal class 1	0.2	6	7.5	2.5	112.5	100	100	50	50	5.625 00
Nail polisher Big size	Normal class 2	28	35	39	36	49140	15	6	4	4	196.560 00
Nail polisher Small size	Sp - HighWeight	30	26	31	52	41912	2	2	1	2	83.824 00
Nail polisher Square bottle	Sp - HighWeight	34	33	43	47	66693	12	11	6	11	733.623 00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity				Planning storage space
		Weight of unit type	Width(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )	
Nipple Akasen L	Normal class 1	4.1	27	35	28	26460	5	6	4	4	105,840.00	
Nipple Akasen M	Normal class 1	4.1	27	35	28	26460	5	6	4	4	105,840.00	
Nipple Akasen S	Normal class 1	4.1	27	35	28	26460	5	6	4	4	105,840.00	
Nipple Kiki L	Normal class 1	4.5	27	51	19	26163	5	6	4	4	104,652.00	
Nipple Kiki M	Normal class 1	4.5	27	51	19	26163	5	6	4	4	104,652.00	
Nipple Kiki S	Normal class 1	4.5	27	51	19	26163	5	6	4	4	104,652.00	
Nipple Pegen L	Normal class 2	12	45	55	30	74250	2	2	1	1	74,250.00	
Nipple Pegen M	Normal class 2	12	45	55	30	74250	2	2	1	1	74,250.00	
Nipple Pegen S	Normal class 2	12	45	55	30	74250	2	2	1	1	74,250.00	
Olive oil Big size	Normal class 2	28	55	39	56	49140	8	6	4	4	196,560.00	
Olive oil Small size	Sp - HighWeight	30	26	31	52	41912	3	2	1	2	83,824.00	
One bali cotton wool	Sp - size	7	70	120	50	420000	4	4	2	4	1,680,000.00	
Padlock black long 32mm	Normal class 1	0.7	9.5	13	4	494	80	40	20	20	9,880.00	
Padlock black long 38mm	Sp - Turn over	1	12	13	4.5	702	129	30	15	30	21,060.00	
Padlock black long 38mm	Normal class 2	20	37	48	16	28416	2	2	1	1	28,416.00	
Padlock black long 50mm	Sp - Turn over	2.2	13	16	5	1040	30	10	5	5	5,200.00	
Padlock black short 25mm 999	Normal class 1	0.4	5	10	3.5	175	100	110	60	60	10,500.00	
Padlock black short 32mm	Normal class 1	0.6	6	13	4	312	80	40	20	20	6,240.00	
Padlock black short 32mm 999	Normal class 1	20	27	31	15.5	12973.5	3	3	2	2	25,947.00	
Padlock black short 38 mm	Sp - Turn over	1	12	13	4.5	585	120	40	20	40	23,400.00	
Padlock black short 38mm 999	Normal class 1	20	27	45	23	27945	2	2	1	1	27,945.00	
Padlock black short 50mm 5 rings	Normal class 1	21	28	35	18	17640	4	3	2	2	35,280.00	
Padlock black short 50mm 5 rings	Normal class 2	20	31	31	20	19220	3	4	2	2	38,440.00	
Padlock black short 50mm 999	Normal class 1	2	9	15	6	810	30	10	5	5	4,050.00	
Padlock brass long 32mm	Normal class 1	0.7	10	13	4	520	60	40	20	20	10,400.00	
Padlock brass long 38mm	Sp - Turn over	1	11.5	13	4.5	672.75	60	30	15	15	10,091.25	
Padlock brass short 20 mm	Normal class 1	0.4	5	13	3	195	100	50	25	25	4,875.00	
Padlock brass short 32mm	Sp - Turn over	0.6	6	13	4	312	343	80	40	80	24,960.00	
Padlock gold long 25mm	Normal class 1	0.8	8	9.5	6	456	30	20	10	10	4,560.00	
Padlock gold long 32mm	Normal class 2	21	41	41	19	31939	3	3	2	2	63,878.00	
Padlock gold long 38mm 5 rings	Normal class 2	20	37	48	16	28416	3	3	2	2	56,832.00	
Padlock gold long 50mm	Sp - Turn over	1.7	13	16	6	1248	43	12	7	7	8,736.00	
Padlock gold long 50mm	Normal class 1	20	27	45	18	21870	2	2	1	1	21,870.00	
Padlock gold short 25mm	Normal class 2	21	31	52	16	25792	10	11	6	6	154,752.00	
Padlock gold short 32mm	Normal class 2	21	41	41	19	31939	3	3	2	2	63,878.00	
Padlock gold short 38mm	Sp - Turn over	1	12	13	4.5	409.5	480	90	50	90	25,855.00	
Padlock gold short 38mm	Normal class 1	20	27	43	18	20898	5	5	3	3	62,694.00	
Padlock gold short 50mm	Normal class 1	1.6	9	16	5.5	792	86	20	10	10	7,920.00	
Padlock gold short 50mm	Normal class 1	21	28	35	18	17640	4	4	2	2	35,280.00	
Padlock Solo 25mm pack	Sp - Turn over	0.3	5	11	3	165	200	100	50	100	16,500.00	
Padlock Solo 30mm No 84	Normal class 1	1.3	7.5	13	6	585	20	10	5	5	2,925.00	
Padlock Solo 35mm pack	Normal class 1	1.5	9	13	6	702	40	20	10	10	7,020.00	
Padlock Solo 35mm pack	Normal class 1	3.2	21.5	30	14	9030	5	5	3	3	27,090.00	
Padlock Solo 40mm pack	Normal class 1	2	9	13	7	819	40	20	10	10	8,190.00	
Padlock Solo 40mm pack	Normal class 1	3.4	21.5	30	14	9030	5	5	3	3	27,090.00	
Padlock Solo 45mm pack	Normal class 1	4	21.5	30	14	9030	5	5	3	3	27,090.00	
Padlock Solo 50mm	Normal class 1	1.8	8.5	13	5.5	607.5	20	20	10	10	6,077.50	
Padlock Solo 50mm pack	Normal class 1	3.6	21.5	30	14	9030	5	5	3	3	27,090.00	
Padlock Solo 55mm pack	Normal class 1	3.8	21.5	30	14	9030	5	5	3	3	27,090.00	

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special Item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type( cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Padlock VITA long. 40mm	Normal class 1	3.6	15	23	11	3795	10	12	7	7	26,565.00
Padlock VITA long. 45mm	Normal class 1	4.4	15	23	11	3795	10	12	7	7	26,565.00
Padlock VITA long. 50mm	Normal class 1	5.2	15	23	11	3795	10	12	7	7	26,565.00
Padlock VITA short. 40mm	Normal class 1	3.8	15	23	11	3795	10	12	7	7	26,565.00
Padlock VITA short. 45mm	Normal class 1	4.2	15	23	11	3795	10	12	7	7	26,565.00
Padlock VITA short. 50mm	Normal class 1	4.8	15	23	11	3795	10	12	7	7	26,565.00
Padlock Wolf 20mm	Sp - Turn over	0.4	5	9	3	135	150	100	50	100	13,500.00
Padlock Wolf 20mm	Normal class 1	28	25.5	39	19.5	19392.75	3	2	1	1	19,392.75
Padlock Wolf 25mm	Normal class 1	0.4	6	9.5	5	285	100	50	25	25	7,125.00
Padlock Wolf 25mm	Normal class 1	21	26	31	21	16926	3	2	1	1	16,926.00
Padlock Wolf 30mm	Normal class 1	0.5	6	9	5	270	100	50	25	25	6,750.00
Padlock Wolf 30mm	Normal class 1	27	28.5	35	22	21945	2	2	1	1	21,945.00
Padlock Wolf 40mm	Sp - Turn over	0.8	8.5	10.5	6.5	580.125	43	10	5	5	2,900.62
Padlock Wolf 40mm	Normal class 1	21	22	36	19	15048	3	2	1	1	15,048.00
Padlock Wolf 50mm	Normal class 1	1.4	10	11	9	990	43	10	5	5	4,950.00
Padlock Wolf 50mm	Normal class 1	25	22.5	39.5	11.5	10220.625	3	3	2	2	20,441.25
Padlock World 50mm	Normal class 1	21	29	40	20	23200	3	3	2	2	46,400.00
Painting brush No 1	Normal class 2	2.00	9.00	20.00	32.00	5760.00	4	5.00	3	3	17,280.00
Painting brush No 1.5	Normal class 2	2.10	9.00	20.00	32.00	5760.00	4	5.00	3	3	17,280.00
Painting brush No 2	Normal class 1	2.20	13.00	22.00	29.00	8294.00	4	5.00	3	3	24,882.00
Painting brush No 2.5	Normal class 2	2.00	9.00	20.00	32.00	5760.00	2	2.00	1	1	5,760.00
Painting brush No 3	Normal class 2	2.20	9.00	20.00	32.00	5760.00	2	2.00	1	1	5,760.00
Painting brush No 4	Normal class 2	2.10	9.00	20.00	32.00	5760.00	2	2.00	1	1	5,760.00
Pen cleaning brush: meal of coconut 2014	Normal class 2	3.8	32	44.5	19	27056	15	12	7	7	189,392.00
paper card: gold scam 007	Normal class 2	25	32	37	27	31968	12	11	6	6	191,808.00
paper card Thai	Normal class 2	12	35	44	19	29260	20	21	11	11	321,860.00
paper card Winner	Normal class 1	8	28	34	26	24752	2	2	1	1	24,752.00
Pen Diamond	Normal class 2	9	40	49	17.5	34300	5	5	3	3	102,900.00
Pen Lancer 626 Blue	Normal class 2	6.5	36	43	16	24768	3	6	4	4	99,072.00
Pen Lancer 813 Black	Normal class 2	7.8	36	43	16	24768	2	3	2	2	49,536.00
Pen Lancer 813 Blue	Normal class 2	7.8	36	43	16	24768	3	5	3	3	74,304.00
Pen Lancer 813 Red	Normal class 2	7.8	36	43	16	24768	2	4	3	3	74,304.00
Pen Lancer 825 Black	Normal class 2	9	36	45	16	25920	4	7	4	4	103,680.00
Pen Lancer 825 Blue	Normal class 2	9	36	45	16	25920	5	8	5	5	129,600.00
Pen Lancer 825 Red	Normal class 2	9	36	45	16	25920	5	8	5	5	129,600.00
Pen Lancer 878 Black	Normal class 2	6.5	30	45	11	14850	7	11	6	6	89,100.00
Pen Lancer 878 Blue	Normal class 2	6.5	30	45	11	14850	7	11	6	6	89,100.00
Pen Lancer 878 Red	Normal class 2	6.5	30	45	11	14850	7	11	6	6	89,100.00
Pen Lancer 915 Black	Normal class 2	7.2	36	43	17	26316	2	3	2	2	52,632.00
Pen Lancer 915 Blue	Normal class 2	7.2	36	43	17	26316	3	5	3	3	78,948.00
Pen Lancer 915 Red	Normal class 2	7.2	36	43	17	26316	2	4	3	3	78,948.00
Pencil multi-head	Normal class 2	20	42	52	35	76440	2	2	1	1	76,440.00
Pencil multi-head: Diamond	Normal class 1	2.2	21.5	21.5	16	7396	12	14	8	8	59,168.00
Perfume gel: G&G	Normal class 1	12	27	42	21	38400	3	3	2	2	76,800.00
Photo Album: Big size	Normal class 2	4.2	16.5	30	35	17325	3	5	3	3	51,975.00
Photo Album: Jumbo size	Normal class 2	2.1	14	19	31	8246	5	5	3	3	24,738.00
Photo Album: Medium size	Normal class 2	3.8	8	24	37	7104	5	5	3	3	21,312.00
Photo Album: Small size	Normal class 1	1.6	12	15	29	5220	7	10	5	5	26,100.00
pincer with cutting head diamond	Normal class 1	0.80	9.00	17.00	3.50	535.50	13	20.00	10	10	5,355.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special Item						Storage Quantity			Planning storage space cubic space(cm <sup>3</sup> )
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	
pincer with sharp head diamond	Normal class 1	3.50	8.00	17.00	3.50	476.00	13	22.00	12	12	5,712.00
pincer diamond	Normal class 1	3.50	8.00	17.00	3.50	476.00	40	44.00	24	24	11,424.00
Pingpong ball orange	Sp - HighWeight	48	53	87	51	235161	2	2	1	1	235,161.00
Pingpong ball white	Sp - HighWeight	48	53	87	51	235161	1	1	1	1	235,161.00
Plastic bag with lock	Normal class 1	2.4	28	41	29	33292	10	5	3	3	99,876.00
Plastic binder	Normal class 2	3.7	36	38	29	39672	10	10	5	5	198,360.00
Plastic bucket 3.5	Normal class 2	4.8	36	36	51	66096	6	6	3	3	198,288.00
Plastic bucket Black 16	Normal class 2	6	32	32	52	53248	12	4	2	2	106,496.00
Plastic bucket Black 18	Normal class 2	8	33	33	60	65340	12	6	3	3	196,020.00
Plastic bucket Yellow 2.5	Normal class 2	3.5	27	27	52	37908	10	12	7	7	265,356.00
Plastic bucket Yellow 3.5	Normal class 2	4.2	29	29	53	44573	9	7	4	4	178,292.00
Plastic bucket Yellow 4.5	Normal class 2	6	31	31	62	59582	8	5	3	3	178,746.00
plastic card-Winner 222	Normal class 2	25	32	38	26.5	32224	3	6	4	4	128,896.00
Plastic fork short	Normal class 2	8.5	14	30	55	23100	2	3	2	2	46,200.00
Plastic spoon long	Normal class 2	8.5	14	30	55	23100	2	3	2	2	46,200.00
Plastic spoon short	Normal class 2	6.5	14	32	40	17920	5	6	4	4	71,680.00
Plastic spoon-fork	Normal class 1	4.2	20	32	14	8960	30	22	12	12	107,520.00
Plug head Black	Normal class 2	2.2	10	18	35	6300	20	12	7	7	44,100.00
Plug head White	Normal class 2	5	10	18	46	8280	20	11	6	6	49,680.00
Plug Receptable head Black	Normal class 2	3.8	9	18	45	7290	12	7	4	4	29,160.00
Pollution filter clothes blue	Normal class 1	4.5	29	42	22	26796	30	22	12	12	321,552.00
Pot mender	Normal class 2	2.9	36	39	3	4212	6	6	4	4	16,848.00
Power line of a flat iron	Normal class 2	6	27	35	31	29295	4	4	3	3	87,885.00
Power line of a frying pan	Normal class 2	6	27	35	31	29295	4	4	3	3	87,885.00
Power line of a pot	Normal class 2	5	27	35	31	29295	4	4	3	3	87,885.00
Power plug receptable 10M. AMC	Normal class 2	10	36	47	19	32148	10	6	4	4	128,592.00
Power plug receptable 10M. Motto	Normal class 2	10	36	47	19	32148	20	12	7	7	225,036.00
Power plug receptable 2001-10	Normal class 1	6.9	25.5	44	26	29172	15	6	4	4	116,688.00
Power plug receptable 2001-11	Normal class 1	6.5	25.5	44	26	29172	15	6	4	4	116,688.00
Power plug receptable 2001-5	Normal class 1	11	29	53	18	27666	15	6	4	4	110,664.00
Power plug receptable 2001-8	Normal class 1	9	25.5	44	26	29172	15	6	4	4	116,688.00
Power plug receptable 2001-9	Normal class 1	8	25.5	44	26	29172	15	6	4	4	116,688.00
Power plug receptable 20M. AMC	Normal class 2	9	40	42	16	26880	3	5	3	3	80,640.00
Power plug receptable 5M. Motto	Normal class 2	5.3	36	47	19	32148	20	12	7	7	225,036.00
Power plug receptable 8M. AMC	Normal class 2	8	36	47	19	32148	8	6	4	4	128,592.00
Power plug receptable Nagas 10M	Normal class 2	11	31	55	20	34100	10	12	7	7	228,700.00
Power plug receptable Nagas 5M	Normal class 2	6	31	55	20	34100	10	12	7	7	228,700.00
Power plug receptable Nagas 8M	Normal class 2	10	31	55	20	34100	10	12	7	7	228,700.00
Power plug receptable NS-1 Nakashi	Normal class 1	5.6	27	39	17	17901	5	6	4	4	71,604.00
Power plug receptable SUI triangle shape	Normal class 1	3.5	26	43	16	17888	8	6	4	4	71,552.00
Price tag Shooter	Normal class 2	11	48	31	41	61008	4	4	2	2	122,016.00
Price Tag sticker	Normal class 1	4	13	30	23	8970	10	11	6	6	55,820.00
Pumping tube plastic	Normal class 2	11.00	33.00	65.00	63.00	135135.00	7	11.00	6	6	810,810.00
Razor 4 pieces in one pack	Normal class 2	25	37	45	49	81585	3	3	2	2	163,170.00
Razor Double blades SuperMax	Normal class 2	6.1	33	41	40	54120	5	5	3	3	162,360.00
Razor Fancy	Normal class 2	5.5	38	41	45	70110	15	12	7	7	490,770.00
Razor Feather	Normal class 2	4.5	13	36	48	22464	3	3	2	2	44,928.00
Razor Gillette Thin 2	Normal class 2	2.5	40	65	13	33800	33	53	28	28	946,400.00
Razor Green Sayuri	Normal class 2	5.5	38	40	46.5	70680	1	2	1	1	70,680.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity				Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )	
Razor Karat	Normal class 2	6.6	15	28.5	48	20520	5	6	4	4	82.080.00	
Razor S.Doll	Normal class 2	25	27	40	45	48600	5	6	4	4	194.400.00	
Razor single blades Gillette Click	Normal class 2	12	36	55	18	35640	25	27	15	15	534.600.00	
Razor with 2 blades	Normal class 2	16	45	58	40	104400	3	5	3	3	313.200.00	
Razor with Nail cutter	Normal class 2	5.5	39	20	45	35100	6	4	3	3	105.300.00	
Razor Yellow Sayun	Normal class 2	5.5	38	40	46.5	70680	2	3	2	2	141.360.00	
Razor Doctoril	Normal class 2	5.4	36	40	49	70560	5	6	4	4	282.240.00	
Razor TCI Set	Normal class 1	2.5	29	70	17	34510	21	6	4	4	138.040.00	
Razor Blade: Aata	Normal class 2	25	35	49	30	51450	10	13	8	8	411.600.00	
Razor Blade: Dorgo	Normal class 2	15	35	55	23	44275	5	5	3	3	152.825.00	
Razor Blade: Feather	Sp - HighWeight	30	34.5	53.5	30	55372.5	2	2	1	2	110.745.00	
Razor Blade: SuperMax	Normal class 1	8.5	19	44	21	17556	1	2	1	1	17.556.00	
Razor Blade: SuperStainless	Normal class 1	6.9	20	45	22	19800	3	3	2	2	39.600.00	
Razor Blade: Superthin	Normal class 1	8.5	20	45	22	19800	4	3	2	2	39.600.00	
Refilled Gas: Buca. Jumbo	Normal class 1	4.2	21	28	21	12348	24	22	12	12	148.176.00	
Refilled Gas: Buca. Small	Normal class 2	0.9	20	45	44	59400	5	6	4	4	257.600.00	
Ring 500 pieces chain	Normal class 1	13	26	34	25	22100	5	6	4	4	88.400.00	
Ring Big size	Normal class 1	15	20	32	20	12800	10	11	6	6	76.800.00	
Ring Medium size	Normal class 1	10	21	30	25	15750	3	4	3	3	47.250.00	
Ring Small size	Normal class 1	7.5	20	32	20	12800	2	3	2	2	25.600.00	
Rubber binder big	Normal class 2	10	35	33	12	13860	5	6	4	4	55.440.00	
Rubber binder small	Normal class 2	10	35	33	12	13860	5	6	4	4	55.440.00	
Rubber gloves Canon. L	Normal class 1	1.1	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Canon. M	Normal class 1	1.1	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Canon. S	Normal class 1	1.1	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Dragon. L	Normal class 2	20	37	74	43	117734	10	5	3	3	353.202.00	
Rubber gloves Dragon. M	Normal class 2	20	37	74	43	117734	6	5	3	3	353.202.00	
Rubber gloves Dragon. S	Normal class 2	20	37	74	43	117734	10	5	3	3	353.202.00	
Rubber gloves OK. 7.5. cream color	Normal class 2	24	35	46	42	67620	4	1	1	1	67.620.00	
Rubber gloves OK. 7.5. orange color	Normal class 2	24	35	46	42	67620	4	1	1	1	67.620.00	
Rubber gloves OK. 8.5. cream color	Normal class 2	24	35	46	42	67620	4	1	1	1	67.620.00	
Rubber gloves OK. 8.5. orange color	Normal class 2	24	35	46	42	67620	4	1	1	1	67.620.00	
Rubber gloves Panda. Black. L	Normal class 1	1.5	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Panda. Black. M	Normal class 1	1.5	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Panda. Black. S	Normal class 1	1.5	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Panda. Goose. 7.5. Pink	Normal class 1	1.4	14.5	34	10	4930	2	1	1	1	4.930.00	
Rubber gloves Panda. Goose. 8.5. Pink	Normal class 1	1.4	14.5	34	10	4930	2	1	1	1	4.930.00	
Rubber gloves Panda. Orange. L	Normal class 1	1.5	14.5	36	10	5220	6	4	2	2	10.440.00	
Rubber gloves Panda. Orange. M	Normal class 1	1.5	14.5	36	10	5220	5	3	2	2	10.440.00	
Rubber gloves Panda. Orange. S	Normal class 1	1.5	14.5	36	10	5220	5	3	2	2	10.440.00	
Rubber gloves PVC. White. M	Normal class 2	16	27	58	32	50112	5	10	5	5	250.560.00	
Rubber gloves Sun. Orange.L	Normal class 1	1	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Sun. Orange.M	Normal class 1	1	14.5	36	10	5220	1	1	1	1	5.220.00	
Rubber gloves Sun. Orange.S	Normal class 1	1	14.5	36	10	5220	1	1	1	1	5.220.00	
Rug egg shape	Normal class 2	20	40	90	30	108000	8	5	3	3	324.000.00	
Rug heart shape	Normal class 2	20	40	90	30	108000	8	5	3	3	324.000.00	
Rug round shape	Normal class 2	20	40	90	30	108000	8	5	3	3	324.000.00	
Rug small	Normal class 2	25	47	60	40	112800	8	6	4	4	451.200.00	
Rug square shape	Normal class 2	20	35	42	60	88200	8	5	3	3	264.600.00	



Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity				Planning storage space cubic space(cm3)
		Weight of unit type	Width(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm3)	Turn-over rate / month	Maximum storage unit	Avg storage quantity	Planning storage quantity		
Rug: weaved	Normal: class 2	25	45	80	32	115200	9	7	4	4	460 800 00	
Sauce bottle: Orange	Normal: class 2	4.5	25	60	70	105000	3	2	1	1	105,000.00	
Sauce bottle: Transparency	Normal: class 2	4.5	25	60	70	105000	5	3	2	2	210,000.00	
Saving box: Big cylinder A	Normal: class 2	6.2	22	88	20	38720	1	1	1	1	38 720 00	
Saving box: Fat A	Normal: class 2	4	34	32	40	43520	12	5	3	3	130,560.00	
Saving box: Giant: A	Normal: class 2	6.8	43	53	49	111671	4	2	1	1	111,671.00	
Saving box: Medium A	Normal: class 2	6.6	44	54	40	95040	6	2	1	1	95,040.00	
Saving box: Medium A, Kid	Normal: class 2	5.4	33	53	41	71709	9	2	1	1	71 709 00	
Saving box: Medium B	Normal: class 2	6.5	44	54	40	95040	9	2	1	1	95,040.00	
Saving box: Star: S100-4	Normal: class 2	6	50	70	30	105000	3	2	1	1	105 000 00	
Saving box: Star: S1005-4	Normal: class 2	6	40	75	30	90000	3	2	1	1	90 000 00	
Saving box: Tim: A	Normal: class 2	5.9	32	59	26	49088	6	3	2	2	98,176.00	
Scissors: 8 inches 999	Normal: class 2	18	40	96	50	192000	2	3	3	2	384 000 00	
Scissors: Bee: 304	Normal: class 2	15	40	42	34	57120	1	1	1	1	57,120.00	
Scissors: Chinese yellow handle	Normal: class 1	10	18	22	15	5940	5	5	3	3	17,820.00	
Scissors: Jasmine	Normal: class 2	10	32	37	30	35520	8	6	4	4	142,080.00	
Scissors: Meti: Rabbit	Normal: class 1	0.6	10	15.5	5	775	48	45	25	25	19,375.00	
Scissors: Orange handle	Normal: class 1	0.7	27	38	28	28728	72	70	40	40	1,149,120.00	
Scissors: paper set	Normal: class 2	17	43	22.5	30.5	29508.75	12	11	6	6	177,052.50	
Scissors: Rose: 304	Normal: class 2	15	40	42	34	57120	8	6	4	4	228,480.00	
Scissors: Rose: 33	Normal: class 1	0.5	8.5	20	8	1360	48	45	25	25	34,000.00	
Scissors: Rose: 538	Normal: class 1	0.5	8.5	20	8	1360	48	45	25	25	34,000.00	
Scissors: Rose: 917	Normal: class 1	0.5	8.5	20	8	1360	48	45	25	25	34,000.00	
Scissors: Rubber handle size 1	Normal: class 1	2.1	11	22	10	2420	2	2.5	2	2	4,840.00	
Scissors: Rubber handle size 2	Normal: class 1	19	23	54	23	28566	1	2.5	2	2	57,132.00	
Scissors: Rubber handle size 3	Normal: class 2	18	26	21	42	22932	1	2.5	2	2	45,864.00	
Scissors: thread: black	Normal: class 1	4.5	13	44.5	15	8677.5	12	14	8	8	69,420.00	
Scissors: Wildman 03A	Normal: class 1	0.5	9	20	8	1440	24	23	13	13	18,720.00	
Scissors: Wildman 04A	Normal: class 1	0.7	9	20	8	1440	24	23	13	13	18,720.00	
Scissors: Wildman 05A	Normal: class 1	1.2	10	25	12	3000	24	22	12	12	36,000.00	
Screw driver 2 pieces in set	Normal: class 2	24.00	28.00	28.00	40.00	31360.00	1	2.00	1	1	31,360.00	
Screw driver 4 pieces in set	Normal: class 1	1.20	8.50	17.50	12.00	1785.00	40	40.00	20	20	35,700.00	
Screw driver for electrical test	Normal: class 1	0.50	7.50	19.50	4.50	658.13	25	50.00	25	25	16,453.13	
Screw driver for watch	Normal: class 2	16.00	31.00	45.00	26.50	36967.50	5	6.00	4	4	147,870.00	
Screw driver with 3 inches punch head	Normal: class 1	0.50	6.50	16.50	4.00	429.00	24	48.00	24	24	10,296.00	
Screw driver with 4 inches punch head	Normal: class 1	0.90	7.00	19.00	4.50	598.50	24	48.00	24	24	14,364.00	
Screw driver with switching head	Normal: class 2	27.00	38.00	2.00	38.00	2888.00	3	3.00	2	2	5,776.00	
Scrubber with Handle: Black	Normal: class 2	1.3	31	31	14	13454	20	22	12	12	161,448.00	
Scrubber with sponge: Merrybit: Twin	Normal: class 2	3.5	38	74.5	37.5	106162.5	24	23	13	13	1,380,112.50	
Scrubber: 3M	Normal: class 2	4.3	37	66	25	61050	33	52	27	27	1,648,350.00	
Scrubber: Bigsize 1mx2m	Sp - size	10	70	120	15	126000	6	5	3	5	630,000.00	
Scrubber: Diamond	Normal: class 2	10.5	50	80	52	208000	15	11	6	6	1,248,000.00	
Scrubber: Elephant	Normal: class 2	6.5	47	47	39	86151	10	11	7	7	603,057.00	
Scrubber: Merrybit: Original	Normal: class 2	5.5	34	45	44	67320	24	25	15	15	1,009,800.00	
Scrubber: Set 10	Normal: class 2	12	55	88	46	222640	6	3	2	2	445,280.00	
Scrubber: Set 11	Normal: class 2	18	46	95	45	196650	5	3	2	2	393,300.00	
Scrubber: Set 14	Normal: class 2	20	44	67	46	135608	6	3	2	2	271,216.00	
Scrubber: Set 1x3	Normal: class 2	4	54	52	37	103896	5	5	3	3	311,688.00	
Shoe brush: Herping	Normal: class 2	20	23.5	64	44	66176	7	11	6	6	397,056.00	

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity			Planning storage space
		Weight of unit type	Width(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm3)	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm3)
Shoe polish: big, black	Normal: class 2	9.5	30	30.5	24.5	22417.5	10	12	7	7	156,922.50
Shoe polish: small, black	Normal: class 1	9	23	31	27	19251	20	22	12	12	231,012.00
Shoe polish: small, brown	Normal: class 1	9	23	31	27	19251	7	12	7	7	134,757.00
Shoe rope: 24 inches Black	Normal: class 1	4.9	22	55	10	12100	2	1	1	1	12,100.00
Shoe rope: 24 inches Black, Big	Normal: class 2	5	23	32	30	22080	2	1	1	1	22,080.00
Shoe rope: 24 inches Black, Flat	Normal: class 1	3.3	20	33	29	19140	2	1	1	1	19,140.00
Shoe rope: 24 inches Brown	Normal: class 1	4.9	22	55	10	12100	1	1	1	1	12,100.00
Shoe rope: 24 inches Brown, Big	Normal: class 2	5	23	32	30	22080	1	1	1	1	22,080.00
Shoe rope: 24 inches Brown, Flat	Normal: class 1	3.3	20	33	29	19140	1	1	1	1	19,140.00
Shoe rope: 24 inches Dark brown	Normal: class 1	4.9	22	55	10	12100	1	1	1	1	12,100.00
Shoe rope: 24 inches Dark brown, Big	Normal: class 2	5	23	32	30	22080	1	1	1	1	22,080.00
Shoe rope: 24 inches Dark brown, Flat	Normal: class 1	3.3	20	33	29	19140	1	1	1	1	19,140.00
Shoe rope: 24 inches White	Normal: class 1	4.9	22	55	10	12100	2	1	1	1	12,100.00
Shoe rope: 24 inches White, Big	Normal: class 2	5	23	32	30	22080	2	1	1	1	22,080.00
Shoe rope: 24 inches White, Flat	Normal: class 1	3.3	20	33	29	19140	2	1	1	1	19,140.00
Shoe rope: 36 inches Black	Normal: class 1	3.3	25	65	12	19500	2	1	1	1	19,500.00
Shoe rope: 36 inches Black, Big	Normal: class 2	8	28	28	40	31360	2	1	1	1	31,360.00
Shoe rope: 36 inches Black, Flat	Normal: class 2	4	30	30	40	36000	2	1	1	1	36,000.00
Shoe rope: 36 inches Brown	Normal: class 1	3.3	25	65	12	19500	1	1	1	1	19,500.00
Shoe rope: 36 inches Brown, Big	Normal: class 2	8	28	28	40	31360	1	1	1	1	31,360.00
Shoe rope: 36 inches Brown, Flat	Normal: class 2	4	30	30	40	36000	1	1	1	1	36,000.00
Shoe rope: 36 inches Dark brown	Normal: class 1	3.3	25	65	12	19500	1	1	1	1	19,500.00
Shoe rope: 36 inches Dark brown, Big	Normal: class 2	8	28	28	40	31360	1	1	1	1	31,360.00
Shoe rope: 36 inches Dark brown, Flat	Normal: class 2	4	30	30	40	36000	1	1	1	1	36,000.00
Shoe rope: 36 inches White	Normal: class 1	3.3	25	65	12	19500	2	1	1	1	19,500.00
Shoe rope: 36 inches White, Big	Normal: class 2	8	28	28	40	31360	2	1	1	1	31,360.00
Shoe rope: 36 inches White, Flat	Normal: class 2	4	30	30	40	36000	2	1	1	1	36,000.00
Shoe rope: 42 inches Black, Big	Normal: class 2	6.9	29	29	46	38686	2	1	1	1	38,686.00
Shoe rope: 42 inches Black, Flat	Normal: class 2	6	29	29	46	38686	6	2	1	1	38,686.00
Shoe rope: 42 inches Brown, Big	Normal: class 2	6.9	29	29	46	38686	1	1	1	1	38,686.00
Shoe rope: 42 inches Brown, Flat	Normal: class 2	6	29	29	46	38686	2	2	1	1	38,686.00
Shoe rope: 42 inches Dark brown, Big	Normal: class 2	6.9	29	29	46	38686	1	1	1	1	38,686.00
Shoe rope: 42 inches Dark brown, Flat	Normal: class 2	6	29	29	46	38686	2	2	1	1	38,686.00
Shoe rope: 42 inches Mix, Flat	Normal: class 2	6	29	29	46	38686	3	3	2	2	77,372.00
Shoe rope: 42 inches White, Big	Normal: class 2	6.9	29	29	46	38686	2	1	1	1	38,686.00
Shoe rope: 42 inches White, Flat	Normal: class 2	6	29	29	46	38686	6	2	1	1	38,686.00
Shoe rope: 48 inches Black, Flat	Normal: class 2	8.3	30	30	56	50400	1	1	1	1	50,400.00
Shoe rope: 48 inches Brown, Flat	Normal: class 2	8.3	30	30	56	50400	1	1	1	1	50,400.00
Shoe rope: 48 inches White, Flat	Normal: class 2	8.3	30	30	56	50400	1	1	1	1	50,400.00
Shoe rope: 60 inches Black, Big	Normal: class 2	11	30	30	66	59400	1	1	1	1	59,400.00
Shoe rope: 60 inches Black, Flat	Normal: class 2	9	30	30	63	56700	1	1	1	1	56,700.00
Shoe rope: 60 inches Brown, Big	Normal: class 2	11	30	30	66	59400	1	1	1	1	59,400.00
Shoe rope: 60 inches Brown, Flat	Normal: class 2	9	30	30	63	56700	1	1	1	1	56,700.00
Shoe rope: 60 inches White, Big	Normal: class 2	11	30	30	66	59400	1	1	1	1	59,400.00
Shoe rope: 60 inches White, Flat	Normal: class 2	9	30	30	63	56700	1	1	1	1	56,700.00
Shoe rubber G2-1	Normal: class 1	0.7	10	20	17	3400	50	54	29	29	98,600.00
Shoe rubber G2-4	Normal: class 1	0.7	10	20	17	3400	50	54	29	29	98,600.00
Shoe rubber G3-1	Normal: class 1	0.8	10	20	17	3400	50	54	29	29	98,600.00
Shoe rubber G3-4	Normal: class 1	0.7	10	20	17	3400	50	54	29	29	98,600.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indicate Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Shoe rubber Kiwi Black	Normal class 1	9.5	21	45.5	17	16243.5	8	8	4	4	64,974.00
Shoe rubber Kiwi Brown	Normal class 1	9.5	21	45.5	17	16243.5	5	5	3	3	48,730.50
Shoe rubber Kiwi White	Normal class 1	9.5	21	45.5	17	16243.5	5	5	3	3	48,730.50
Shoe supporter Lady, 10 kgs	Normal class 2	6.2	35	45	24	37800	2	2	1	1	37,800.00
Shoe supporter Man, 10 kgs	Normal class 2	6.2	35	45	24	37800	2	2	1	1	37,800.00
Shoes hanger	Normal class 2	7	36	50	37	66600	6	5	3	3	199,800.00
Shon Clipping Blade Dragonfly	Sp - HighWeight	30	27	36	21	20412	10	11	6	11	224,532.00
Shower cap cartoon pattern big	Normal class 2	8	30	40	30	36000	4	4	2	2	72,000.00
Shower cap cartoon pattern small	Normal class 2	6.8	30	35	30	31500	4	4	2	2	63,000.00
Shower cap fitness big	Normal class 1	9	26	65	18	30420	4	4	2	2	60,840.00
Shower cap fitness small	Normal class 1	5.5	25	45	25	28125	4	4	2	2	56,250.00
Shower cap big	Normal class 1	10	25	50	25	31250	4	4	2	2	62,500.00
Shower cap small	Normal class 1	6	25	50	25	31250	4	4	2	2	62,500.00
Shower sponge Jolly 001	Normal class 2	3.8	30	50	50	75000	3	2	1	1	75,000.00
Shower sponge Jolly 002	Normal class 2	3.8	30	50	50	75000	5	3	2	2	150,000.00
Shower sponge Jolly 003	Normal class 2	3.8	30	50	50	75000	3	2	1	1	75,000.00
Shower sponge Jolly 004	Normal class 2	3.8	30	50	50	75000	23	18	11	11	825,000.00
Shower sponge with Shower Cream	Sp - size	12	110	120	40	528000	4	5	3	5	2,640,000.00
Shower sponge Natural	Normal class 1	1.8	29	31	20	17980	7	10	5	5	89,900.00
Showering head spray	Normal class 1	2.00	24.00	20.50	15.00	7380.00	10	20.00	10	10	73,800.00
shrink adhesive tape 1 inche	Normal class 2	5.00	23.00	35.00	31.00	24955.00	8	6.00	4	4	99,820.00
shrink adhesive tape 1 inche big size	Normal class 2	4.00	21.00	32.00	30.00	20160.00	8	5.00	3	3	60,480.00
shrink adhesive tape 1.5 inche big size	Normal class 2	4.00	21.00	32.00	30.00	20160.00	8	5.00	3	3	60,480.00
shrink adhesive tape 2 inche big size	Normal class 2	4.00	21.00	32.00	30.00	20160.00	8	5.00	3	3	60,480.00
shrink adhesive tape 3/4 inche	Normal class 2	4.60	23.00	35.00	31.00	24955.00	8	6.00	4	4	99,820.00
shrink adhesive tape 3/4 inche big size	Normal class 2	4.00	21.00	32.00	30.00	20160.00	8	5.00	3	3	60,480.00
Soap box 2 slots	Normal class 1	4.3	25	47	25	29375	12	12	7	7	205,625.00
Soap box 351P Transparent	Normal class 2	4.5	45	72	53	171720	3	2	1	1	171,720.00
Soap box 351P White	Normal class 2	4.5	45	72	53	171720	3	2	1	1	171,720.00
Soap box 771	Normal class 2	4.1	20	44	55	48400	6	7	5	5	242,000.00
Soap box Kiak	Normal class 2	3	22	22	44	21296	9	8	5	5	106,480.00
Soap box Pearl	Normal class 2	3.8	42	47	30	59220	10	11	6	6	355,320.00
Soap box Shinjung	Normal class 2	3.7	26	34	50	44200	7	8	5	5	221,000.00
Soap box Transparent stripes	Normal class 2	4	20	45	60	54000	6	7	5	5	270,000.00
Soap box White stripes	Normal class 2	4	20	45	60	54000	6	7	5	5	270,000.00
Soap Big Tamamirine	Normal class 2	16	35	40	22	30800	3	2	1	1	30,800.00
Soap Ginger	Normal class 2	25	21	41	30	25830	8	5	3	3	77,490.00
Soap kok-leang	Normal class 1	4.5	21	40	20	16800	3	5	3	3	50,400.00
Soap Laura	Normal class 2	22	26	33	40	34320	8	5	3	3	102,960.00
Soap Small Cucumber	Normal class 2	8	32	38	14	17024	2	2	1	1	17,024.00
Soap Tamaric	Normal class 1	11	27	39	26	27378	2	2	1	1	27,378.00
Soap Ya-Un	Normal class 1	6	25	32	25	20000	15	11	6	6	120,000.00
Socks business Mix color	Normal class 1	3.5	26	40	20	20800	15	18	11	11	228,800.00
Socks short Mix color	Normal class 1	2.8	26	40	18	18720	10	12	7	7	151,040.00
Spoon Elephant short	Normal class 1	15	29	41	29	34481	15	11	6	6	206,886.00
Spoon Panda short	Normal class 2	20	28	29	39	31668	30	23	13	13	411,684.00
Spoon short Zebra	Sp - HighWeight	32	28.5	43.5	29	35952.75	20	11	6	11	395,480.25
Stainless Cutter L-120	Normal class 2	6.6	22.5	42	36	34020	10	6	4	4	136,080.00
Stainless spoon coffee	Normal class 1	4.4	14	20	14	3920	15	11	6	6	23,520.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of Item	Factor to Indicate Special Item						Storage Quantity			Planning storage space cubic space(cm3)
		Weight of unit type	Width(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type(cm3)	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	
Stainless spoon Jet	Normal class 1	20	28.5	34	28	27132	15	11	6	6	162,792.00
Stainless spoon-fork.#C	Normal class 1	23.6	24.5	40	28.5	27930	10	11	6	6	167,580.00
Staple wire	Normal class 1	17	23	38	22	19228	6	6	4	4	76,912.00
Stapler	Normal class 2	8	30	37	39	43290	8	6	4	4	173,160.00
Steel pot stand	Normal class 2	10	39.5	44	25	43450	5	6	4	4	173,800.00
Super Glue: Ateco	Normal class 2	6.5	39	40	45	70200	30	14	9	9	631,800.00
Super Glue: Chinese	Normal class 2	9.5	40.5	82	29	96309	8	6	4	4	385,236.00
Super Glue: Kenji	Normal class 2	6	30	41	44	54120	10	6	4	4	216,480.00
Tape Cleanser set	Normal class 2	4	32	54	15	25920	3	4	3	3	77,760.00
Tape 2 side glue. Loose size 1x1	Normal class 2	4.2	25	36	31	27900	20	22	12	12	334,800.00
Tape Box closer: murky color	Normal class 2	4.5	28	36	30	30240	30	17	10	10	302,400.00
Tape Box closer: transparency	Normal class 2	4.5	28	36	30	30240	15	12	7	7	211,680.00
Tape Osaka 1meter	Normal class 2	8.2	40	51	26	53040	6	4	3	3	159,120.00
Tape: transparency 1 inch 36 yard	Normal class 2	4.6	30	40	17	20400	5	5	3	3	61,200.00
Tape: transparency 1/2 inch 10 yard	Normal class 2	15	35	37	27	34965	5	5	3	3	104,895.00
Tape: transparency 1/2 inch 3 yards	Normal class 2	8	34	50	20	34000	5	5	3	3	102,000.00
Tape: transparency 1/2 inch 36 yard. big	Normal class 2	4.6	30	40	17	20400	15	15	10	10	204,000.00
Tape: transparency 1/2 inch 36 yard. small	Normal class 1	9.6	29	42	17	20706	5	5	3	3	62,118.00
Tape: transparency 1/2 inch 72 yard	Normal class 2	10	36	46	15	24840	5	5	3	3	74,520.00
Tape: transparency 3/4 inch 36 yard	Normal class 2	4.6	30	40	17	20400	10	10	5	5	102,000.00
Tape: transparency 3/4 inch 72 yard	Normal class 2	10	36	46	15	24840	5	5	3	3	74,520.00
Ten baht cotton wool	Sp - size	8	45	45	80	162000	5	5	3	5	810,000.00
Thread: 1 baht. YNC Black	Normal class 2	5.6	23	26	52.5	31395	4	2	1	1	31,395.00
Thread 1 baht. YNC Dark gray	Normal class 2	5.6	23	26	52.5	31395	4	2	1	1	31,395.00
Thread 1 baht. YNC Mix	Normal class 2	5.6	23	26	52.5	31395	4	2	1	1	31,395.00
Thread: 1 baht YNC White	Normal class 2	5.6	23	26	52.5	31395	4	2	1	1	31,395.00
Thread 1 baht YNC Yellow	Normal class 2	5.6	23	26	52.5	31395	4	2	1	1	31,395.00
Thread 10 baht set. Mix	Normal class 1	3	20	26	23	11960	8	6	4	4	47,840.00
Thread: 10 baht set. White-Black	Normal class 2	3	24	24	38.5	22176	8	6	4	4	88,704.00
Thread A Black	Normal class 2	5	14	14	60	11760	13	3	2	2	23,520.00
Thread A Dark gray	Normal class 2	5	14	14	60	11760	13	3	2	2	23,520.00
Thread A Mix	Normal class 2	5	14	14	60	11760	13	3	2	2	23,520.00
Thread A White	Normal class 2	5	14	14	60	11760	13	3	2	2	23,520.00
Thread A White-Black	Normal class 2	5	14	14	60	11760	13	3	2	2	23,520.00
Thread: Pink set	Normal class 2	25	57	73	41	170601	3	2	1	1	170,601.00
Thread: Sailing ship. Black	Normal class 1	2.1	22	19.5	17	7293	30	12	7	7	51,051.00
Thread: Sailing ship. Mix	Normal class 1	2.1	22	19.5	17	7293	30	12	7	7	51,051.00
Thread: Sailing ship. White	Normal class 1	2.1	22	19.5	17	7293	30	12	7	7	51,051.00
Tissue box	Normal class 2	4.9	48	57	35	95760	5	4	2	2	191,520.00
Toothbrush 12 in one box. Medium Victory	Normal class 1	5.6	26	33	20	17160	5	11	6	6	102,960.00
Toothbrush: 12 in one box. Soft Victory	Normal class 1	5.6	26	33	20	17160	10	23	13	13	223,080.00
Toothbrush 3 in one pack JGA. transparent	Normal class 2	16	46	57	27	70794	3	3	2	2	141,588.00
Toothbrush: 3 in one pack JGA. turbid	Normal class 2	16	46	57	27	70794	3	3	2	2	141,588.00
Toothbrush 30 in one box. Medium Victory	Normal class 1	5	26	33	23	19734	7	10	5	5	98,670.00
Toothbrush 30 in one box. Soft Victory	Normal class 1	4.7	26	33	23	19734	10	10	5	5	98,670.00
Toothbrush CASA. 203	Normal class 2	13.2	46	61	28	78568	6	5	3	3	235,704.00
Toothbrush CASA. 204	Normal class 2	13.2	46	61	28	78568	6	5	3	3	235,704.00
Toothbrush CASA. 205	Normal class 2	13.2	46	61	28	78568	6	5	3	3	235,704.00
Toothbrush CASA. 207	Normal class 2	13.2	46	61	28	78568	6	5	3	3	235,704.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to indice Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type( cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Toothbrush: CASA. 208	Normal: class 2	13.2	46	61	28	78568	6	5	3	3	235.704.00
Toothbrush: CASA. 210	Normal: class 2	13.2	46	61	28	78568	6	5	3	3	235.704.00
Toothbrush: Chinese. Adult 650	Normal: class 2	16	24	44	66	69696	3	3	2	2	139.392.00
Toothbrush: Chinese. Adult 940	Normal: class 2	15	47	48	37	83472	3	2	1	1	83.472.00
Toothbrush: Chinese. Kid	Normal: class 2	10	25	46	44	50600	2	2	1	1	50.600.00
Toothbrush: JAGA. 674	Normal: class 2	10	46	57	27	70794	9	7	4	4	283.176.00
Toothbrush: JAGA. 690	Normal: class 2	10	46	57	27	70794	9	7	4	4	283.176.00
Toothbrush: JAGA. 698	Normal: class 2	10	46	57	27	70794	9	7	4	4	283.176.00
Toothbrush: JAGA. 699	Normal: class 2	10	46	57	27	70794	9	7	4	4	283.176.00
Toothbrush: JAGA. 739	Normal: class 2	10	46	57	27	70794	9	7	4	4	283.176.00
Toothbrush: JAGA. 740	Normal: class 2	10	46	57	27	70794	9	7	4	4	283.176.00
Toothbrush: Jomana	Normal: class 1	2.5	21	44	19	17556	30	63	33	33	579.348.00
Toothbrush: Kid. Komo	Normal: class 2	6.6	29	43	47	58609	5	5	3	3	175.827.00
Toothbrush: OralB Med	Normal: class 1	2.5	25.5	37.5	25	22031.25	12	12	7	7	154.218.75
Toothbrush: OralB Soft	Normal: class 1	2.5	23.5	37.5	25	22031.25	24	23	13	13	286.406.25
Toothbrush: OSAKA. 204	Normal: class 2	8	25.5	43	59	64693.5	6	6	3	3	194.080.50
Toothbrush: OSAKA. 205	Normal: class 2	8	25.5	43	59	64693.5	6	6	3	3	194.080.50
Toothbrush: OSAKA. 206	Normal: class 2	8	25.5	43	59	64693.5	6	6	3	3	194.080.50
Toothbrush: Popular Eastman	Normal: class 1	3.7	25	47	27	29187	7	10	5	5	145.935.00
Toothbrush: Slim Victory	Normal: class 2	3.6	38	38	27	38988	10	12	7	7	272.916.00
Toothbrush: Soft. transparent Eastman	Normal: class 2	20	20	64	44	56320	13	22	12	12	675.840.00
Toothpaste squeezer: murky	Normal: class 1	5.5	23	50	18	20700	5	6	4	4	82.800.00
Toothpaste squeezer: transparency	Normal: class 1	5.5	23	50	18	20700	4	3	2	2	41.400.00
Toothpick : Kilo	Normal: class 2	20	28	43	38	45752	3	3	2	2	91.504.00
Toothpick 1x10	Normal: class 2	21	33	35	35	40425	15	12	7	7	282.975.00
Toothpick 2in1	Normal: class 2	12	30	39	44	51480	10	10	5	5	257.400.00
Toothpick: Bamboo. Large	Normal: class 1	6.5	25	33	29	23925	20	12	7	7	167.475.00
Toothpick: Bamboo. Medium	Normal: class 1	9.5	25	34	28	23800	10	6	4	4	95.200.00
Toothpick: Bamboo. Small	Normal: class 1	12	25	33	29	23925	3	2	1	1	23.925.00
Toothpick: Bandang. Medium	Normal: class 2	16	33.5	37.5	38	47737.5	13	22	12	12	572.850.00
Topknot of Pot's cover: Big	Normal: class 2	25	35	65	45	102375	1	1	1	1	102.375.00
Topknot of Pot's cover: Medium	Normal: class 2	25	35	65	45	102375	1	1	1	1	102.375.00
Topknot of Pot's cover: Size	Normal: class 2	25	32	45	50	72000	1	1	1	1	72.000.00
Tradition razor	Normal: class 2	18	20	45	47.5	64125	8	6	4	4	256.500.00
trash dipper with handle slot: grade A	Normal: class 2	3.7	42	67	13	36582	5	13	8	8	292.656.00
trash dipper: grade A	Normal: class 2	6.8	20	48	33	31680	12	5	3	3	95.040.00
trash dipper: small size 345	Normal: class 2	5.2	32	50	23	36800	12	7	5	5	184.000.00
U-lock: 3 pieces	Normal: class 1	2	10	16	5	800	13	20	10	10	8.000.00
U-lock: Harry Master. 115	Normal: class 1	2.7	13.5	22	4.5	1336.5	10	23	13	13	17.374.50
U-lock: Harry Master. 55	Normal: class 1	0.5	6.5	17.5	3	341.25	13	23	13	13	4.436.25
U-lock: Harry Master. 75	Normal: class 1	0.9	9	19	3.5	598.5	10	23	13	13	7.780.50
U-lock: Harry Master. 95	Normal: class 1	1.6	11.5	22.5	3.5	905.625	10	23	13	13	11.773.13
Wall hooker 1x3	Normal: class 2	7.5	35	47	29	47705	8	6	4	4	190.820.00
Wall hooker 1x8	Normal: class 2	9	36	36	29	37584	6	6	4	4	150.336.00
Wall hooker: 3 in a row	Normal: class 2	3.7	24	24	30	17280	9	2	1	1	17.280.00
Wall hooker: 4 in a row	Normal: class 2	5.4	23.5	33	30	23265	9	2	1	1	23.265.00
Wall hooker: 5 in a row	Normal: class 2	6	24	24	30	17280	9	2	1	1	17.280.00
Wall hooker: Fancy	Normal: class 2	12	42	49	49	100842	3	4	3	3	302.526.00
Water bottle 1x3	Normal: class 2	4.6	44	87	25	95700	8	5	3	3	287.100.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to Induce Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wid(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type (cm3)	Turn-over rate / month	Maximum storage unit	Avg. storage quantity	Planning storage quantity	cubic space(cm3)
Water bottle 1x3- Square shape	Normal: class 2	2.5	40	50	50	100000	10	10	6	6	600.000.00
Water bottle 1x4	Normal: class 2	2.6	45	57	25	64125	8	10	6	6	384.750.00
Water bottle: 558	Normal: class 2	7.5	42	48	49	98784	3	2	1	1	98.784.00
Water bottle: Pumpkin 711	Normal: class 2	4.8	43	65	27	75465	3	2	1	1	75.465.00
Water bottle: Pumpkin sport	Normal: class 2	5.8	45	58	28	73080	2	2	1	1	73.080.00
Water bottle: pushed, small	Normal: class 2	3.8	53	53	28	78652	3	2	1	1	78.652.00
Water canteen 022	Normal: class 2	4.5	30	34	50	51000	5	6	4	4	204.000.00
Water canteen 999: soldier	Normal: class 2	2	32	38	26	31616	10	10	5	5	158.080.00
Water canteen 999-2.5, Perfect	Normal: class 2	5.8	40	56	45	100800	6	3	2	2	201.600.00
Water canteen Leo	Normal: class 2	9.5	39	52	51	103428	2	2	1	1	103.428.00
Water canteen Ice cream 618	Normal: class 2	11	36	49.5	64	114048	2	2	1	1	114.048.00
Water canteen Ikkusangfl, No 468D	Normal: class 2	5.8	32	47	51.5	77456	6	5	3	3	232.368.00
Water canteen No.111	Normal: class 2	6.1	33.5	66	42.5	93967.5	4	3	2	2	187.935.00
Water canteen No 469X	Normal: class 2	6	32	47	57.5	86480	3	2	1	1	86.480.00
Water canteen No 486D	Normal: class 2	4.4	32	48	42	64512	5	3	2	2	129.024.00
Water canteen No 486X	Normal: class 2	5	32	48	42	64512	5	4	3	3	193.536.00
Water canteen PB-395	Normal: class 2	4.35	26.7	49.5	35.3	46654.245	4	4	3	3	139.962.74
Water canteen PB-411	Normal: class 2	4.3	24.1	45.9	40.7	45021.933	5	4	3	3	135.065.80
Water canteen PB-426	Normal: class 2	4.4	26	50.8	37	48869.6	4	4	3	3	146.608.80
Water canteen PB-457	Normal: class 2	4	25.7	50.8	35	45694.6	5	4	3	3	137.083.80
Water canteen PB-487	Normal: class 2	8.56	46.4	54	38.4	96215.04	2	2	1	1	96.215.04
Water canteen PB-488	Normal: class 2	4.4	25.5	49.8	35	44446.5	5	4	3	3	133.339.50
Water canteen PB-493	Normal: class 2	3.9	26	50.8	37	48869.6	4	4	3	3	146.608.80
Water canteen PB-495	Normal: class 2	3.9	26	49.8	35.3	45706.44	5	4	3	3	137.119.52
Water canteen: Tommy	Normal: class 2	9.1	38	56	41	87248	2	2	1	1	87.248.00
Water canteen n-8	Sp - size	5.3	20	45	86	77400	6	5	3	5	387.000.00
Water filter 5 level	Normal: class 2	8.5	40	52	26.5	55120	3	3	2	2	110.240.00
Water filter Turbine	Normal: class 2	5.5	40	52	26.5	55120	20	12	7	7	385.840.00
Water pourer: Big	Normal: class 2	3.5	45	82	35	129150	14	13	7	7	904.050.00
Water pourer: Medium	Normal: class 2	4	40	55	46	101200	6	6	4	4	404.800.00
Water pourer: Small	Normal: class 2	3.5	26	48	42	52416	6	6	4	4	209.664.00
Water sprayer: 1008	Normal: class 2	1.8	28	39.5	32	35392	6	5	3	3	106.176.00
Water sprayer 2 in 1	Normal: class 2	2	40	40	24	38400	9	6	3	3	115.200.00
Water sprayer 589	Normal: class 2	2.3	74	38	37	33744	15	12	7	7	256.208.00
Water sprayer 590	Normal: class 1	1.8	26	38	27	26676	12	12	7	7	186.752.00
Water sprayer Bone shape, Murky	Sp - size	12	60	92	30	165600	5	5	3	5	828.000.00
Water sprayer Bone shape, transparency	Sp - size	12	60	92	30	165600	8	6	4	6	993.600.00
Water sprayer bottle gourd, Star S, 607	Normal: class 2	1.9	22.5	38	35.5	30352.5	7	6	3	3	91.057.50
Water sprayer Canon, Yellow	Normal: class 2	1.5	29	33	32	30624	18	14	8	8	244.992.00
Water sprayer foggy	Normal: class 1	1.3	27	33	23	20493	50	50	25	25	512.325.00
Water sprayer Lucky, Bell	Normal: class 2	1.9	26.5	38	32	32224	14	14	8	8	257.792.00
Water sprayer Smartwing	Normal: class 2	8	29	54	70	109620	3	5	3	3	328.860.00
Water sprayer: Solo	Normal: class 2	5.2	41	41	56	94136	6	6	3	3	282.408.00
Water sprayer: Taiwan, Transparency	Normal: class 1	1.4	24	33	28	22176	18	17	10	9	199.584.00
Wax for Leather Shoe: Small	Normal: class 2	4.1	30	32	13	12480	60	65	35	35	436.800.00
Whetstone	Sp - HighWeight	31	29	43	17	21199	7	10	5	10	211.990.00
White board pen pilot, Black	Normal: class 1	9.6	29	43.5	22	27753	1	1	1	1	27.753.00
White board pen pilot, Blue	Normal: class 1	9.6	29	43.5	22	27753	1	1	1	1	27.753.00
White board pen pilot, Red	Normal: class 1	9.6	29	43.5	22	27753	1	1	1	1	27.753.00

Table C.1: Storage Space planning chart (Cont.)

Item identifier	Group of item	Factor to Indicate Special item						Storage Quantity			Planning storage space
		Weight of unit type	Wide(cm) of unit type	Length(cm) of unit type	Height(cm) of unit type	cubic space of unit type( cm <sup>3</sup> )	Turn-over rate / month	Maximum storage unit	Avg storage quantity	Planning storage quantity	cubic space(cm <sup>3</sup> )
Wine opener: 800	Sp - HighWeight	45	45	48	40	86400	1	11	11	11	950,400.00
Wooden Brush: Rose, Clorful fiber	Normal: class 2	6	16	23	51	18768	30	24	14	14	262,752.00
Wooden chopping block	Normal: class 1	7.5	20	25	20	10000	10	10	5	5	50,000.00
Wooden Chopstick	Normal: class 1	20	25	48	28	33600	8	6	4	4	134,400.00
Wooden color short pen	Normal: class 2	20	28	39	45	49140	3	2	1	1	49,140.00
Wooden Pencil	Normal: class 2	25	30	41	47	57810	2	2	1	1	57,810.00

**Total planning storage space (cm<sup>3</sup>)**

**165,074,992.51**

**APPENDIX D**  
**STORAGE LOCATION ADDRESS**



**Table D.1: The storage location address**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
2	1.5	Shelf B	1	3	2	F	B	01	3
2	1.5	Shelf B	2	3	2	F	B	02	3
2	1.5	Shelf B	3	3	2	F	B	03	3
2	1.5	Shelf B	4	3	2	F	B	04	3
2	1.5	Shelf B	5	3	2	F	B	05	3
2	1.5	Shelf B	6	3	2	F	B	06	3
2	1.5	Shelf B	7	3	2	F	B	07	3
2	1.5	Shelf B	1	1	2	F	B	01	1
2	1.5	Shelf B	1	2	2	F	B	01	2
2	1.5	Shelf B	2	1	2	F	B	02	1
2	1.5	Shelf B	2	2	2	F	B	02	2
2	1.5	Shelf B	3	1	2	F	B	03	1
2	1.5	Shelf B	3	2	2	F	B	03	2
2	1.5	Shelf B	4	1	2	F	B	04	1
2	1.5	Shelf B	4	2	2	F	B	04	2
2	1.5	Shelf B	5	1	2	F	B	05	1
2	1.5	Shelf B	5	2	2	F	B	05	2
2	1.5	Shelf B	6	1	2	F	B	06	1
2	1.5	Shelf B	6	2	2	F	B	06	2
2	1.5	Shelf B	7	1	2	F	B	07	1
2	1.5	Shelf B	7	2	2	F	B	07	2
2	1.5	Rack A	1	1	2	F	R	01	1
2	1.5	Rack A	1	2	2	F	R	01	2
2	1.5	Rack A	1	3	2	F	R	01	3
2	1.5	Rack A	1	4	2	F	R	01	4
2	1.5	Rack A	1	5	2	F	R	01	5
2	1.5	Shelf C	1	1	2	F	C	01	1
2	1.5	Shelf C	1	2	2	F	C	01	2
2	1.5	Shelf C	2	1	2	F	C	02	1
2	1.5	Shelf C	2	2	2	F	C	02	2
2	1.5	Shelf C	3	1	2	F	C	03	1
2	1.5	Shelf C	3	2	2	F	C	03	2
2	2	Shelf C	4	1	2	2	C	04	1
2	2	Shelf C	4	2	2	2	C	04	2
2	2	Shelf C	5	1	2	2	C	05	1
2	2	Shelf C	5	2	2	2	C	05	2
2	2	Shelf C	6	1	2	2	C	06	1
2	2	Shelf C	6	2	2	2	C	06	2
2	2	Shelf C	7	1	2	2	C	07	1

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
2	2	Shelf C	7	2	2	2	C	07	2
2	3	Shelf B	8	1	2	3	B	08	1
2	3	Shelf B	8	2	2	3	B	08	2
2	3	Shelf B	8	3	2	3	B	08	3
2	3	Shelf B	9	1	2	3	B	09	1
2	3	Shelf B	9	2	2	3	B	09	2
2	3	Shelf B	9	3	2	3	B	09	3
2	3	Shelf B	10	1	2	3	B	10	1
2	3	Shelf B	10	2	2	3	B	10	2
2	3	Shelf B	10	3	2	3	B	10	3
2	3	Shelf B	11	1	2	3	B	11	1
2	3	Shelf B	11	2	2	3	B	11	2
2	3	Shelf B	11	3	2	3	B	11	3
2	3	Shelf B	12	1	2	3	B	12	1
2	3	Shelf B	12	2	2	3	B	12	2
2	3	Shelf B	12	3	2	3	B	12	3
2	3	Shelf B	13	1	2	3	B	13	1
2	3	Shelf B	13	2	2	3	B	13	2
2	3	Shelf B	13	3	2	3	B	13	3
2	3	Shelf B	14	1	2	3	B	14	1
2	3	Shelf B	14	2	2	3	B	14	2
2	3	Shelf B	14	3	2	3	B	14	3
2	3	Shelf B	15	1	2	3	B	15	1
2	3	Shelf B	15	2	2	3	B	15	2
2	3	Shelf B	15	3	2	3	B	15	3
2	3	Shelf B	16	1	2	3	B	16	1
2	3	Shelf B	16	2	2	3	B	16	2
2	3	Shelf B	16	3	2	3	B	16	3
2	3	Shelf B	17	1	2	3	B	17	1
2	3	Shelf B	17	2	2	3	B	17	2
2	3	Shelf B	17	3	2	3	B	17	3
2	3	Shelf B	18	1	2	3	B	18	1
2	3	Shelf B	18	2	2	3	B	18	2
2	3	Shelf B	18	3	2	3	B	18	3
2	3	Shelf B	19	1	2	3	B	19	1
2	3	Shelf B	19	2	2	3	B	19	2
2	3	Shelf B	19	3	2	3	B	19	3
2	3	Shelf B	20	1	2	3	B	20	1
2	3	Shelf B	20	2	2	3	B	20	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
2	3	Shelf B	20	3	2	3	B	20	3
2	3	Shelf B	21	1	2	3	B	21	1
2	3	Shelf B	21	2	2	3	B	21	2
2	3	Shelf B	21	3	2	3	B	21	3
2	3	Shelf B	22	1	2	3	B	22	1
2	3	Shelf B	22	2	2	3	B	22	2
2	3	Shelf B	22	3	2	3	B	22	3
2	3	Shelf B	23	1	2	3	B	23	1
2	3	Shelf B	23	2	2	3	B	23	2
2	3	Shelf B	23	3	2	3	B	23	3
2	3	Shelf B	24	1	2	3	B	24	1
2	3	Shelf B	24	2	2	3	B	24	2
2	3	Shelf B	24	3	2	3	B	24	3
2	4	Shelf B	25	1	2	4	B	25	1
2	4	Shelf B	25	2	2	4	B	25	2
2	4	Shelf B	25	3	2	4	B	25	3
2	4	Shelf B	26	1	2	4	B	26	1
2	4	Shelf B	26	2	2	4	B	26	2
2	4	Shelf B	26	3	2	4	B	26	3
2	4	Shelf B	27	1	2	4	B	27	1
2	4	Shelf B	27	2	2	4	B	27	2
2	4	Shelf B	27	3	2	4	B	27	3
2	4	Shelf B	28	1	2	4	B	28	1
2	4	Shelf B	28	2	2	4	B	28	2
2	4	Shelf B	28	3	2	4	B	28	3
2	4	Shelf B	29	1	2	4	B	29	1
2	4	Shelf B	29	2	2	4	B	29	2
2	4	Shelf B	29	3	2	4	B	29	3
2	4	Shelf B	30	1	2	4	B	30	1
2	4	Shelf B	30	2	2	4	B	30	2
2	4	Shelf B	30	3	2	4	B	30	3
2	4	Shelf B	31	1	2	4	B	31	1
2	4	Shelf B	31	2	2	4	B	31	2
2	4	Shelf B	31	3	2	4	B	31	3
2	4	Shelf B	32	1	2	4	B	32	1
2	4	Shelf B	32	2	2	4	B	32	2
2	4	Shelf B	32	3	2	4	B	32	3
2	4	Shelf B	33	1	2	4	B	33	1
2	4	Shelf B	33	2	2	4	B	33	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
2	4	Shelf B	33	3	2	4	B	33	3
2	4	Shelf B	34	1	2	4	B	34	1
2	4	Shelf B	34	2	2	4	B	34	2
2	4	Shelf B	34	3	2	4	B	34	3
2	4	Shelf B	35	1	2	4	B	35	1
2	4	Shelf B	35	2	2	4	B	35	2
2	4	Shelf B	35	3	2	4	B	35	3
2	4	Shelf B	36	1	2	4	B	36	1
2	4	Shelf B	36	2	2	4	B	36	2
2	4	Shelf B	36	3	2	4	B	36	3
2	4	Shelf B	37	1	2	4	B	37	1
2	4	Shelf B	37	2	2	4	B	37	2
2	4	Shelf B	37	3	2	4	B	37	3
2	4	Shelf B	38	1	2	4	B	38	1
2	4	Shelf B	38	2	2	4	B	38	2
2	4	Shelf B	38	3	2	4	B	38	3
2	4	Shelf B	39	1	2	4	B	39	1
2	4	Shelf B	39	2	2	4	B	39	2
2	4	Shelf B	39	3	2	4	B	39	3
2	5	Shelf B	40	1	2	5	B	40	1
2	5	Shelf B	40	2	2	5	B	40	2
2	5	Shelf B	40	3	2	5	B	40	3
2	5	Shelf B	41	1	2	5	B	41	1
2	5	Shelf B	41	2	2	5	B	41	2
2	5	Shelf B	41	3	2	5	B	41	3
2	5	Shelf B	42	1	2	5	B	42	1
2	5	Shelf B	42	2	2	5	B	42	2
2	5	Shelf B	42	3	2	5	B	42	3
2	5	Shelf B	43	1	2	5	B	43	1
2	5	Shelf B	43	2	2	5	B	43	2
2	5	Shelf B	43	3	2	5	B	43	3
2	5	Shelf B	44	1	2	5	B	44	1
2	5	Shelf B	44	2	2	5	B	44	2
2	5	Shelf B	44	3	2	5	B	44	3
2	5	Shelf B	45	1	2	5	B	45	1
2	5	Shelf B	45	2	2	5	B	45	2
2	5	Shelf B	45	3	2	5	B	45	3
2	5	Shelf B	46	1	2	5	B	46	1
2	5	Shelf B	46	2	2	5	B	46	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
2	5	Shelf B	46	3	2	5	B	46	3
2	5	Shelf B	47	1	2	5	B	47	1
2	5	Shelf B	47	2	2	5	B	47	2
2	5	Shelf B	47	3	2	5	B	47	3
2	5	Shelf B	48	1	2	5	B	48	1
2	5	Shelf B	48	2	2	5	B	48	2
2	5	Shelf B	48	3	2	5	B	48	3
2	5	Shelf B	49	1	2	5	B	49	1
2	5	Shelf B	49	2	2	5	B	49	2
2	5	Shelf B	49	3	2	5	B	49	3
2	5	Shelf B	50	1	2	5	B	50	1
2	5	Shelf B	50	2	2	5	B	50	2
2	5	Shelf B	50	3	2	5	B	50	3
2	5	Shelf B	51	1	2	5	B	51	1
2	5	Shelf B	51	2	2	5	B	51	2
2	5	Shelf B	51	3	2	5	B	51	3
2	5	Shelf B	52	1	2	5	B	52	1
2	5	Shelf B	52	2	2	5	B	52	2
2	5	Shelf B	52	3	2	5	B	52	3
2	5	Shelf B	53	1	2	5	B	53	1
2	5	Shelf B	53	2	2	5	B	53	2
2	5	Shelf B	53	3	2	5	B	53	3
2	5	Shelf B	54	1	2	5	B	54	1
2	5	Shelf B	54	2	2	5	B	54	2
2	5	Shelf B	54	3	2	5	B	54	3
2	5	Shelf B	55	1	2	5	B	55	1
2	5	Shelf B	55	2	2	5	B	55	2
2	5	Shelf B	55	3	2	5	B	55	3
2	5	Shelf B	56	1	2	5	B	56	1
2	5	Shelf B	56	2	2	5	B	56	2
2	5	Shelf B	56	3	2	5	B	56	3
1	2	Shelf B	57	1	1	2	B	57	1
1	2	Shelf B	57	2	1	2	B	57	2
1	2	Shelf B	57	3	1	2	B	57	3
1	2	Shelf B	58	1	1	2	B	58	1
1	2	Shelf B	58	2	1	2	B	58	2
1	2	Shelf B	58	3	1	2	B	58	3
1	2	Shelf B	59	1	1	2	B	59	1
1	2	Shelf B	59	2	1	2	B	59	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	2	Shelf B	59	3	1	2	B	59	3
1	2	Shelf B	60	1	1	2	B	60	1
1	2	Shelf B	60	2	1	2	B	60	2
1	2	Shelf B	60	3	1	2	B	60	3
1	2	Shelf B	61	1	1	2	B	61	1
1	2	Shelf B	61	2	1	2	B	61	2
1	2	Shelf B	61	3	1	2	B	61	3
1	2	Shelf B	62	1	1	2	B	62	1
1	2	Shelf B	62	2	1	2	B	62	2
1	2	Shelf B	62	3	1	2	B	62	3
1	2	Shelf B	63	1	1	2	B	63	1
1	2	Shelf B	63	2	1	2	B	63	2
1	2	Shelf B	63	3	1	2	B	63	3
1	2	Shelf B	64	1	1	2	B	64	1
1	2	Shelf B	64	2	1	2	B	64	2
1	2	Shelf B	64	3	1	2	B	64	3
1	2	Shelf B	65	1	1	2	B	65	1
1	2	Shelf B	65	2	1	2	B	65	2
1	2	Shelf B	65	3	1	2	B	65	3
1	2	Shelf B	66	1	1	2	B	66	1
1	2	Shelf B	66	2	1	2	B	66	2
1	2	Shelf B	66	3	1	2	B	66	3
1	4	Shelf B	67	1	1	4	B	67	1
1	4	Shelf B	67	2	1	4	B	67	2
1	4	Shelf B	67	3	1	4	B	67	3
1	4	Shelf B	68	1	1	4	B	68	1
1	4	Shelf B	68	2	1	4	B	68	2
1	4	Shelf B	68	3	1	4	B	68	3
1	4	Shelf B	69	1	1	4	B	69	1
1	4	Shelf B	69	2	1	4	B	69	2
1	4	Shelf B	69	3	1	4	B	69	3
1	4	Shelf B	70	1	1	4	B	70	1
1	4	Shelf B	70	2	1	4	B	70	2
1	4	Shelf B	70	3	1	4	B	70	3
1	4	Shelf B	71	1	1	4	B	71	1
1	4	Shelf B	71	2	1	4	B	71	2
1	4	Shelf B	71	3	1	4	B	71	3
1	4	Shelf B	72	1	1	4	B	72	1
1	4	Shelf B	72	2	1	4	B	72	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	4	Shelf B	72	3	1	4	B	72	3
1	4	Shelf B	73	1	1	4	B	73	1
1	4	Shelf B	73	2	1	4	B	73	2
1	4	Shelf B	73	3	1	4	B	73	3
1	4	Shelf B	74	1	1	4	B	74	1
1	4	Shelf B	74	2	1	4	B	74	2
1	4	Shelf B	74	3	1	4	B	74	3
1	4	Shelf B	75	1	1	4	B	75	1
1	4	Shelf B	75	2	1	4	B	75	2
1	4	Shelf B	75	3	1	4	B	75	3
1	4	Shelf B	76	1	1	4	B	76	1
1	4	Shelf B	76	2	1	4	B	76	2
1	4	Shelf B	76	3	1	4	B	76	3
1	4	Shelf B	77	1	1	4	B	77	1
1	4	Shelf B	77	2	1	4	B	77	2
1	4	Shelf B	77	3	1	4	B	77	3
1	4	Shelf B	78	1	1	4	B	78	1
1	4	Shelf B	78	2	1	4	B	78	2
1	4	Shelf B	78	3	1	4	B	78	3
1	4	Shelf B	79	1	1	4	B	79	1
1	4	Shelf B	79	2	1	4	B	79	2
1	4	Shelf B	79	3	1	4	B	79	3
1	4	Shelf B	80	1	1	4	B	80	1
1	4	Shelf B	80	2	1	4	B	80	2
1	4	Shelf B	80	3	1	4	B	80	3
1	4	Shelf B	81	1	1	4	B	81	1
1	4	Shelf B	81	2	1	4	B	81	2
1	4	Shelf B	81	3	1	4	B	81	3
1	4	Shelf B	82	1	1	4	B	82	1
1	4	Shelf B	82	2	1	4	B	82	2
1	4	Shelf B	82	3	1	4	B	82	3
1	4	Shelf B	83	1	1	4	B	83	1
1	4	Shelf B	83	2	1	4	B	83	2
1	4	Shelf B	83	3	1	4	B	83	3
1	1.5	Shelf A	1	1	1	F	A	01	1
1	1.5	Shelf A	1	2	1	F	A	01	2
1	1.5	Shelf A	1	3	1	F	A	01	3
1	1.5	Shelf A	1	4	1	F	A	01	4
1	1.5	Shelf A	1	5	1	F	A	01	5

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	1.5	Shelf A	1	6	1	F	A	01	6
1	1.5	Shelf A	2	1	1	F	A	02	1
1	1.5	Shelf A	2	2	1	F	A	02	2
1	1.5	Shelf A	2	3	1	F	A	02	3
1	1.5	Shelf A	2	4	1	F	A	02	4
1	1.5	Shelf A	2	5	1	F	A	02	5
1	1.5	Shelf A	2	6	1	F	A	02	6
1	1.5	Shelf A	3	1	1	F	A	03	1
1	1.5	Shelf A	3	2	1	F	A	03	2
1	1.5	Shelf A	3	3	1	F	A	03	3
1	1.5	Shelf A	3	4	1	F	A	03	4
1	1.5	Shelf A	3	5	1	F	A	03	5
1	1.5	Shelf A	3	6	1	F	A	03	6
1	1.5	Shelf A	4	1	1	F	A	04	1
1	1.5	Shelf A	4	2	1	F	A	04	2
1	1.5	Shelf A	4	3	1	F	A	04	3
1	1.5	Shelf A	4	4	1	F	A	04	4
1	1.5	Shelf A	4	5	1	F	A	04	5
1	1.5	Shelf A	4	6	1	F	A	04	6
1	1.5	Shelf A	5	1	1	F	A	05	1
1	1.5	Shelf A	5	2	1	F	A	05	2
1	1.5	Shelf A	5	3	1	F	A	05	3
1	1.5	Shelf A	5	4	1	F	A	05	4
1	1.5	Shelf A	5	5	1	F	A	05	5
1	1.5	Shelf A	5	6	1	F	A	05	6
1	1.5	Shelf A	6	1	1	F	A	06	1
1	1.5	Shelf A	6	2	1	F	A	06	2
1	1.5	Shelf A	6	3	1	F	A	06	3
1	1.5	Shelf A	6	4	1	F	A	06	4
1	1.5	Shelf A	6	5	1	F	A	06	5
1	1.5	Shelf A	6	6	1	F	A	06	6
1	1.5	Shelf A	7	1	1	F	A	07	1
1	1.5	Shelf A	7	2	1	F	A	07	2
1	1.5	Shelf A	7	3	1	F	A	07	3
1	1.5	Shelf A	7	4	1	F	A	07	4
1	1.5	Shelf A	7	5	1	F	A	07	5
1	1.5	Shelf A	7	6	1	F	A	07	6
1	1.5	Shelf A	8	1	1	F	A	08	1
1	1.5	Shelf A	8	2	1	F	A	08	2



**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	1.5	Shelf A	8	3	1	F	A	08	3
1	1.5	Shelf A	8	4	1	F	A	08	4
1	1.5	Shelf A	8	5	1	F	A	08	5
1	1.5	Shelf A	8	6	1	F	A	08	6
1	1.5	Shelf A	9	1	1	F	A	09	1
1	1.5	Shelf A	9	2	1	F	A	09	2
1	1.5	Shelf A	9	3	1	F	A	09	3
1	1.5	Shelf A	9	4	1	F	A	09	4
1	1.5	Shelf A	9	5	1	F	A	09	5
1	1.5	Shelf A	9	6	1	F	A	09	6
1	1.5	Shelf A	10	1	1	F	A	10	1
1	1.5	Shelf A	10	2	1	F	A	10	2
1	1.5	Shelf A	10	3	1	F	A	10	3
1	1.5	Shelf A	10	4	1	F	A	10	4
1	1.5	Shelf A	10	5	1	F	A	10	5
1	1.5	Shelf A	10	6	1	F	A	10	6
1	1.5	Shelf A	11	1	1	F	A	11	1
1	1.5	Shelf A	11	2	1	F	A	11	2
1	1.5	Shelf A	11	3	1	F	A	11	3
1	1.5	Shelf A	11	4	1	F	A	11	4
1	1.5	Shelf A	11	5	1	F	A	11	5
1	1.5	Shelf A	11	6	1	F	A	11	6
1	1.5	Shelf A	12	1	1	F	A	12	1
1	1.5	Shelf A	12	2	1	F	A	12	2
1	1.5	Shelf A	12	3	1	F	A	12	3
1	1.5	Shelf A	12	4	1	F	A	12	4
1	1.5	Shelf A	12	5	1	F	A	12	5
1	1.5	Shelf A	12	6	1	F	A	12	6
1	1.5	Shelf A	13	1	1	F	A	13	1
1	1.5	Shelf A	13	2	1	F	A	13	2
1	1.5	Shelf A	13	3	1	F	A	13	3
1	1.5	Shelf A	13	4	1	F	A	13	4
1	1.5	Shelf A	13	5	1	F	A	13	5
1	1.5	Shelf A	13	6	1	F	A	13	6
1	1.5	Shelf A	14	1	1	F	A	14	1
1	1.5	Shelf A	14	2	1	F	A	14	2
1	1.5	Shelf A	14	3	1	F	A	14	3
1	1.5	Shelf A	14	4	1	F	A	14	4
1	1.5	Shelf A	14	5	1	F	A	14	5

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	1.5	Shelf A	14	6	1	F	A	14	6
1	1.5	Shelf A	15	1	1	F	A	15	1
1	1.5	Shelf A	15	2	1	F	A	15	2
1	1.5	Shelf A	15	3	1	F	A	15	3
1	1.5	Shelf A	15	4	1	F	A	15	4
1	1.5	Shelf A	15	5	1	F	A	15	5
1	1.5	Shelf A	15	6	1	F	A	15	6
1	1.5	Shelf A	16	1	1	F	A	16	1
1	1.5	Shelf A	16	2	1	F	A	16	2
1	1.5	Shelf A	16	3	1	F	A	16	3
1	1.5	Shelf A	16	4	1	F	A	16	4
1	1.5	Shelf A	16	5	1	F	A	16	5
1	1.5	Shelf A	16	6	1	F	A	16	6
1	1.5	Shelf A	17	1	1	F	A	17	1
1	1.5	Shelf A	17	2	1	F	A	17	2
1	1.5	Shelf A	17	3	1	F	A	17	3
1	1.5	Shelf A	17	4	1	F	A	17	4
1	1.5	Shelf A	17	5	1	F	A	17	5
1	1.5	Shelf A	17	6	1	F	A	17	6
1	1.5	Shelf A	18	1	1	F	A	18	1
1	1.5	Shelf A	18	2	1	F	A	18	2
1	1.5	Shelf A	18	3	1	F	A	18	3
1	1.5	Shelf A	18	4	1	F	A	18	4
1	1.5	Shelf A	18	5	1	F	A	18	5
1	1.5	Shelf A	18	6	1	F	A	18	6
1	1.5	Shelf A	19	1	1	F	A	19	1
1	1.5	Shelf A	19	2	1	F	A	19	2
1	1.5	Shelf A	19	3	1	F	A	19	3
1	1.5	Shelf A	19	4	1	F	A	19	4
1	1.5	Shelf A	19	5	1	F	A	19	5
1	1.5	Shelf A	19	6	1	F	A	19	6
1	1.5	Shelf A	20	1	1	F	A	20	1
1	1.5	Shelf A	20	2	1	F	A	20	2
1	1.5	Shelf A	20	3	1	F	A	20	3
1	1.5	Shelf A	20	4	1	F	A	20	4
1	1.5	Shelf A	20	5	1	F	A	20	5
1	1.5	Shelf A	20	6	1	F	A	20	6
1	1.5	Shelf A	21	1	1	F	A	21	1
1	1.5	Shelf A	21	2	1	F	A	21	2

Table D.1: The storage location address(Cont.)

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	1.5	Shelf A	21	3	1	F	A	21	3
1	1.5	Shelf A	21	4	1	F	A	21	4
1	1.5	Shelf A	21	5	1	F	A	21	5
1	1.5	Shelf A	21	6	1	F	A	21	6
1	1.5	Shelf A	22	1	1	F	A	22	1
1	1.5	Shelf A	22	2	1	F	A	22	2
1	1.5	Shelf A	22	3	1	F	A	22	3
1	1.5	Shelf A	22	4	1	F	A	22	4
1	1.5	Shelf A	22	5	1	F	A	22	5
1	1.5	Shelf A	22	6	1	F	A	22	6
1	1.5	Shelf A	23	1	1	F	A	23	1
1	1.5	Shelf A	23	2	1	F	A	23	2
1	1.5	Shelf A	23	3	1	F	A	23	3
1	1.5	Shelf A	23	4	1	F	A	23	4
1	1.5	Shelf A	23	5	1	F	A	23	5
1	1.5	Shelf A	23	6	1	F	A	23	6
1	1.5	Shelf A	24	1	1	F	A	24	1
1	1.5	Shelf A	24	2	1	F	A	24	2
1	1.5	Shelf A	24	3	1	F	A	24	3
1	1.5	Shelf A	24	4	1	F	A	24	4
1	1.5	Shelf A	24	5	1	F	A	24	5
1	1.5	Shelf A	24	6	1	F	A	24	6
1	1.5	Shelf A	25	1	1	F	A	25	1
1	1.5	Shelf A	25	2	1	F	A	25	2
1	1.5	Shelf A	25	3	1	F	A	25	3
1	1.5	Shelf A	25	4	1	F	A	25	4
1	1.5	Shelf A	25	5	1	F	A	25	5
1	1.5	Shelf A	25	6	1	F	A	25	6
1	1.5	Shelf A	26	1	1	F	A	26	1
1	1.5	Shelf A	26	2	1	F	A	26	2
1	1.5	Shelf A	26	3	1	F	A	26	3
1	1.5	Shelf A	26	4	1	F	A	26	4
1	1.5	Shelf A	26	5	1	F	A	26	5
1	1.5	Shelf A	26	6	1	F	A	26	6
1	1.5	Shelf A	27	1	1	F	A	27	1
1	1.5	Shelf A	27	2	1	F	A	27	2
1	1.5	Shelf A	27	3	1	F	A	27	3
1	1.5	Shelf A	27	4	1	F	A	27	4
1	1.5	Shelf A	27	5	1	F	A	27	5

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	1.5	Shelf A	27	6	1	F	A	27	6
1	1.5	Shelf A	28	1	1	F	A	28	1
1	1.5	Shelf A	28	2	1	F	A	28	2
1	1.5	Shelf A	28	3	1	F	A	28	3
1	1.5	Shelf A	28	4	1	F	A	28	4
1	1.5	Shelf A	28	5	1	F	A	28	5
1	1.5	Shelf A	28	6	1	F	A	28	6
1	1.5	Shelf A	29	1	1	F	A	29	1
1	1.5	Shelf A	29	2	1	F	A	29	2
1	1.5	Shelf A	29	3	1	F	A	29	3
1	1.5	Shelf A	29	4	1	F	A	29	4
1	1.5	Shelf A	29	5	1	F	A	29	5
1	1.5	Shelf A	29	6	1	F	A	29	6
1	5	Shelf A	30	1	1	5	A	30	1
1	5	Shelf A	30	2	1	5	A	30	2
1	5	Shelf A	30	3	1	5	A	30	3
1	5	Shelf A	30	4	1	5	A	30	4
1	5	Shelf A	30	5	1	5	A	30	5
1	5	Shelf A	30	6	1	5	A	30	6
1	5	Shelf A	31	1	1	5	A	31	1
1	5	Shelf A	31	2	1	5	A	31	2
1	5	Shelf A	31	3	1	5	A	31	3
1	5	Shelf A	31	4	1	5	A	31	4
1	5	Shelf A	31	5	1	5	A	31	5
1	5	Shelf A	31	6	1	5	A	31	6
1	5	Shelf A	32	1	1	5	A	32	1
1	5	Shelf A	32	2	1	5	A	32	2
1	5	Shelf A	32	3	1	5	A	32	3
1	5	Shelf A	32	4	1	5	A	32	4
1	5	Shelf A	32	5	1	5	A	32	5
1	5	Shelf A	32	6	1	5	A	32	6
1	5	Shelf A	33	1	1	5	A	33	1
1	5	Shelf A	33	2	1	5	A	33	2
1	5	Shelf A	33	3	1	5	A	33	3
1	5	Shelf A	33	4	1	5	A	33	4
1	5	Shelf A	33	5	1	5	A	33	5
1	5	Shelf A	33	6	1	5	A	33	6
1	5	Shelf A	34	1	1	5	A	34	1
1	5	Shelf A	34	2	1	5	A	34	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	34	3	1	5	A	34	3
1	5	Shelf A	34	4	1	5	A	34	4
1	5	Shelf A	34	5	1	5	A	34	5
1	5	Shelf A	34	6	1	5	A	34	6
1	5	Shelf A	35	1	1	5	A	35	1
1	5	Shelf A	35	2	1	5	A	35	2
1	5	Shelf A	35	3	1	5	A	35	3
1	5	Shelf A	35	4	1	5	A	35	4
1	5	Shelf A	35	5	1	5	A	35	5
1	5	Shelf A	35	6	1	5	A	35	6
1	5	Shelf A	36	1	1	5	A	36	1
1	5	Shelf A	36	2	1	5	A	36	2
1	5	Shelf A	36	3	1	5	A	36	3
1	5	Shelf A	36	4	1	5	A	36	4
1	5	Shelf A	36	5	1	5	A	36	5
1	5	Shelf A	36	6	1	5	A	36	6
1	5	Shelf A	37	1	1	5	A	37	1
1	5	Shelf A	37	2	1	5	A	37	2
1	5	Shelf A	37	3	1	5	A	37	3
1	5	Shelf A	37	4	1	5	A	37	4
1	5	Shelf A	37	5	1	5	A	37	5
1	5	Shelf A	37	6	1	5	A	37	6
1	5	Shelf A	38	1	1	5	A	38	1
1	5	Shelf A	38	2	1	5	A	38	2
1	5	Shelf A	38	3	1	5	A	38	3
1	5	Shelf A	38	4	1	5	A	38	4
1	5	Shelf A	38	5	1	5	A	38	5
1	5	Shelf A	38	6	1	5	A	38	6
1	5	Shelf A	39	1	1	5	A	39	1
1	5	Shelf A	39	2	1	5	A	39	2
1	5	Shelf A	39	3	1	5	A	39	3
1	5	Shelf A	39	4	1	5	A	39	4
1	5	Shelf A	39	5	1	5	A	39	5
1	5	Shelf A	39	6	1	5	A	39	6
1	5	Shelf A	40	1	1	5	A	40	1
1	5	Shelf A	40	2	1	5	A	40	2
1	5	Shelf A	40	3	1	5	A	40	3
1	5	Shelf A	40	4	1	5	A	40	4
1	5	Shelf A	40	5	1	5	A	40	5

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	40	6	1	5	A	40	6
1	5	Shelf A	41	1	1	5	A	41	1
1	5	Shelf A	41	2	1	5	A	41	2
1	5	Shelf A	41	3	1	5	A	41	3
1	5	Shelf A	41	4	1	5	A	41	4
1	5	Shelf A	41	5	1	5	A	41	5
1	5	Shelf A	41	6	1	5	A	41	6
1	5	Shelf A	42	1	1	5	A	42	1
1	5	Shelf A	42	2	1	5	A	42	2
1	5	Shelf A	42	3	1	5	A	42	3
1	5	Shelf A	42	4	1	5	A	42	4
1	5	Shelf A	42	5	1	5	A	42	5
1	5	Shelf A	42	6	1	5	A	42	6
1	5	Shelf A	43	1	1	5	A	43	1
1	5	Shelf A	43	2	1	5	A	43	2
1	5	Shelf A	43	3	1	5	A	43	3
1	5	Shelf A	43	4	1	5	A	43	4
1	5	Shelf A	43	5	1	5	A	43	5
1	5	Shelf A	43	6	1	5	A	43	6
1	5	Shelf A	44	1	1	5	A	44	1
1	5	Shelf A	44	2	1	5	A	44	2
1	5	Shelf A	44	3	1	5	A	44	3
1	5	Shelf A	44	4	1	5	A	44	4
1	5	Shelf A	44	5	1	5	A	44	5
1	5	Shelf A	44	6	1	5	A	44	6
1	5	Shelf A	45	1	1	5	A	45	1
1	5	Shelf A	45	2	1	5	A	45	2
1	5	Shelf A	45	3	1	5	A	45	3
1	5	Shelf A	45	4	1	5	A	45	4
1	5	Shelf A	45	5	1	5	A	45	5
1	5	Shelf A	45	6	1	5	A	45	6
1	5	Shelf A	46	1	1	5	A	46	1
1	5	Shelf A	46	2	1	5	A	46	2
1	5	Shelf A	46	3	1	5	A	46	3
1	5	Shelf A	46	4	1	5	A	46	4
1	5	Shelf A	46	5	1	5	A	46	5
1	5	Shelf A	46	6	1	5	A	46	6
1	5	Shelf A	47	1	1	5	A	47	1
1	5	Shelf A	47	2	1	5	A	47	2

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	47	3	1	5	A	47	3
1	5	Shelf A	47	4	1	5	A	47	4
1	5	Shelf A	47	5	1	5	A	47	5
1	5	Shelf A	47	6	1	5	A	47	6
1	5	Shelf A	48	1	1	5	A	48	1
1	5	Shelf A	48	2	1	5	A	48	2
1	5	Shelf A	48	3	1	5	A	48	3
1	5	Shelf A	48	4	1	5	A	48	4
1	5	Shelf A	48	5	1	5	A	48	5
1	5	Shelf A	48	6	1	5	A	48	6
1	5	Shelf A	49	1	1	5	A	49	1
1	5	Shelf A	49	2	1	5	A	49	2
1	5	Shelf A	49	3	1	5	A	49	3
1	5	Shelf A	49	4	1	5	A	49	4
1	5	Shelf A	49	5	1	5	A	49	5
1	5	Shelf A	49	6	1	5	A	49	6
1	5	Shelf A	50	1	1	5	A	50	1
1	5	Shelf A	50	2	1	5	A	50	2
1	5	Shelf A	50	3	1	5	A	50	3
1	5	Shelf A	50	4	1	5	A	50	4
1	5	Shelf A	50	5	1	5	A	50	5
1	5	Shelf A	50	6	1	5	A	50	6
1	5	Shelf A	51	1	1	5	A	51	1
1	5	Shelf A	51	2	1	5	A	51	2
1	5	Shelf A	51	3	1	5	A	51	3
1	5	Shelf A	51	4	1	5	A	51	4
1	5	Shelf A	51	5	1	5	A	51	5
1	5	Shelf A	51	6	1	5	A	51	6
1	5	Shelf A	52	1	1	5	A	52	1
1	5	Shelf A	52	2	1	5	A	52	2
1	5	Shelf A	52	3	1	5	A	52	3
1	5	Shelf A	52	4	1	5	A	52	4
1	5	Shelf A	52	5	1	5	A	52	5
1	5	Shelf A	52	6	1	5	A	52	6
1	5	Shelf A	53	1	1	5	A	53	1
1	5	Shelf A	53	2	1	5	A	53	2
1	5	Shelf A	53	3	1	5	A	53	3
1	5	Shelf A	53	4	1	5	A	53	4
1	5	Shelf A	53	5	1	5	A	53	5

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	53	6	1	5	A	53	6
1	5	Shelf A	54	1	1	5	A	54	1
1	5	Shelf A	54	2	1	5	A	54	2
1	5	Shelf A	54	3	1	5	A	54	3
1	5	Shelf A	54	4	1	5	A	54	4
1	5	Shelf A	54	5	1	5	A	54	5
1	5	Shelf A	54	6	1	5	A	54	6
1	5	Shelf A	55	1	1	5	A	55	1
1	5	Shelf A	55	2	1	5	A	55	2
1	5	Shelf A	55	3	1	5	A	55	3
1	5	Shelf A	55	4	1	5	A	55	4
1	5	Shelf A	55	5	1	5	A	55	5
1	5	Shelf A	55	6	1	5	A	55	6
1	5	Shelf A	56	1	1	5	A	56	1
1	5	Shelf A	56	2	1	5	A	56	2
1	5	Shelf A	56	3	1	5	A	56	3
1	5	Shelf A	56	4	1	5	A	56	4
1	5	Shelf A	56	5	1	5	A	56	5
1	5	Shelf A	56	6	1	5	A	56	6
1	5	Shelf A	57	1	1	5	A	57	1
1	5	Shelf A	57	2	1	5	A	57	2
1	5	Shelf A	57	3	1	5	A	57	3
1	5	Shelf A	57	4	1	5	A	57	4
1	5	Shelf A	57	5	1	5	A	57	5
1	5	Shelf A	57	6	1	5	A	57	6
1	5	Shelf A	58	1	1	5	A	58	1
1	5	Shelf A	58	2	1	5	A	58	2
1	5	Shelf A	58	3	1	5	A	58	3
1	5	Shelf A	58	4	1	5	A	58	4
1	5	Shelf A	58	5	1	5	A	58	5
1	5	Shelf A	58	6	1	5	A	58	6
1	5	Shelf A	59	1	1	5	A	59	1
1	5	Shelf A	59	2	1	5	A	59	2
1	5	Shelf A	59	3	1	5	A	59	3
1	5	Shelf A	59	4	1	5	A	59	4
1	5	Shelf A	59	5	1	5	A	59	5
1	5	Shelf A	59	6	1	5	A	59	6
1	5	Shelf A	60	1	1	5	A	60	1
1	5	Shelf A	60	2	1	5	A	60	2



**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	60	3	1	5	A	60	3
1	5	Shelf A	60	4	1	5	A	60	4
1	5	Shelf A	60	5	1	5	A	60	5
1	5	Shelf A	60	6	1	5	A	60	6
1	5	Shelf A	61	1	1	5	A	61	1
1	5	Shelf A	61	2	1	5	A	61	2
1	5	Shelf A	61	3	1	5	A	61	3
1	5	Shelf A	61	4	1	5	A	61	4
1	5	Shelf A	61	5	1	5	A	61	5
1	5	Shelf A	61	6	1	5	A	61	6
1	5	Shelf A	62	1	1	5	A	62	1
1	5	Shelf A	62	2	1	5	A	62	2
1	5	Shelf A	62	3	1	5	A	62	3
1	5	Shelf A	62	4	1	5	A	62	4
1	5	Shelf A	62	5	1	5	A	62	5
1	5	Shelf A	62	6	1	5	A	62	6
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1

122162562

Table D.1: The storage location address(Cont.)

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1

**Table D.1: The storage location address(Cont.)**

Storage location					Storage location Address				
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer					
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6
1	5	Shelf A	63	1	1	5	A	63	1
1	5	Shelf A	63	2	1	5	A	63	2
1	5	Shelf A	63	3	1	5	A	63	3
1	5	Shelf A	63	4	1	5	A	63	4
1	5	Shelf A	63	5	1	5	A	63	5
1	5	Shelf A	63	6	1	5	A	63	6

**Table D.2: Specification of storage location for normal item**

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm <sup>3</sup> )
2	3	Shelf B	8	1	Normal: class 2	N	H	569,400
2	3	Shelf B	8	2	Normal: class 2	N	M	569,400
2	3	Shelf B	8	3	Normal: class 2	N	L	569,400
2	3	Shelf B	9	1	Normal: class 2	N	H	569,400
2	3	Shelf B	9	2	Normal: class 2	N	M	569,400
2	3	Shelf B	9	3	Normal: class 2	N	L	569,400
2	3	Shelf B	10	1	Normal: class 2	N	H	569,400
2	3	Shelf B	10	2	Normal: class 2	N	M	569,400
2	3	Shelf B	10	3	Normal: class 2	N	L	569,400
2	3	Shelf B	11	1	Normal: class 2	M	H	569,400
2	3	Shelf B	11	2	Normal: class 2	M	M	569,400
2	3	Shelf B	11	3	Normal: class 2	M	L	569,400
2	3	Shelf B	12	1	Normal: class 2	M	H	569,400
2	3	Shelf B	12	2	Normal: class 2	M	M	569,400
2	3	Shelf B	12	3	Normal: class 2	M	L	569,400
2	3	Shelf B	13	1	Normal: class 2	M	H	569,400
2	3	Shelf B	13	2	Normal: class 2	M	M	569,400
2	3	Shelf B	13	3	Normal: class 2	M	L	569,400
2	3	Shelf B	14	1	Normal: class 2	N	H	569,400
2	3	Shelf B	14	2	Normal: class 2	N	M	569,400
2	3	Shelf B	14	3	Normal: class 2	N	L	569,400
2	3	Shelf B	15	1	Normal: class 2	N	H	569,400
2	3	Shelf B	15	2	Normal: class 2	N	M	569,400
2	3	Shelf B	15	3	Normal: class 2	N	L	569,400
2	3	Shelf B	16	1	Normal: class 2	N	H	569,400
2	3	Shelf B	16	2	Normal: class 2	N	M	569,400
2	3	Shelf B	16	3	Normal: class 2	N	L	569,400
2	3	Shelf B	17	1	Normal: class 2	F	H	569,400
2	3	Shelf B	17	2	Normal: class 2	F	M	569,400
2	3	Shelf B	17	3	Normal: class 2	F	L	569,400
2	3	Shelf B	18	1	Normal: class 2	F	H	569,400
2	3	Shelf B	18	2	Normal: class 2	F	M	569,400
2	3	Shelf B	18	3	Normal: class 2	F	L	569,400
2	3	Shelf B	19	1	Normal: class 2	N	H	569,400
2	3	Shelf B	19	2	Normal: class 2	N	M	569,400
2	3	Shelf B	19	3	Normal: class 2	N	L	569,400
2	3	Shelf B	20	1	Normal: class 2	M	H	569,400
2	3	Shelf B	20	2	Normal: class 2	M	M	569,400
2	3	Shelf B	20	3	Normal: class 2	M	L	569,400
2	3	Shelf B	21	1	Normal: class 2	M	H	569,400
2	3	Shelf B	21	2	Normal: class 2	M	M	569,400
2	3	Shelf B	21	3	Normal: class 2	M	L	569,400
2	3	Shelf B	22	1	Normal: class 2	F	H	569,400
2	3	Shelf B	22	2	Normal: class 2	F	M	569,400
2	3	Shelf B	22	3	Normal: class 2	F	L	569,400
2	3	Shelf B	23	1	Normal: class 2	F	H	569,400
2	3	Shelf B	23	2	Normal: class 2	F	M	569,400
2	3	Shelf B	23	3	Normal: class 2	F	L	569,400
2	3	Shelf B	24	1	Normal: class 2	F	H	569,400
2	3	Shelf B	24	2	Normal: class 2	F	M	569,400
2	3	Shelf B	24	3	Normal: class 2	F	L	569,400
2	4	Shelf B	25	1	Normal: class 2	N	H	569,400
2	4	Shelf B	25	2	Normal: class 2	N	M	569,400
2	4	Shelf B	25	3	Normal: class 2	N	L	569,400
2	4	Shelf B	26	1	Normal: class 2	N	H	569,400
2	4	Shelf B	26	2	Normal: class 2	N	M	569,400
2	4	Shelf B	26	3	Normal: class 2	N	L	569,400
2	4	Shelf B	27	1	Normal: class 2	N	H	569,400
2	4	Shelf B	27	2	Normal: class 2	N	M	569,400
2	4	Shelf B	27	3	Normal: class 2	N	L	569,400
2	4	Shelf B	28	1	Normal: class 2	F	H	569,400
2	4	Shelf B	28	2	Normal: class 2	F	M	569,400

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm3)
2	4	Shelf B	28	3	Normal: class 2	F	L	569,400
2	4	Shelf B	29	1	Normal: class 2	F	H	569,400
2	4	Shelf B	29	2	Normal: class 2	F	M	569,400
2	4	Shelf B	29	3	Normal: class 2	F	L	569,400
2	4	Shelf B	30	1	Normal: class 2	F	H	569,400
2	4	Shelf B	30	2	Normal: class 2	F	M	569,400
2	4	Shelf B	30	3	Normal: class 2	F	L	569,400
2	4	Shelf B	31	1	Normal: class 2	N	H	569,400
2	4	Shelf B	31	2	Normal: class 2	N	M	569,400
2	4	Shelf B	31	3	Normal: class 2	N	L	569,400
2	4	Shelf B	32	1	Normal: class 2	N	H	569,400
2	4	Shelf B	32	2	Normal: class 2	N	M	569,400
2	4	Shelf B	32	3	Normal: class 2	N	L	569,400
2	4	Shelf B	33	1	Normal: class 2	N	H	569,400
2	4	Shelf B	33	2	Normal: class 2	N	M	569,400
2	4	Shelf B	33	3	Normal: class 2	N	L	569,400
2	4	Shelf B	34	1	Normal: class 2	N	H	569,400
2	4	Shelf B	34	2	Normal: class 2	N	M	569,400
2	4	Shelf B	34	3	Normal: class 2	N	L	569,400
2	4	Shelf B	35	1	Normal: class 2	M	H	569,400
2	4	Shelf B	35	2	Normal: class 2	M	M	569,400
2	4	Shelf B	35	3	Normal: class 2	M	L	569,400
2	4	Shelf B	36	1	Normal: class 2	M	H	569,400
2	4	Shelf B	36	2	Normal: class 2	M	M	569,400
2	4	Shelf B	36	3	Normal: class 2	M	L	569,400
2	4	Shelf B	37	1	Normal: class 2	M	H	569,400
2	4	Shelf B	37	2	Normal: class 2	M	M	569,400
2	4	Shelf B	37	3	Normal: class 2	M	L	569,400
2	4	Shelf B	38	1	Normal: class 2	M	H	569,400
2	4	Shelf B	38	2	Normal: class 2	M	M	569,400
2	4	Shelf B	38	3	Normal: class 2	M	L	569,400
2	4	Shelf B	39	1	Normal: class 2	M	H	569,400
2	4	Shelf B	39	2	Normal: class 2	M	M	569,400
2	4	Shelf B	39	3	Normal: class 2	M	L	569,400
2	5	Shelf B	40	1	Normal: class 2	N	H	569,400
2	5	Shelf B	40	2	Normal: class 2	N	M	569,400
2	5	Shelf B	40	3	Normal: class 2	N	L	569,400
2	5	Shelf B	41	1	Normal: class 2	N	H	569,400
2	5	Shelf B	41	2	Normal: class 2	N	M	569,400
2	5	Shelf B	41	3	Normal: class 2	N	L	569,400
2	5	Shelf B	42	1	Normal: class 2	N	H	569,400
2	5	Shelf B	42	2	Normal: class 2	N	M	569,400
2	5	Shelf B	42	3	Normal: class 2	N	L	569,400
2	5	Shelf B	43	1	Normal: class 2	N	H	569,400
2	5	Shelf B	43	2	Normal: class 2	N	M	569,400
2	5	Shelf B	43	3	Normal: class 2	N	L	569,400
2	5	Shelf B	44	1	Normal: class 2	N	H	569,400
2	5	Shelf B	44	2	Normal: class 2	N	M	569,400
2	5	Shelf B	44	3	Normal: class 2	N	L	569,400
2	5	Shelf B	45	1	Normal: class 2	M	H	569,400
2	5	Shelf B	45	2	Normal: class 2	M	M	569,400
2	5	Shelf B	45	3	Normal: class 2	M	L	569,400
2	5	Shelf B	46	1	Normal: class 2	F	H	569,400
2	5	Shelf B	46	2	Normal: class 2	F	M	569,400
2	5	Shelf B	46	3	Normal: class 2	F	L	569,400
2	5	Shelf B	47	1	Normal: class 2	F	H	569,400
2	5	Shelf B	47	2	Normal: class 2	F	M	569,400
2	5	Shelf B	47	3	Normal: class 2	F	L	569,400
2	5	Shelf B	48	1	Normal: class 2	F	H	569,400
2	5	Shelf B	48	2	Normal: class 2	F	M	569,400
2	5	Shelf B	48	3	Normal: class 2	F	L	569,400
2	5	Shelf B	49	1	Normal: class 2	N	H	569,400

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm3)
2	5	Shelf B	49	2	Normal: class 2	N	M	569,400
2	5	Shelf B	49	3	Normal: class 2	N	L	569,400
2	5	Shelf B	50	1	Normal: class 2	N	H	569,400
2	5	Shelf B	50	2	Normal: class 2	N	M	569,400
2	5	Shelf B	50	3	Normal: class 2	N	L	569,400
2	5	Shelf B	51	1	Normal: class 2	M	H	569,400
2	5	Shelf B	51	2	Normal: class 2	M	M	569,400
2	5	Shelf B	51	3	Normal: class 2	M	L	569,400
2	5	Shelf B	52	1	Normal: class 2	F	H	569,400
2	5	Shelf B	52	2	Normal: class 2	F	M	569,400
2	5	Shelf B	52	3	Normal: class 2	F	L	569,400
2	5	Shelf B	53	1	Normal: class 2	F	H	569,400
2	5	Shelf B	53	2	Normal: class 2	F	M	569,400
2	5	Shelf B	53	3	Normal: class 2	F	L	569,400
2	5	Shelf B	54	1	Normal: class 2	M	H	569,400
2	5	Shelf B	54	2	Normal: class 2	M	M	569,400
2	5	Shelf B	54	3	Normal: class 2	M	L	569,400
2	5	Shelf B	55	1	Normal: class 2	M	H	569,400
2	5	Shelf B	55	2	Normal: class 2	M	M	569,400
2	5	Shelf B	55	3	Normal: class 2	M	L	569,400
2	5	Shelf B	56	1	Normal: class 2	M	H	569,400
2	5	Shelf B	56	2	Normal: class 2	M	M	569,400
2	5	Shelf B	56	3	Normal: class 2	M	L	569,400
1	2	Shelf B	57	1	Normal: class 2	N	H	569,400
1	2	Shelf B	57	2	Normal: class 2	N	M	569,400
1	2	Shelf B	57	3	Normal: class 2	N	L	569,400
1	2	Shelf B	58	1	Normal: class 2	N	H	569,400
1	2	Shelf B	58	2	Normal: class 2	N	M	569,400
1	2	Shelf B	58	3	Normal: class 2	N	L	569,400
1	2	Shelf B	59	1	Normal: class 2	N	H	569,400
1	2	Shelf B	59	2	Normal: class 2	N	M	569,400
1	2	Shelf B	59	3	Normal: class 2	N	L	569,400
1	2	Shelf B	60	1	Normal: class 2	N	H	569,400
1	2	Shelf B	60	2	Normal: class 2	N	M	569,400
1	2	Shelf B	60	3	Normal: class 2	N	L	569,400
1	2	Shelf B	61	1	Normal: class 2	M	H	569,400
1	2	Shelf B	61	2	Normal: class 2	M	M	569,400
1	2	Shelf B	61	3	Normal: class 2	M	L	569,400
1	2	Shelf B	62	1	Normal: class 2	M	H	569,400
1	2	Shelf B	62	2	Normal: class 2	M	M	569,400
1	2	Shelf B	62	3	Normal: class 2	M	L	569,400
1	2	Shelf B	63	1	Normal: class 2	F	H	569,400
1	2	Shelf B	63	2	Normal: class 2	F	M	569,400
1	2	Shelf B	63	3	Normal: class 2	F	L	569,400
1	2	Shelf B	64	1	Normal: class 2	F	H	569,400
1	2	Shelf B	64	2	Normal: class 2	F	M	569,400
1	2	Shelf B	64	3	Normal: class 2	F	L	569,400
1	2	Shelf B	65	1	Normal: class 2	M	H	569,400
1	2	Shelf B	65	2	Normal: class 2	M	M	569,400
1	2	Shelf B	65	3	Normal: class 2	M	L	569,400
1	2	Shelf B	66	1	Normal: class 2	F	H	569,400
1	2	Shelf B	66	2	Normal: class 2	F	M	569,400
1	2	Shelf B	66	3	Normal: class 2	F	L	569,400
1	4	Shelf B	67	1	Normal: class 2	N	H	569,400
1	4	Shelf B	67	2	Normal: class 2	N	M	569,400
1	4	Shelf B	67	3	Normal: class 2	N	L	569,400
1	4	Shelf B	68	1	Normal: class 2	N	H	569,400
1	4	Shelf B	68	2	Normal: class 2	N	M	569,400
1	4	Shelf B	68	3	Normal: class 2	N	L	569,400
1	4	Shelf B	69	1	Normal: class 2	M	H	569,400
1	4	Shelf B	69	2	Normal: class 2	M	M	569,400
1	4	Shelf B	69	3	Normal: class 2	M	L	569,400

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm3)
1	4	Shelf B	70	1	Normal: class 2	M	H	569,400
1	4	Shelf B	70	2	Normal: class 2	M	M	569,400
1	4	Shelf B	70	3	Normal: class 2	M	L	569,400
1	4	Shelf B	71	1	Normal: class 2	M	H	569,400
1	4	Shelf B	71	2	Normal: class 2	M	M	569,400
1	4	Shelf B	71	3	Normal: class 2	M	L	569,400
1	4	Shelf B	72	1	Normal: class 2	M	H	569,400
1	4	Shelf B	72	2	Normal: class 2	M	M	569,400
1	4	Shelf B	72	3	Normal: class 2	M	L	569,400
1	4	Shelf B	73	1	Normal: class 2	N	H	569,400
1	4	Shelf B	73	2	Normal: class 2	N	M	569,400
1	4	Shelf B	73	3	Normal: class 2	N	L	569,400
1	4	Shelf B	74	1	Normal: class 2	N	H	569,400
1	4	Shelf B	74	2	Normal: class 2	N	M	569,400
1	4	Shelf B	74	3	Normal: class 2	N	L	569,400
1	4	Shelf B	75	1	Normal: class 2	N	H	569,400
1	4	Shelf B	75	2	Normal: class 2	N	M	569,400
1	4	Shelf B	75	3	Normal: class 2	N	L	569,400
1	4	Shelf B	76	1	Normal: class 2	M	H	569,400
1	4	Shelf B	76	2	Normal: class 2	M	M	569,400
1	4	Shelf B	76	3	Normal: class 2	M	L	569,400
1	4	Shelf B	77	1	Normal: class 2	F	H	569,400
1	4	Shelf B	77	2	Normal: class 2	F	M	569,400
1	4	Shelf B	77	3	Normal: class 2	F	L	569,400
1	4	Shelf B	78	1	Normal: class 2	F	H	569,400
1	4	Shelf B	78	2	Normal: class 2	F	M	569,400
1	4	Shelf B	78	3	Normal: class 2	F	L	569,400
1	4	Shelf B	79	1	Normal: class 2	N	H	569,400
1	4	Shelf B	79	2	Normal: class 2	N	M	569,400
1	4	Shelf B	79	3	Normal: class 2	N	L	569,400
1	4	Shelf B	80	1	Normal: class 2	M	H	569,400
1	4	Shelf B	80	2	Normal: class 2	M	M	569,400
1	4	Shelf B	80	3	Normal: class 2	M	L	569,400
1	4	Shelf B	81	1	Normal: class 2	F	H	569,400
1	4	Shelf B	81	2	Normal: class 2	F	M	569,400
1	4	Shelf B	81	3	Normal: class 2	F	L	569,400
1	4	Shelf B	82	1	Normal: class 2	F	H	569,400
1	4	Shelf B	82	2	Normal: class 2	F	M	569,400
1	4	Shelf B	82	3	Normal: class 2	F	L	569,400
1	4	Shelf B	83	1	Normal: class 2	F	H	569,400
1	4	Shelf B	83	2	Normal: class 2	F	M	569,400
1	4	Shelf B	83	3	Normal: class 2	F	L	569,400
1	1.5	Shelf A	1	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	1	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	1	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	1	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	1	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	1	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	2	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	2	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	2	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	2	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	2	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	2	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	3	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	3	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	3	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	3	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	3	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	3	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	4	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	4	2	Normal: class 1	N	H	100,800



Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm3)
1	1.5	Shelf A	4	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	4	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	4	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	4	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	5	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	5	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	5	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	5	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	5	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	5	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	6	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	6	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	6	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	6	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	6	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	6	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	7	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	7	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	7	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	7	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	7	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	7	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	8	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	8	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	8	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	8	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	8	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	8	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	9	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	9	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	9	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	9	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	9	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	9	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	10	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	10	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	10	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	10	4	Normal: class 1	F	M	100,800
1	1.5	Shelf A	10	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	10	6	Normal: class 1	F	L	100,800
1	1.5	Shelf A	11	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	11	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	11	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	11	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	11	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	11	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	12	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	12	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	12	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	12	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	12	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	12	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	13	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	13	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	13	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	13	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	13	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	13	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	14	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	14	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	14	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	14	4	Normal: class 1	F	M	100,800

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm <sup>3</sup> )
1	1.5	Shelf A	14	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	14	6	Normal: class 1	F	L	100,800
1	1.5	Shelf A	15	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	15	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	15	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	15	4	Normal: class 1	F	M	100,800
1	1.5	Shelf A	15	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	15	6	Normal: class 1	F	L	100,800
1	1.5	Shelf A	16	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	16	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	16	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	16	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	16	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	16	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	17	1	Normal: class 1	N	H	100,800
1	1.5	Shelf A	17	2	Normal: class 1	N	H	100,800
1	1.5	Shelf A	17	3	Normal: class 1	N	M	100,800
1	1.5	Shelf A	17	4	Normal: class 1	N	M	100,800
1	1.5	Shelf A	17	5	Normal: class 1	N	L	100,800
1	1.5	Shelf A	17	6	Normal: class 1	N	L	100,800
1	1.5	Shelf A	18	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	18	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	18	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	18	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	18	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	18	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	19	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	19	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	19	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	19	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	19	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	19	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	20	1	Normal: class 1	M	H	100,800
1	1.5	Shelf A	20	2	Normal: class 1	M	H	100,800
1	1.5	Shelf A	20	3	Normal: class 1	M	M	100,800
1	1.5	Shelf A	20	4	Normal: class 1	M	M	100,800
1	1.5	Shelf A	20	5	Normal: class 1	M	L	100,800
1	1.5	Shelf A	20	6	Normal: class 1	M	L	100,800
1	1.5	Shelf A	21	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	21	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	21	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	21	4	Normal: class 1	F	M	100,800
1	1.5	Shelf A	21	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	21	6	Normal: class 1	F	L	100,800
1	1.5	Shelf A	22	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	22	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	22	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	22	4	Normal: class 1	F	M	100,800
1	1.5	Shelf A	22	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	22	6	Normal: class 1	F	L	100,800
1	1.5	Shelf A	23	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	23	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	23	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	23	4	Normal: class 1	F	M	100,800
1	1.5	Shelf A	23	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	23	6	Normal: class 1	F	L	100,800
1	1.5	Shelf A	24	1	Normal: class 1	F	H	100,800
1	1.5	Shelf A	24	2	Normal: class 1	F	H	100,800
1	1.5	Shelf A	24	3	Normal: class 1	F	M	100,800
1	1.5	Shelf A	24	4	Normal: class 1	F	M	100,800
1	1.5	Shelf A	24	5	Normal: class 1	F	L	100,800
1	1.5	Shelf A	24	6	Normal: class 1	F	L	100,800

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm <sup>3</sup> )
1	1.5	Shelf A	25	1	Normal: class 1	F	H	100.800
1	1.5	Shelf A	25	2	Normal: class 1	F	H	100.800
1	1.5	Shelf A	25	3	Normal: class 1	F	M	100.800
1	1.5	Shelf A	25	4	Normal: class 1	F	M	100.800
1	1.5	Shelf A	25	5	Normal: class 1	F	L	100.800
1	1.5	Shelf A	25	6	Normal: class 1	F	L	100.800
1	1.5	Shelf A	26	1	Normal: class 1	F	H	100.800
1	1.5	Shelf A	26	2	Normal: class 1	F	H	100.800
1	1.5	Shelf A	26	3	Normal: class 1	F	M	100.800
1	1.5	Shelf A	26	4	Normal: class 1	F	M	100.800
1	1.5	Shelf A	26	5	Normal: class 1	F	L	100.800
1	1.5	Shelf A	26	6	Normal: class 1	F	L	100.800
1	1.5	Shelf A	27	1	Normal: class 1	M	H	100.800
1	1.5	Shelf A	27	2	Normal: class 1	M	H	100.800
1	1.5	Shelf A	27	3	Normal: class 1	M	M	100.800
1	1.5	Shelf A	27	4	Normal: class 1	M	M	100.800
1	1.5	Shelf A	27	5	Normal: class 1	M	L	100.800
1	1.5	Shelf A	27	6	Normal: class 1	M	L	100.800
1	1.5	Shelf A	28	1	Normal: class 1	N	H	100.800
1	1.5	Shelf A	28	2	Normal: class 1	N	H	100.800
1	1.5	Shelf A	28	3	Normal: class 1	N	M	100.800
1	1.5	Shelf A	28	4	Normal: class 1	N	M	100.800
1	1.5	Shelf A	28	5	Normal: class 1	N	L	100.800
1	1.5	Shelf A	28	6	Normal: class 1	N	L	100.800
1	1.5	Shelf A	29	1	Normal: class 1	N	H	100.800
1	1.5	Shelf A	29	2	Normal: class 1	N	H	100.800
1	1.5	Shelf A	29	3	Normal: class 1	N	M	100.800
1	1.5	Shelf A	29	4	Normal: class 1	N	M	100.800
1	1.5	Shelf A	29	5	Normal: class 1	N	L	100.800
1	1.5	Shelf A	29	6	Normal: class 1	N	L	100.800
1	5	Shelf A	30	1	Normal: class 1	N	H	100.800
1	5	Shelf A	30	2	Normal: class 1	N	H	100.800
1	5	Shelf A	30	3	Normal: class 1	N	M	100.800
1	5	Shelf A	30	4	Normal: class 1	N	M	100.800
1	5	Shelf A	30	5	Normal: class 1	N	L	100.800
1	5	Shelf A	30	6	Normal: class 1	N	L	100.800
1	5	Shelf A	31	1	Normal: class 1	N	H	100.800
1	5	Shelf A	31	2	Normal: class 1	N	H	100.800
1	5	Shelf A	31	3	Normal: class 1	N	M	100.800
1	5	Shelf A	31	4	Normal: class 1	N	M	100.800
1	5	Shelf A	31	5	Normal: class 1	N	L	100.800
1	5	Shelf A	31	6	Normal: class 1	N	L	100.800
1	5	Shelf A	32	1	Normal: class 1	N	H	100.800
1	5	Shelf A	32	2	Normal: class 1	N	H	100.800
1	5	Shelf A	32	3	Normal: class 1	N	M	100.800
1	5	Shelf A	32	4	Normal: class 1	N	M	100.800
1	5	Shelf A	32	5	Normal: class 1	N	L	100.800
1	5	Shelf A	32	6	Normal: class 1	N	L	100.800
1	5	Shelf A	33	1	Normal: class 1	M	H	100.800
1	5	Shelf A	33	2	Normal: class 1	M	H	100.800
1	5	Shelf A	33	3	Normal: class 1	M	M	100.800
1	5	Shelf A	33	4	Normal: class 1	M	M	100.800
1	5	Shelf A	33	5	Normal: class 1	M	L	100.800
1	5	Shelf A	33	6	Normal: class 1	M	L	100.800
1	5	Shelf A	34	1	Normal: class 1	M	H	100.800
1	5	Shelf A	34	2	Normal: class 1	M	H	100.800
1	5	Shelf A	34	3	Normal: class 1	M	M	100.800
1	5	Shelf A	34	4	Normal: class 1	M	M	100.800
1	5	Shelf A	34	5	Normal: class 1	M	L	100.800
1	5	Shelf A	34	6	Normal: class 1	M	L	100.800
1	5	Shelf A	35	1	Normal: class 1	M	H	100.800
1	5	Shelf A	35	2	Normal: class 1	M	H	100.800

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm <sup>3</sup> )
1	5	Shelf A	35	3	Normal: class 1	M	M	100,800
1	5	Shelf A	35	4	Normal: class 1	M	M	100,800
1	5	Shelf A	35	5	Normal: class 1	M	L	100,800
1	5	Shelf A	35	6	Normal: class 1	M	L	100,800
1	5	Shelf A	36	1	Normal: class 1	M	H	100,800
1	5	Shelf A	36	2	Normal: class 1	M	H	100,800
1	5	Shelf A	36	3	Normal: class 1	M	M	100,800
1	5	Shelf A	36	4	Normal: class 1	M	M	100,800
1	5	Shelf A	36	5	Normal: class 1	M	L	100,800
1	5	Shelf A	36	6	Normal: class 1	M	L	100,800
1	5	Shelf A	37	1	Normal: class 1	N	H	100,800
1	5	Shelf A	37	2	Normal: class 1	N	H	100,800
1	5	Shelf A	37	3	Normal: class 1	N	M	100,800
1	5	Shelf A	37	4	Normal: class 1	N	M	100,800
1	5	Shelf A	37	5	Normal: class 1	N	L	100,800
1	5	Shelf A	37	6	Normal: class 1	N	L	100,800
1	5	Shelf A	38	1	Normal: class 1	N	H	100,800
1	5	Shelf A	38	2	Normal: class 1	N	H	100,800
1	5	Shelf A	38	3	Normal: class 1	N	M	100,800
1	5	Shelf A	38	4	Normal: class 1	N	M	100,800
1	5	Shelf A	38	5	Normal: class 1	N	L	100,800
1	5	Shelf A	38	6	Normal: class 1	N	L	100,800
1	5	Shelf A	39	1	Normal: class 1	N	H	100,800
1	5	Shelf A	39	2	Normal: class 1	N	H	100,800
1	5	Shelf A	39	3	Normal: class 1	N	M	100,800
1	5	Shelf A	39	4	Normal: class 1	N	M	100,800
1	5	Shelf A	39	5	Normal: class 1	N	L	100,800
1	5	Shelf A	39	6	Normal: class 1	N	L	100,800
1	5	Shelf A	40	1	Normal: class 1	M	H	100,800
1	5	Shelf A	40	2	Normal: class 1	M	H	100,800
1	5	Shelf A	40	3	Normal: class 1	M	M	100,800
1	5	Shelf A	40	4	Normal: class 1	M	M	100,800
1	5	Shelf A	40	5	Normal: class 1	M	L	100,800
1	5	Shelf A	40	6	Normal: class 1	M	L	100,800
1	5	Shelf A	41	1	Normal: class 1	M	H	100,800
1	5	Shelf A	41	2	Normal: class 1	M	H	100,800
1	5	Shelf A	41	3	Normal: class 1	M	M	100,800
1	5	Shelf A	41	4	Normal: class 1	M	M	100,800
1	5	Shelf A	41	5	Normal: class 1	M	L	100,800
1	5	Shelf A	41	6	Normal: class 1	M	L	100,800
1	5	Shelf A	42	1	Normal: class 1	M	H	100,800
1	5	Shelf A	42	2	Normal: class 1	M	H	100,800
1	5	Shelf A	42	3	Normal: class 1	M	M	100,800
1	5	Shelf A	42	4	Normal: class 1	M	M	100,800
1	5	Shelf A	42	5	Normal: class 1	M	L	100,800
1	5	Shelf A	42	6	Normal: class 1	M	L	100,800
1	5	Shelf A	43	1	Normal: class 1	M	H	100,800
1	5	Shelf A	43	2	Normal: class 1	M	H	100,800
1	5	Shelf A	43	3	Normal: class 1	M	M	100,800
1	5	Shelf A	43	4	Normal: class 1	M	M	100,800
1	5	Shelf A	43	5	Normal: class 1	M	L	100,800
1	5	Shelf A	43	6	Normal: class 1	M	L	100,800
1	5	Shelf A	44	1	Normal: class 1	M	H	100,800
1	5	Shelf A	44	2	Normal: class 1	M	H	100,800
1	5	Shelf A	44	3	Normal: class 1	M	M	100,800
1	5	Shelf A	44	4	Normal: class 1	M	M	100,800
1	5	Shelf A	44	5	Normal: class 1	M	L	100,800
1	5	Shelf A	44	6	Normal: class 1	M	L	100,800
1	5	Shelf A	45	1	Normal: class 1	M	H	100,800
1	5	Shelf A	45	2	Normal: class 1	M	H	100,800
1	5	Shelf A	45	3	Normal: class 1	M	M	100,800
1	5	Shelf A	45	4	Normal: class 1	M	M	100,800

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm <sup>3</sup> )
1	5	Shelf A	45	5	Normal: class 1	M	L	100,800
1	5	Shelf A	45	6	Normal: class 1	M	L	100,800
1	5	Shelf A	46	1	Normal: class 1	M	H	100,800
1	5	Shelf A	46	2	Normal: class 1	M	H	100,800
1	5	Shelf A	46	3	Normal: class 1	M	M	100,800
1	5	Shelf A	46	4	Normal: class 1	M	M	100,800
1	5	Shelf A	46	5	Normal: class 1	M	L	100,800
1	5	Shelf A	46	6	Normal: class 1	M	L	100,800
1	5	Shelf A	47	1	Normal: class 1	M	H	100,800
1	5	Shelf A	47	2	Normal: class 1	M	H	100,800
1	5	Shelf A	47	3	Normal: class 1	M	M	100,800
1	5	Shelf A	47	4	Normal: class 1	M	M	100,800
1	5	Shelf A	47	5	Normal: class 1	M	L	100,800
1	5	Shelf A	47	6	Normal: class 1	M	L	100,800
1	5	Shelf A	48	1	Normal: class 1	N	H	100,800
1	5	Shelf A	48	2	Normal: class 1	N	H	100,800
1	5	Shelf A	48	3	Normal: class 1	N	M	100,800
1	5	Shelf A	48	4	Normal: class 1	N	M	100,800
1	5	Shelf A	48	5	Normal: class 1	N	L	100,800
1	5	Shelf A	48	6	Normal: class 1	N	L	100,800
1	5	Shelf A	49	1	Normal: class 1	N	H	100,800
1	5	Shelf A	49	2	Normal: class 1	N	H	100,800
1	5	Shelf A	49	3	Normal: class 1	N	M	100,800
1	5	Shelf A	49	4	Normal: class 1	N	M	100,800
1	5	Shelf A	49	5	Normal: class 1	N	L	100,800
1	5	Shelf A	49	6	Normal: class 1	N	L	100,800
1	5	Shelf A	50	1	Normal: class 1	M	H	100,800
1	5	Shelf A	50	2	Normal: class 1	M	H	100,800
1	5	Shelf A	50	3	Normal: class 1	M	M	100,800
1	5	Shelf A	50	4	Normal: class 1	M	M	100,800
1	5	Shelf A	50	5	Normal: class 1	M	L	100,800
1	5	Shelf A	50	6	Normal: class 1	M	L	100,800
1	5	Shelf A	51	1	Normal: class 1	M	H	100,800
1	5	Shelf A	51	2	Normal: class 1	M	H	100,800
1	5	Shelf A	51	3	Normal: class 1	M	M	100,800
1	5	Shelf A	51	4	Normal: class 1	M	M	100,800
1	5	Shelf A	51	5	Normal: class 1	M	L	100,800
1	5	Shelf A	51	6	Normal: class 1	M	L	100,800
1	5	Shelf A	52	1	Normal: class 1	F	H	100,800
1	5	Shelf A	52	2	Normal: class 1	F	H	100,800
1	5	Shelf A	52	3	Normal: class 1	F	M	100,800
1	5	Shelf A	52	4	Normal: class 1	F	M	100,800
1	5	Shelf A	52	5	Normal: class 1	F	L	100,800
1	5	Shelf A	52	6	Normal: class 1	F	L	100,800
1	5	Shelf A	53	1	Normal: class 1	F	H	100,800
1	5	Shelf A	53	2	Normal: class 1	F	H	100,800
1	5	Shelf A	53	3	Normal: class 1	F	M	100,800
1	5	Shelf A	53	4	Normal: class 1	F	M	100,800
1	5	Shelf A	53	5	Normal: class 1	F	L	100,800
1	5	Shelf A	53	6	Normal: class 1	F	L	100,800
1	5	Shelf A	54	1	Normal: class 1	F	H	100,800
1	5	Shelf A	54	2	Normal: class 1	F	H	100,800
1	5	Shelf A	54	3	Normal: class 1	F	M	100,800
1	5	Shelf A	54	4	Normal: class 1	F	M	100,800
1	5	Shelf A	54	5	Normal: class 1	F	L	100,800
1	5	Shelf A	54	6	Normal: class 1	F	L	100,800
1	5	Shelf A	55	1	Normal: class 1	F	H	100,800
1	5	Shelf A	55	2	Normal: class 1	F	H	100,800
1	5	Shelf A	55	3	Normal: class 1	F	M	100,800
1	5	Shelf A	55	4	Normal: class 1	F	M	100,800
1	5	Shelf A	55	5	Normal: class 1	F	L	100,800
1	5	Shelf A	55	6	Normal: class 1	F	L	100,800

Table D.2: Specification of storage location for normal item (Cont.)

Storage location					Factor 1	Factor 2	Factor 3	Constraint
(1)Building	(2)Floor	(3)Model Type	(4)Number	(5)Layer	(6)Storage group	(7)Location of storage equipment	(8)Suit Item's weight	(9)Cubic space (cm <sup>3</sup> )
1	5	Shelf A	56	1	Normal: class 1	N	H	100,800
1	5	Shelf A	56	2	Normal: class 1	N	H	100,800
1	5	Shelf A	56	3	Normal: class 1	N	M	100,800
1	5	Shelf A	56	4	Normal: class 1	N	M	100,800
1	5	Shelf A	56	5	Normal: class 1	N	L	100,800
1	5	Shelf A	56	6	Normal: class 1	N	L	100,800
1	5	Shelf A	57	1	Normal: class 1	N	H	100,800
1	5	Shelf A	57	2	Normal: class 1	N	H	100,800
1	5	Shelf A	57	3	Normal: class 1	N	M	100,800
1	5	Shelf A	57	4	Normal: class 1	N	M	100,800
1	5	Shelf A	57	5	Normal: class 1	N	L	100,800
1	5	Shelf A	57	6	Normal: class 1	N	L	100,800
1	5	Shelf A	58	1	Normal: class 1	N	H	100,800
1	5	Shelf A	58	2	Normal: class 1	N	H	100,800
1	5	Shelf A	58	3	Normal: class 1	N	M	100,800
1	5	Shelf A	58	4	Normal: class 1	N	M	100,800
1	5	Shelf A	58	5	Normal: class 1	N	L	100,800
1	5	Shelf A	58	6	Normal: class 1	N	L	100,800
1	5	Shelf A	59	1	Normal: class 1	M	H	100,800
1	5	Shelf A	59	2	Normal: class 1	M	H	100,800
1	5	Shelf A	59	3	Normal: class 1	M	M	100,800
1	5	Shelf A	59	4	Normal: class 1	M	M	100,800
1	5	Shelf A	59	5	Normal: class 1	M	L	100,800
1	5	Shelf A	59	6	Normal: class 1	M	L	100,800
1	5	Shelf A	60	1	Normal: class 1	F	H	100,800
1	5	Shelf A	60	2	Normal: class 1	F	H	100,800
1	5	Shelf A	60	3	Normal: class 1	F	M	100,800
1	5	Shelf A	60	4	Normal: class 1	F	M	100,800
1	5	Shelf A	60	5	Normal: class 1	F	L	100,800
1	5	Shelf A	60	6	Normal: class 1	F	L	100,800
1	5	Shelf A	61	1	Normal: class 1	F	H	100,800
1	5	Shelf A	61	2	Normal: class 1	F	H	100,800
1	5	Shelf A	61	3	Normal: class 1	F	M	100,800
1	5	Shelf A	61	4	Normal: class 1	F	M	100,800
1	5	Shelf A	61	5	Normal: class 1	F	L	100,800
1	5	Shelf A	61	6	Normal: class 1	F	L	100,800
1	5	Shelf A	62	1	Normal: class 1	F	H	100,800
1	5	Shelf A	62	2	Normal: class 1	F	H	100,800
1	5	Shelf A	62	3	Normal: class 1	F	M	100,800
1	5	Shelf A	62	4	Normal: class 1	F	M	100,800
1	5	Shelf A	62	5	Normal: class 1	F	L	100,800
1	5	Shelf A	62	6	Normal: class 1	F	L	100,800

## Column 8

L Suit for low weight item( 0-5 kg)  
M Suit for medium weight item( 5-10 kg)  
H Suit for high weight item( above 10 kg)

## Column 7

F Far from point of use at its floor( above 5 meter)  
M Middle far from point of use at its floor( 3-5 meter)  
N Near from point of use at its floor( 0-3 meter)

**APPENDIX E**  
**ITEM ALLOCATION FACTOR**

Table E.1: Factor to Determine storage location for normal item

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Mosquitoes wiping joss stick: Dragon	Normal: class 2	Chemical product	24	12.0	429,792
Mosquitoes wiping reagent: Ko-Yo-15	Normal: class 2	Chemical product	20	2.7	93,744
Refilled Gas: Buca, Small	Normal: class 2	Chemical product	5	0.9	178,200
A gas oven: lighter grade A	Normal: class 2	Chemical product	8	6.5	174,906
A gas oven: lighter grade C	Normal: class 2	Chemical product	40	9.0	367,965
Indigo: Big bottle, Crown	Normal: class 2	Chemical product	2	9.0	49,932
Indigo: Small bottle, Chicken	Normal: class 2	Chemical product	2	19.0	51,975
Indigo: Big bottle, Chicken	Normal: class 2	Chemical product	4	1.6	103,950
Indigo: Liquid, Chicken	Normal: class 2	Chemical product	2	18.0	67,914
Indigo: Medium bottle, Chicken	Normal: class 2	Chemical product	2	22.0	58,800
Indigo: big square shape, Crown	Normal: class 2	Chemical product	4	12.0	59,892
Fabric Softener: Pink	Normal: class 2	Chemical product	21	15.0	159,120
Fabric Softener: Sky-blue	Normal: class 2	Chemical product	21	15.0	159,120
Fabric cleaning soap: 3 stars	Normal: class 2	Chemical product	3	16.0	44,919
Fabric cleaning soap: Carus crane	Normal: class 2	Chemical product	3	15.0	40,362
Shoe polish: big, black	Normal: class 2	Chemical product	10	9.5	134,505
Leather polish: Kiwi, Black	Normal: class 2	Chemical product	8	5.5	343,200
Leather polish: Kiwi, Classic Black	Normal: class 2	Chemical product	5	5.5	205,920
Leather polish: Kiwi, Brown	Normal: class 2	Chemical product	7	5.5	274,560
Leather polish: Kiwi, Classic Brown	Normal: class 2	Chemical product	5	5.5	205,920
Wax for Leather Shoe: Small	Normal: class 2	Chemical product	60	4.1	411,840
Dish liquid cleanser: Sunny Wash 800cc	Normal: class 2	Chemical product	12	20.0	217,800
<b>Total storage area of Chemical category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>12</b>	<b>Total</b>	<b>3,834,336</b>
Flipper used for frying: with holes	Normal: class 2	Cooking	2	25.0	48,246
Flipper used for frying:	Normal: class 2	Cooking	2	25.0	48,246
Ladle: Colorful handle	Normal: class 2	Cooking	7	18.0	212,940
Ladle: Chinese pattern	Normal: class 2	Cooking	5	25.0	115,920
Knife: Kiwi 246	Normal: class 2	Cooking	10	0.9	52,658
Knife: Vegetable, Wildman 1 blade	Normal: class 2	Cooking	7	7.2	89,112
Knife: Vegetable, Wildman 2 blades	Normal: class 2	Cooking	7	7.0	89,112
Knife: Vegetable, Wildman ,small	Normal: class 2	Cooking	10	3.9	52,920
Aluminium foil: long	Normal: class 2	Cooking	10	9.0	215,424
Aluminium foil: short	Normal: class 2	Cooking	10	4.3	128,898
<b>Total storage area of Cooking category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>7</b>	<b>Total</b>	<b>1,053,476</b>
Flashlight, Chinese, Colorful plastic	Normal: class 2	Electrical	8	10.0	180,000
Flashlight, Tiger 300	Normal: class 2	Electrical	10	25.0	743,814
Flashlight, Tiger 500	Normal: class 2	Electrical	3	21.0	288,469
Flashlight, Tiger 700	Normal: class 2	Electrical	2	16.5	119,070
Power plug receptable: 10M, AMC	Normal: class 2	Electrical	10	10.0	96,444
Power plug receptable: 10M, Motto	Normal: class 2	Electrical	20	10.0	192,888



Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Padlock: gold, short 32mm	Normal: class 2	Household	3	21.0	63,878
Padlock: gold, long 38mm 5 rings	Normal: class 2	Household	3	20.0	56,832
Hot water pouch: stripe pattern, small	Normal: class 2	Household	10	14.0	174,408
Hot water pouch: small	Normal: class 2	Household	20	15.0	285,000
Hot water pouch: Big, Kangaroo	Normal: class 2	Household	3	14.4	56,160
Thread: 10 baht set, White-Black	Normal: class 2	Household	8	3.0	66,528
Thread: Pink set	Normal: class 2	Household	3	25.0	170,601
Thread: A Mix	Normal: class 2	Household	13	5.0	23,520
Thread: A White	Normal: class 2	Household	13	5.0	23,520
Thread: A White-Black	Normal: class 2	Household	13	5.0	23,520
Thread: A Dark gray	Normal: class 2	Household	13	5.0	23,520
Thread: A Black	Normal: class 2	Household	13	5.0	23,520
Thread: 1 baht, YNC White	Normal: class 2	Household	4	5.6	31,395
Thread: 1 baht, YNC Dark gray	Normal: class 2	Household	4	5.6	31,395
Thread: 1 baht, YNC Mix	Normal: class 2	Household	4	5.6	31,395
Thread: 1 baht, YNC Black	Normal: class 2	Household	4	5.6	31,395
Thread: 1 baht, YNC Yellow	Normal: class 2	Household	4	5.6	31,395
Brooch in Pack	Normal: class 2	Household	3	20.0	75,103
Brooch: grade A	Normal: class 2	Household	6	2.6	66,960
Brooch: Lucky	Normal: class 2	Household	6	3.8	37,706
Scrubber with sponge: Merrybrit, Twin	Normal: class 2	Household	24	3.5	1,273,950
Cleaning sponge: 3M, 2 purpose	Normal: class 2	Household	33	4.7	2,412,696
Cement cleaning Sponge: Tree	Normal: class 2	Household	20	1.1	417,600
Feet cleaning sponge: Jolly	Normal: class 2	Household	15	1.0	386,100
Cleaning sponge with net: Modern	Normal: class 2	Household	5	5.8	735,840
Cleaning sponge with net: House wife	Normal: class 2	Household	15	4.5	1,260,000
Cleaning sponge with net: Merrysponge	Normal: class 2	Household	15	3.9	449,280
Cleaning sponge: Tree, L	Normal: class 2	Household	20	2.5	1,123,596
Cleaning sponge: Tree, S	Normal: class 2	Household	6	2.6	484,704
Cleaning frill: Kilo	Normal: class 2	Household	5	10.0	269,100
Cleaning frill: Dozen pack	Normal: class 2	Household	12	2.5	112,640
Cleaning stainless frill: Big brite	Normal: class 2	Household	30	7.0	475,200
Cleaning stainless frill: Poly	Normal: class 2	Household	30	5.0	571,642
Mothball: ATM, big	Normal: class 2	Household	20	14.0	132,600
Mothball: Kilo	Normal: class 2	Household	20	25.0	211,680
Mothball: Jumbo size	Normal: class 2	Household	8	25.0	132,192
Mothball: Big pack 1x2	Normal: class 2	Household	5	9.0	90,000
Rubber gloves: Dragon, L	Normal: class 2	Household	10	20.0	353,202
Rubber gloves: Dragon, M	Normal: class 2	Household	6	20.0	353,202
Rubber gloves: Dragon, S	Normal: class 2	Household	10	20.0	353,202

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Mirror with Plastic frame	Normal: class 2	Household	30	5.3	168,720
Mirror: Flower 12x16 ,hang	Normal: class 2	Household	5	9.5	64,512
Mirror: Flower 14x20 ,hang	Normal: class 2	Household	2	15.0	58,830
Can opener: 5 rings	Normal: class 2	Household	10	3.6	44,880
Nail cutter: 309	Normal: class 2	Household	5	23.0	86,400
Nail cutter: 600	Normal: class 2	Household	5	28.0	84,240
Shoe rope: 24 inches, White, Big	Normal: class 2	Household	2	5.0	22,080
Shoe rope: 24 inches, Black, Big	Normal: class 2	Household	2	5.0	22,080
Shoe rope: 24 inches, Brown, Big	Normal: class 2	Household	1	5.0	22,080
Shoe rope: 24 inches, Dark brown, Big	Normal: class 2	Household	1	5.0	22,080
Shoe rope: 36 inches, White, Big	Normal: class 2	Household	2	8.0	31,360
Shoe rope: 36 inches, Black, Big	Normal: class 2	Household	2	8.0	31,360
Shoe rope: 36 inches, Brown, Big	Normal: class 2	Household	1	8.0	31,360
Shoe rope: 36 inches, Dark brown, Big	Normal: class 2	Household	1	8.0	31,360
Shoe rope: 42 inches, White, Big	Normal: class 2	Household	2	6.9	38,686
Shoe rope: 42 inches, Black, Big	Normal: class 2	Household	2	6.9	38,686
Shoe rope: 42 inches, Brown, Big	Normal: class 2	Household	1	6.9	38,686
Shoe rope: 42 inches, Dark brown, Big	Normal: class 2	Household	1	6.9	38,686
Shoe rope: 60 inches, White, Big	Normal: class 2	Household	1	11.0	59,400
Shoe rope: 60 inches, Black, Big	Normal: class 2	Household	1	11.0	59,400
Shoe rope: 60 inches, Brown, Big	Normal: class 2	Household	1	11.0	59,400
Shoe rope: 36 inches, White, Flat	Normal: class 2	Household	2	4.0	36,000
Shoe rope: 36 inches, Black, Flat	Normal: class 2	Household	2	4.0	36,000
Shoe rope: 36 inches, Brown, Flat	Normal: class 2	Household	1	4.0	36,000
Shoe rope: 36 inches, Dark brown, Flat	Normal: class 2	Household	1	4.0	36,000
Shoe rope: 42 inches, White, Flat	Normal: class 2	Household	6	6.0	38,686
Shoe rope: 42 inches, Mix, Flat	Normal: class 2	Household	3	6.0	77,372
Shoe rope: 42 inches, Black, Flat	Normal: class 2	Household	6	6.0	38,686
Shoe rope: 42 inches, Brown, Flat	Normal: class 2	Household	2	6.0	38,686
Shoe rope: 42 inches, Dark brown, Flat	Normal: class 2	Household	2	6.0	38,686
Shoe rope: 48 inches, White, Flat	Normal: class 2	Household	1	8.3	50,400
Shoe rope: 48 inches, Black, Flat	Normal: class 2	Household	1	8.3	50,400
Shoe rope: 48 inches, Brown, Flat	Normal: class 2	Household	1	8.3	50,400
Shoe rope: 60 inches, White, Flat	Normal: class 2	Household	1	9.0	56,700
Shoe rope: 60 inches, Black, Flat	Normal: class 2	Household	1	9.0	56,700
Shoe rope: 60 inches, Brown, Flat	Normal: class 2	Household	1	9.0	56,700
Padlock: black, long 38mm	Normal: class 2	Household	2	20.0	28,416
Padlock: black, short 50mm 5 rings	Normal: class 2	Household	3	20.0	38,440
Padlock: gold, long 32mm	Normal: class 2	Household	3	21.0	63,878
Padlock: gold, short 25mm	Normal: class 2	Household	10	21.0	154,752

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Rubber gloves: OK, 7.5, cream color	Normal: class 2	Household	4	24.0	67,620
Rubber gloves: OK, 7.5, orange color	Normal: class 2	Household	4	24.0	67,620
Rubber gloves: OK, 8.5, cream color	Normal: class 2	Household	4	24.0	67,620
Rubber gloves: OK, 8.5, orange color	Normal: class 2	Household	4	24.0	67,620
Rubber gloves: PVC, White, M	Normal: class 2	Household	5	16.0	250,560
Wall hooker 1x3	Normal: class 2	Household	8	7.5	143,115
Wall hooker 1x8	Normal: class 2	Household	6	9.0	112,752
Wall hooker: Fancy	Normal: class 2	Household	3	12.0	201,684
Wall hooker: 3 in a row	Normal: class 2	Household	9	3.7	17,280
Wall hooker: 4 in a row	Normal: class 2	Household	9	5.4	23,265
Wall hooker: 5 in a row	Normal: class 2	Household	9	6.0	17,280
Nipple: Pegen, L	Normal: class 2	Household	2	12.0	74,250
Nipple: Pegen, M	Normal: class 2	Household	2	12.0	74,250
Nipple: Pegen, S	Normal: class 2	Household	2	12.0	74,250
Toothpick 1x10	Normal: class 2	Household	15	21.0	242,550
Toothpick 2in1	Normal: class 2	Household	10	12.0	257,400
Toothpick: Bandang, Medium	Normal: class 2	Household	13	16.0	525,113
Toothpick : Kilo	Normal: class 2	Household	3	20.0	91,504
Shoe supporter: Man, 10 kgs	Normal: class 2	Household	2	6.2	37,800
Shoe supporter: Lady, 10 kgs	Normal: class 2	Household	2	6.2	37,800
<b>Total storage area of Household category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>7</b>	<b>Total</b>	<b>23,601,996</b>
Screw driver 2 pieces in set	Normal: class 2	Mechanical	1	24.0	31,360
Screw driver for watch	Normal: class 2	Mechanical	5	16.0	147,870
Screw driver with switching head	Normal: class 2	Mechanical	3	27.0	5,776
Adhesive tape for wiring( Black) TOV	Normal: class 2	Mechanical	10	9.5	116,375
shrink adhesive tape 1 inche	Normal: class 2	Mechanical	8	5.0	99,820
shrink adhesive tape 3/4 inche	Normal: class 2	Mechanical	8	4.6	99,820
shrink adhesive tape 1 inche big size	Normal: class 2	Mechanical	8	4.0	60,480
shrink adhesive tape 1.5 inche big size	Normal: class 2	Mechanical	8	4.0	60,480
shrink adhesive tape 2 inche big size	Normal: class 2	Mechanical	8	4.0	60,480
shrink adhesive tape 3/4 inche big size	Normal: class 2	Mechanical	8	4.0	60,480
Lubricant oil for machinery: round bottle	Normal: class 2	Mechanical	20	12.0	243,600
Lubricant oil for machinery: flat bottle	Normal: class 2	Mechanical	10	10.0	71,874
Painting brush: No.1	Normal: class 2	Mechanical	4	2.0	17,280
Painting brush: No.1.5	Normal: class 2	Mechanical	4	2.1	17,280
Painting brush: No.2.5	Normal: class 2	Mechanical	2	2.0	5,760
Painting brush: No.3	Normal: class 2	Mechanical	2	2.2	5,760
Painting brush: No.4	Normal: class 2	Mechanical	2	2.1	5,760
Pumping tube : plastic	Normal: class 2	Mechanical	7	11.0	810,810
<b>Total storage area of Mechanical category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>6</b>	<b>Total</b>	<b>1,921,065</b>

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Dog chain: 20x6	Normal: class 2	Miscellaneous	2	20.0	57,760
Dog chain: 22x6	Normal: class 2	Miscellaneous	2	20.0	60,800
Dog chain: 25x6	Normal: class 2	Miscellaneous	2	19.0	76,800
Dog chain: 30x6	Normal: class 2	Miscellaneous	2	18.0	42,588
Dog chain: 35x6	Normal: class 2	Miscellaneous	2	18.0	64,000
Dog chain: 45x6	Normal: class 2	Miscellaneous	2	19.0	49,920
Badminton: ball	Normal: class 2	Miscellaneous	4	6.5	189,420
paper card: gold seam 007	Normal: class 2	Miscellaneous	12	25.0	191,808
paper card: Thai	Normal: class 2	Miscellaneous	20	12.0	321,860
plastic card: Winner 222	Normal: class 2	Miscellaneous	3	25.0	96,672
Elastic fabric 10	Normal: class 2	Miscellaneous	2	10.0	22,040
Elastic fabric 11	Normal: class 2	Miscellaneous	2	12.0	25,840
Elastic fabric 14	Normal: class 2	Miscellaneous	2	14.0	28,880
Elastic fabric 16	Normal: class 2	Miscellaneous	2	16.0	30,400
Elastic fabric 4	Normal: class 2	Miscellaneous	2	4.9	11,552
Elastic fabric 6	Normal: class 2	Miscellaneous	2	6.8	13,338
Elastic fabric 8	Normal: class 2	Miscellaneous	2	8.0	15,884
Elastic fabric 1 inch wide	Normal: class 2	Miscellaneous	10	10.0	15,246
Elastic fabric 3/4 inch wide	Normal: class 2	Miscellaneous	10	8.5	15,246
Mosquitoes wiping stick container	Normal: class 2	Miscellaneous	20	12.0	741,813
Mosquitoes wiping stick container: long	Normal: class 2	Miscellaneous	3	6.5	77,314
Buddism Ordaining set: Red	Normal: class 2	Miscellaneous	20	2.8	223,440
Buddism Ordaining set: Yellow	Normal: class 2	Miscellaneous	20	2.8	223,440
Artificial clay: small size	Normal: class 2	Miscellaneous	15	8.0	108,108
Pot mender	Normal: class 2	Miscellaneous	6	2.9	12,636
Magnifying glass	Normal: class 2	Miscellaneous	2	20.0	73,858
Tape Cleanser set	Normal: class 2	Miscellaneous	3	4.0	51,840
CD Cleanser set	Normal: class 2	Miscellaneous	9	9.0	71,188
Steel pot stand	Normal: class 2	Miscellaneous	5	10.0	130,350
<b>Total storage area of Miscellaneous category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>7</b>	<b>Total</b>	<b>3,044,040</b>
Price tag Shooter	Normal: class 2	Office	4	11.0	122,016
Clipboard A5	Normal: class 2	Office	4	15.6	46,080
Stapler	Normal: class 2	Office	8	8.0	129,870
Scissors: Rose, 304	Normal: class 2	Office	8	15.0	171,360
Scissors: Bee, 304	Normal: class 2	Office	1	15.0	57,120
Scissors: Rubber handle size 3	Normal: class 2	Office	1	18.0	45,864
Scissors: 8 inches, 999	Normal: class 2	Office	2	18.0	384,000
Scissors: paper set	Normal: class 2	Office	12	17.0	177,053
Scissors: Jusmine	Normal: class 2	Office	8	10.0	106,560
Super Glue: Kenji	Normal: class 2	Office	10	6.0	162,360

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Super Glue: Chinesee	Normal: class 2	Office	8	9.5	288,927
Super Glue: Ateco	Normal: class 2	Office	30	6.5	491,400
Hot Stick Glue: Small	Normal: class 2	Office	5	25.0	71,680
Hot Stick Glue: Big	Normal: class 2	Office	5	25.0	71,680
Latex glue10 Baht	Normal: class 2	Office	6	16.8	114,774
Latex glue 5 Baht	Normal: class 2	Office	6	14.4	48,510
CutterP1 with Blade	Normal: class 2	Office	5	6.1	129,360
Stainless Cutter L-120	Normal: class 2	Office	10	6.6	102,060
Cutter: 3 pieces	Normal: class 2	Office	17	8.0	131,868
Envelope: White long	Normal: class 2	Office	2	22.0	49,728
Envelope: Standard size, Cartoon	Normal: class 2	Office	2	17.0	56,700
Envelope: Standard size, Color	Normal: class 2	Office	5	17.0	113,400
Envelope: Cartoon pattern	Normal: class 2	Office	3	16.0	49,000
Envelope: White stripe	Normal: class 2	Office	15	16.0	147,000
Envelope: airplane pattern	Normal: class 2	Office	3	16.0	49,000
Envelope: Pink stripe	Normal: class 2	Office	6	16.0	98,000
Envelope: National flag pattern	Normal: class 2	Office	3	16.0	49,000
Clipper: Black 108	Normal: class 2	Office	6	25.7	139,128
Clipper: Black 109	Normal: class 2	Office	6	17.5	98,304
Tape: 2 side glue, Loise size 1x1	Normal: class 2	Office	20	4.2	306,900
Tape: Osaka 1meter	Normal: class 2	Office	6	8.2	106,080
Tape: Box closer: murky color	Normal: class 2	Office	30	4.5	272,160
Tape: Box closer: transparency	Normal: class 2	Office	15	4.5	181,440
Tape: transparency 1/2 inche 10 yard	Normal: class 2	Office	5	15.0	104,895
Tape: transparency 1/2 inche 36 yard, big	Normal: class 2	Office	15	4.6	163,200
Tape: transparency 1/2 inche 3 yards	Normal: class 2	Office	5	8.0	102,000
Tape: transparency 1/2 inche 72 yard	Normal: class 2	Office	5	10.0	74,520
Tape: transparency 1 inche 36 yard	Normal: class 2	Office	5	4.6	61,200
Tape: transparency 3/4 inche 36 yard	Normal: class 2	Office	10	4.6	102,000
Tape: transparency 3/4 inche 72 yard	Normal: class 2	Office	5	10.0	74,520
Pen: Lancer 626 Blue	Normal: class 2	Office	3	6.5	74,304
Pen: Lancer 813 Black	Normal: class 2	Office	2	7.8	49,536
Pen: Lancer 813 Red	Normal: class 2	Office	2	7.8	49,536
Pen: Lancer 813 Blue	Normal: class 2	Office	3	7.8	74,304
Pen: Lancer 825 Black	Normal: class 2	Office	4	9.0	103,680
Pen: Lancer 825 Red	Normal: class 2	Office	5	9.0	103,680
Pen: Lancer 825 Blue	Normal: class 2	Office	5	9.0	103,680
Pen: Lancer 878 Black	Normal: class 2	Office	7	6.5	89,100
Pen: Lancer 878 Red	Normal: class 2	Office	7	6.5	89,100
Pen: Lancer 878 Blue	Normal: class 2	Office	7	6.5	89,100

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Pen: Lancer 915 Black	Normal: class 2	Office	2	7.2	52,632
Pen: Lancer 915 Red	Normal: class 2	Office	2	7.2	52,632
Pen: Lancer 915 Blue	Normal: class 2	Office	3	7.2	78,948
Pen: Diamond	Normal: class 2	Office	5	9.0	102,900
chemical pen: pilot, small, Black	Normal: class 2	Office	1	21.6	50,279
chemical pen: pilot, small, Red	Normal: class 2	Office	1	21.6	50,279
chemical pen: pilot, small, Blue	Normal: class 2	Office	1	21.6	50,279
Wooden Pencil	Normal: class 2	Office	2	25.0	57,810
Pencil: muti-head	Normal: class 2	Office	2	20.0	76,440
Meji color pen	Normal: class 2	Office	4	15.0	128,774
Wooden color short pen	Normal: class 2	Office	3	20.0	49,140
Plastic binder	Normal: class 2	Office	10	3.7	198,360
Book: tearable papert, Big	Normal: class 2	Office	8	25.0	120,042
Book: tearable papert, without line,Big	Normal: class 2	Office	5	25.0	84,084
<b>Total storage area of Office category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>6</b>	<b>Total</b>	<b>7,229,335</b>
Hair Jel: Jenny	Normal: class 2	Personal care	3	19.0	38,896
Nail polisher: Big size	Normal: class 2	Personal care	15	28.0	147,420
Olive oil: Big size	Normal: class 2	Personal care	8	28.0	147,420
Nail cleaning brush: flat iron shape	Normal: class 2	Personal care	6	4.5	87,296
Nail cleaning brush: Big, transparent	Normal: class 2	Personal care	8	5.0	63,360
Razor Blade: Atta	Normal: class 2	Personal care	10	25.0	360,150
Razor Blade: Dorgo	Normal: class 2	Personal care	5	15.0	132,825
Razor : S.Doll	Normal: class 2	Personal care	5	25.0	145,800
Razor : 4 pieces in one pack	Normal: class 2	Personal care	3	25.0	163,170
Tradition razor	Normal: class 2	Personal care	8	18.0	192,375
Razor : Double blades SuperMax	Normal: class 2	Personal care	5	6.1	162,360
Razor :DoctorII	Normal: class 2	Personal care	5	5.4	211,680
Razor : single blades Gillette Click	Normal: class 2	Personal care	25	12.0	498,960
Razor : Gillette Thin 2	Normal: class 2	Personal care	33	2.5	912,600
Razor : with Nail cutter	Normal: class 2	Personal care	6	5.5	70,200
Razor : Karat	Normal: class 2	Personal care	5	6.6	61,560
Razor : Feather	Normal: class 2	Personal care	3	4.5	44,928
Razor : with 2 blades	Normal: class 2	Personal care	3	16.0	313,200
Razor : Fancy	Normal: class 2	Personal care	15	5.5	420,660
Razor : Green Sayuri	Normal: class 2	Personal care	1	5.5	70,680
Razor : Yellow Sayuri	Normal: class 2	Personal care	2	5.5	141,360
Toothbrush: Soft, transparent Eastman	Normal: class 2	Personal care	13	20.0	619,520
Toothbrush: 3 in one pack JGA, turbid	Normal: class 2	Personal care	3	16.0	141,588
Toothbrush: 3 in one pack JGA, transparent	Normal: class 2	Personal care	3	16.0	141,588
Toothbrush: Slim Victory	Normal: class 2	Personal care	10	3.6	233,928

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Toothbrush: Chinesee, Kid	Normal: class 2	Personal care	2	10.0	50,600
Toothbrush: Chinesee, Adult 650	Normal: class 2	Personal care	3	16.0	139,392
Toothbrush: Chinesee, Adult 940	Normal: class 2	Personal care	3	15.0	83,472
Toothbrush: CASA, 203	Normal: class 2	Personal care	6	13.2	235,704
Toothbrush: CASA, 204	Normal: class 2	Personal care	6	13.2	235,704
Toothbrush: CASA, 205	Normal: class 2	Personal care	6	13.2	235,704
Toothbrush: CASA, 207	Normal: class 2	Personal care	6	13.2	235,704
Toothbrush: CASA, 208	Normal: class 2	Personal care	6	13.2	235,704
Toothbrush: CASA, 210	Normal: class 2	Personal care	6	13.2	235,704
Toothbrush: JAGA, 674	Normal: class 2	Personal care	9	10.0	283,176
Toothbrush: JAGA, 690	Normal: class 2	Personal care	9	10.0	283,176
Toothbrush: JAGA, 698	Normal: class 2	Personal care	9	10.0	283,176
Toothbrush: JAGA, 699	Normal: class 2	Personal care	9	10.0	283,176
Toothbrush: JAGA, 739	Normal: class 2	Personal care	9	10.0	283,176
Toothbrush: JAGA, 740	Normal: class 2	Personal care	9	10.0	283,176
Toothbrush: OSAKA, 204	Normal: class 2	Personal care	6	8.0	194,081
Toothbrush: OSAKA, 205	Normal: class 2	Personal care	6	8.0	194,081
Toothbrush: OSAKA, 206	Normal: class 2	Personal care	6	8.0	194,081
Toothbrush: Kid, Komo	Normal: class 2	Personal care	5	6.6	175,827
Cotton wool: Ambulance bus	Normal: class 2	Personal care	10	7.5	262,400
Cotton wool: Shell, pot, JoJo	Normal: class 2	Personal care	15	14.0	643,104
Cotton buts: 50 pieces in pack	Normal: class 2	Personal care	12	10.0	544,320
Cotton buts: 100 pieces in pack	Normal: class 2	Personal care	15	10.0	536,256
Cotton buts: Fancy Pot 2 slots	Normal: class 2	Personal care	6	20.0	442,200
Cotton buts: Fancy Jumbo Shell Pot	Normal: class 2	Personal care	1	21.0	512,550
Cotton buts: Fancy Giant size pot	Normal: class 2	Personal care	12	13.0	139,200
Cotton buts: Square box, pineapple	Normal: class 2	Personal care	10	14.0	630,000
Cotton buts: transparent small size pot	Normal: class 2	Personal care	10	9.0	357,192
Cotton buts: 100 pieces in pack	Normal: class 2	Personal care	5	9.3	390,720
Cotton buts: 100 pieces in pack	Normal: class 2	Personal care	2	8.5	560,634
Soap: Ginger	Normal: class 2	Personal care	8	25.0	77,490
Soap: Small Cucumber	Normal: class 2	Personal care	2	8.0	17,024
Soap: Laura	Normal: class 2	Personal care	8	22.0	102,960
Soap: Big Tamamrine	Normal: class 2	Personal care	3	16.0	30,800
Shower sponge : Jolly 001	Normal: class 2	Personal care	3	3.8	75,000
Shower sponge : Jolly 002	Normal: class 2	Personal care	5	3.8	150,000
Shower sponge : Jolly 003	Normal: class 2	Personal care	3	3.8	75,000
Shower sponge : Jolly 004	Normal: class 2	Personal care	23	3.8	675,000
<b>Total storage area of Personal care category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>8</b>	<b>Total</b>	<b>15,890,187</b>
Plastic spoon: long	Normal: class 2	Plastic	2	8.5	46,200

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Plastic spoon: short	Normal: class 2	Plastic	5	6.5	53,760
Plastic fork: short	Normal: class 2	Plastic	2	8.5	46,200
Spoon: Panda, short	Normal: class 2	Plastic	30	20.0	380,016
Chopstick	Normal: class 2	Plastic	3	25.0	158,508
Plastic bucket: Black 16	Normal: class 2	Plastic	12	6.0	106,496
Plastic bucket: Black 18	Normal: class 2	Plastic	12	8.0	196,020
Plastic bucket: 3.5	Normal: class 2	Plastic	6	4.8	198,288
Plastic bucket: Yellow 2.5	Normal: class 2	Plastic	10	3.5	227,448
Plastic bucket: Yellow 3.5	Normal: class 2	Plastic	9	4.2	178,292
Plastic bucket: Yellow 4.5	Normal: class 2	Plastic	8	6.0	178,746
Fabric cleaning Brush: Nylon, flat iron,china	Normal: class 2	Plastic	5	11.0	175,500
Brush: Nylon, Color	Normal: class 2	Plastic	6	4.6	136,125
Fabric cleaning Brush:Eastman 2 colors	Normal: class 2	Plastic	25	15.0	1,333,800
Fabric cleaning Brush:Eastman, Bone	Normal: class 2	Plastic	13	14.4	685,440
Fabric cleaning Brush:Rainbow, Samor	Normal: class 2	Plastic	24	22.0	967,824
Brush: Rose, Milk color	Normal: class 2	Plastic	15	8.0	147,900
Brush: Rose, Transparent color	Normal: class 2	Plastic	20	4.4	72,756
Fabric cleaning Brush:003	Normal: class 2	Plastic	15	5.3	369,360
Fabric cleaning Brush:707	Normal: class 2	Plastic	7	5.2	106,392
Fabric cleaning Brush:JCJ	Normal: class 2	Plastic	13	4.0	188,100
Fabric cleaning Brush:031	Normal: class 2	Plastic	20	4.8	268,155
Fabric cleaning Brush:Nylon 888	Normal: class 2	Plastic	10	5.5	109,275
Fabric cleaning Brush:Samor, White fiber	Normal: class 2	Plastic	13	17.0	739,704
Brush: Black meal of coconut	Normal: class 2	Plastic	8	4.1	168,000
Brush: Brown meal of coconut	Normal: class 2	Plastic	12	4.1	224,000
Wooden Brush: Rose, Clorful fiber	Normal: class 2	Plastic	30	6.0	225,216
Pan cleaning brush: meal of coconut 2014	Normal: class 2	Plastic	15	3.8	162,336
Brush: Brass 5 rows	Normal: class 2	Plastic	4	4.9	9,375
Brush: Brass 6 rows	Normal: class 2	Plastic	3	5.2	9,750
Brush: Brass 7 rows	Normal: class 2	Plastic	3	5.7	9,750
Brush: Brass,3 Roses	Normal: class 2	Plastic	21	6.5	139,104
Brush: Brass,Tiger	Normal: class 2	Plastic	12	2.6	233,772
Brush: Brass,Coin	Normal: class 2	Plastic	18	2.6	233,772
Bath roon cleaning brush: Hama	Normal: class 2	Plastic	10	9.0	568,260
Bath roon cleaning brush: Fish	Normal: class 2	Plastic	8	10.0	319,275
Bath roon cleaning brush	Normal: class 2	Plastic	50	1.8	860,244
Shoe brush: Herping	Normal: class 2	Plastic	7	20.0	397,056
Bottle cleaning brush: Twin head	Normal: class 2	Plastic	3	3.1	106,080
Broom: water broomy	Normal: class 2	Plastic	45	4.0	912,384
trash dipper: grade A	Normal: class 2	Plastic	12	6.8	95,040



Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
trash dipper: small size 345	Normal: class 2	Plastic	12	5.2	147,200
trash dipper with handle slot: grade A	Normal: class 2	Plastic	5	3.7	256,074
Fabric Hanger: Big flowers	Normal: class 2	Plastic	5	4.5	264,880
Fabric Hanger: Green flowers	Normal: class 2	Plastic	6	4.7	235,683
Fabric Hanger: Daily	Normal: class 2	Plastic	5	3.3	331,968
Fabric Hanger: Big Bee	Normal: class 2	Plastic	3	7.0	245,784
Shoes hanger	Normal: class 2	Plastic	6	7.0	199,800
Clothes hanger: 222 ( wire)	Normal: class 2	Plastic	30	9.0	207,834
Clothes hanger: 222 ,plastic	Normal: class 2	Plastic	15	5.4	284,376
Clothes hanger: No.799	Normal: class 2	Plastic	15	10.0	228,888
Clothes hanger: PF221	Normal: class 2	Plastic	60	3.2	275,000
Clothes hanger: Round Shape	Normal: class 2	Plastic	10	3.2	248,640
Clothes hanger: C1	Normal: class 2	Plastic	86	3.0	311,799
Clothes hanger: 5 holes	Normal: class 2	Plastic	8	5.0	163,293
Clothes hanger: 599, Black	Normal: class 2	Plastic	6	9.0	246,240
Clothes hanger: red heart-shaped, 99	Normal: class 2	Plastic	43	4.6	580,800
Clothes hanger: Square, Twin	Normal: class 2	Plastic	15	3.7	250,800
Clothes hanger: Square Mini	Normal: class 2	Plastic	3	3.0	153,000
Clothes hanger: Aluminium, 639	Normal: class 2	Plastic	21	4.7	157,122
Clothes hanger: Aluminium, 646	Normal: class 2	Plastic	26	5.8	209,496
Fabric pincher: 24 pieces, Put	Normal: class 2	Plastic	40	3.5	255,816
Fabric pincher: 30 pieces, CS	Normal: class 2	Plastic	60	3.9	268,800
Fabric pincher: 30 pieces, Put	Normal: class 2	Plastic	60	4.1	291,200
Fabric pincher: 18 pieces, round shape, Flower	Normal: class 2	Plastic	29	2.9	506,880
Fabric pincher: Wooden	Normal: class 2	Plastic	15	13.0	189,000
Shower cap: cartoon pattern, small	Normal: class 2	Plastic	4	6.8	63,000
Shower cap: cartoon pattern, big	Normal: class 2	Plastic	4	8.0	72,000
Comb: grade A No.801	Normal: class 2	Plastic	10	6.8	66,268
Comb: grade A No.802	Normal: class 2	Plastic	10	6.8	66,268
Comb: grade A No.803	Normal: class 2	Plastic	10	6.8	66,268
Comb: grade A No.804	Normal: class 2	Plastic	10	6.8	66,268
Comb: grade A No.805	Normal: class 2	Plastic	10	6.8	66,268
Comb: grade A No.811A	Normal: class 2	Plastic	8	5.4	59,625
Comb: Haie clipper, plastic	Normal: class 2	Plastic	45	2.4	97,200
Comb: Haie clipper, stainless	Normal: class 2	Plastic	15	3.0	37,800
Cone No1	Normal: class 2	Plastic	8	8.5	256,620
Cone No2	Normal: class 2	Plastic	5	4.5	170,274
Cone No3	Normal: class 2	Plastic	6	3.5	90,000
Sauce bottle: Orange	Normal: class 2	Plastic	3	4.5	105,000
Sauce bottle: Transparency	Normal: class 2	Plastic	5	4.5	210,000

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Milk bottle: Kid, Chinese	Normal: class 2	Plastic	5	7.5	350,796
Water bottle: 558	Normal: class 2	Plastic	3	7.5	98,784
Photo Album: Medium size	Normal: class 2	Plastic	5	3.8	21,312
Photo Album: Jumbo size	Normal: class 2	Plastic	5	2.1	24,738
Photo Album: Big size	Normal: class 2	Plastic	3	4.2	51,975
Back cleaning brush: Twin	Normal: class 2	Plastic	15	4.4	190,944
Water canteen: 999, soldier	Normal: class 2	Plastic	10	2.0	158,080
Water canteen: 999-2.5, Perfect	Normal: class 2	Plastic	6	5.8	201,600
Water canteen: 022	Normal: class 2	Plastic	5	4.5	153,000
Water canteen: No. 111	Normal: class 2	Plastic	4	6.1	187,935
Water canteen: No. 486D	Normal: class 2	Plastic	5	4.4	129,024
Water canteen: No. 469X	Normal: class 2	Plastic	3	6.0	86,480
Water canteen: PB-395	Normal: class 2	Plastic	4	4.4	93,308
Water canteen: PB-411	Normal: class 2	Plastic	5	4.3	90,044
Water canteen: PB-426	Normal: class 2	Plastic	4	4.4	97,739
Water canteen: PB-457	Normal: class 2	Plastic	5	4.0	91,389
Water canteen: PB-487	Normal: class 2	Plastic	2	8.6	96,215
Water canteen: PB-488	Normal: class 2	Plastic	5	4.4	88,893
Water canteen: PB-493	Normal: class 2	Plastic	4	3.9	97,739
Water canteen: PB-495	Normal: class 2	Plastic	5	3.9	91,413
Ice canteen: Perfect, No. 999-M5	Normal: class 2	Plastic	5	10.0	300,696
Ice canteen: Star S, No. 592	Normal: class 2	Plastic	6	6.0	309,120
Water canteen: Tommy	Normal: class 2	Plastic	2	9.1	87,248
Water canteen: No. 486X	Normal: class 2	Plastic	5	5.0	129,024
Water canteen: Leo	Normal: class 2	Plastic	2	9.5	103,428
Water canteen: Ikkusang8, No. 468D	Normal: class 2	Plastic	6	5.8	232,368
Water canteen: Ice cream 618	Normal: class 2	Plastic	2	11.0	114,048
Topknot of Pot's cover: Medium	Normal: class 2	Plastic	1	25.0	102,375
Topknot of Pot's cover: Size	Normal: class 2	Plastic	1	25.0	72,000
Topknot of Pot's cover: Big	Normal: class 2	Plastic	1	25.0	102,375
Ice tray: pumpkin	Normal: class 2	Plastic	4	15.0	192,780
Cigarette and lighter container: gastank, blue	Normal: class 2	Plastic	2	4.8	52,440
Cigarette and lighter container: gastank, orange	Normal: class 2	Plastic	2	4.8	52,440
Water pourer: Medium	Normal: class 2	Plastic	6	4.0	303,600
Water pourer: Small	Normal: class 2	Plastic	6	3.5	157,248
Water pourer: Big	Normal: class 2	Plastic	14	3.5	904,050
Water filter: 5 level	Normal: class 2	Plastic	3	8.5	110,240
Water filter: Turbine	Normal: class 2	Plastic	20	5.5	330,720
Chair: CS grade B	Normal: class 2	Plastic	5	16.0	156,800
Water bottle 1x3	Normal: class 2	Plastic	8	4.6	287,100

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Water bottle 1x3: Square shape	Normal: class 2	Plastic	10	2.5	500,000
Water bottle 1x4	Normal: class 2	Plastic	8	2.6	320,625
Water bottle: pushed, small	Normal: class 2	Plastic	3	3.8	78,652
Water bottle: Pumpkin 711	Normal: class 2	Plastic	3	4.8	75,465
Water bottle: Pumpkin sport	Normal: class 2	Plastic	2	5.8	73,080
Dipper with short handle	Normal: class 2	Plastic	2	25.0	48,246
Bowl 18cm, grade B, dark	Normal: class 2	Plastic	6	5.8	144,000
Bowl 20A	Normal: class 2	Plastic	27	5.8	288,000
Bowl 20cm, grade B, dark	Normal: class 2	Plastic	6	5.8	144,000
Bowl 20cm, grade A, dark	Normal: class 2	Plastic	24	4.8	217,728
Bowl 16cm, grade A, with handle	Normal: class 2	Plastic	6	6.8	92,160
Bowl 16cm, grade B, Mix	Normal: class 2	Plastic	6	6.8	92,160
Water sprayer: 589	Normal: class 2	Plastic	15	2.3	202,464
Water sprayer: 1008	Normal: class 2	Plastic	6	1.8	106,176
Water sprayer: 2 in 1	Normal: class 2	Plastic	9	2.0	115,200
Water sprayer: Solo	Normal: class 2	Plastic	6	5.2	282,408
Water sprayer: bottle gourd, Star S, 607	Normal: class 2	Plastic	7	1.9	91,058
Water sprayer: Canon, Yellow	Normal: class 2	Plastic	18	1.5	214,368
Water sprayer: Lucky, Bell	Normal: class 2	Plastic	14	1.9	225,568
Water sprayer: Smartwing	Normal: class 2	Plastic	3	8.0	328,860
Saving box: Medium A	Normal: class 2	Plastic	6	6.6	95,040
Saving box: Medium B	Normal: class 2	Plastic	9	6.5	95,040
Saving box: Tiny A	Normal: class 2	Plastic	6	5.9	98,176
Saving box: Medium A, Kid	Normal: class 2	Plastic	9	5.4	71,709
Saving box: Giant, A	Normal: class 2	Plastic	4	6.8	111,671
Saving box: Big cylinder A	Normal: class 2	Plastic	1	6.2	38,720
Saving box: Fat A	Normal: class 2	Plastic	12	4.0	130,560
Saving box: Star, S100-4	Normal: class 2	Plastic	3	6.0	105,000
Saving box: Star, S1005-4	Normal: class 2	Plastic	3	6.0	90,000
Lunch box 584-2	Normal: class 2	Plastic	5	3.9	202,500
Lunch box 921	Normal: class 2	Plastic	6	7.0	59,400
Lunch box 922	Normal: class 2	Plastic	12	3.5	243,750
Lunch box 923	Normal: class 2	Plastic	9	5.5	147,840
Tissue box	Normal: class 2	Plastic	5	4.9	191,520
Soap box: 351P White	Normal: class 2	Plastic	3	4.5	171,720
Soap box: 351P Transparent	Normal: class 2	Plastic	3	4.5	171,720
Soap box: Kiak	Normal: class 2	Plastic	9	3.0	85,184
Soap box: Pearl	Normal: class 2	Plastic	10	3.8	355,320
Soap box: 771	Normal: class 2	Plastic	6	4.1	193,600
Soap box: Shinjung	Normal: class 2	Plastic	7	3.7	176,800

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Soap box: White stripes	Normal: class 2	Plastic	6	4.0	216,000
Soap box: Transparent stripes	Normal: class 2	Plastic	6	4.0	216,000
Basket: CS 433 grade A	Normal: class 2	Plastic	9	5.8	193,440
Basket: CS 014	Normal: class 2	Plastic	6	5.8	140,400
Basket: 436, Shopsticks	Normal: class 2	Plastic	2	8.5	60,750
High Cup: 355 with Cover	Normal: class 2	Plastic	4	6.8	83,304
Cup: 475	Normal: class 2	Plastic	8	5.6	172,800
Cup: 733 with Handle	Normal: class 2	Plastic	15	3.4	243,810
Cup: P.S. 12 ounces	Normal: class 2	Plastic	10	9.0	350,020
Cup: P.S. 10 ounces	Normal: class 2	Plastic	7	6.8	337,260
Cup: P.S. 70 ounces	Normal: class 2	Plastic	4	9.5	504,000
Cup: Arale	Normal: class 2	Plastic	15	4.2	193,200
Cup: Kitty style 2013	Normal: class 2	Plastic	12	2.0	144,900
Cup: Frog style 2012	Normal: class 2	Plastic	12	2.0	144,900
Cup: Wine	Normal: class 2	Plastic	3	6.5	83,824
Cup: Freshy	Normal: class 2	Plastic	20	2.3	269,724
Cup: Marble 004	Normal: class 2	Plastic	10	5.0	336,000
Cup: A3 with Handle	Normal: class 2	Plastic	10	9.0	475,000
Cup: 204 with Handle	Normal: class 2	Plastic	8	2.9	133,320
Cup: 205 with Handle	Normal: class 2	Plastic	8	3.1	123,296
Cup: 639 Sakura, stripe with Cover	Normal: class 2	Plastic	12	4.5	280,000
Cup: 404 with Handle	Normal: class 2	Plastic	8	5.2	302,400
Cup: 002 with Handle	Normal: class 2	Plastic	15	6.0	574,080
Cup: 004 with Handle, Cartoon pattern	Normal: class 2	Plastic	10	5.7	324,000
Cup 514: White pattern	Normal: class 2	Plastic	2	6.2	75,950
Cup 514: Transparent pattern	Normal: class 2	Plastic	3	6.2	151,900
Cup 688: Sakura, small	Normal: class 2	Plastic	6	5.7	118,400
Cup: Transparent, pineapple pattern	Normal: class 2	Plastic	10	6.4	280,704
<b>Total storage area of Plastic category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>11</b>	<b>Total</b>	<b>39,253,331</b>
Menthol: Mid	Normal: class 1	Chemical product	3	9.0	47,940
Refilled Gas: Buca, Jumbo	Normal: class 1	Chemical product	24	4.2	135,828
a cigarette lighter: AS	Normal: class 1	Chemical product	8	20.0	102,060
a cigarette lighter: Pilot	Normal: class 1	Chemical product	3	22.0	99,792
a cigarette lighter: Red Tai-Yo	Normal: class 1	Chemical product	50	20.0	649,152
a cigarette lighter: Tai-Yo	Normal: class 1	Chemical product	57	20.0	1,117,984
a cigarette lighter: Black Star	Normal: class 1	Chemical product	10	20.0	102,060
a cigarette lighter: Red Star	Normal: class 1	Chemical product	15	20.0	102,060
Dry Alcohol cup	Normal: class 1	Chemical product	5	18.0	89,700
Kerosine: Jun	Normal: class 1	Chemical product	60	3.3	166,320
Indigo: bottle Mokey	Normal: class 1	Chemical product	2	7.5	22,176

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Indigo: square shape, Crown	Normal:class 1	Chemical product	20	1.2	25,920
Indigo: Squarel bottle, Chicken	Normal:class 1	Chemical product	1	13.0	31,900
Indigo: square shape, Monkey	Normal:class 1	Chemical product	2	9.0	22,176
Fabric Whitner	Normal:class 1	Chemical product	10	8.0	135,828
Metal polisher: Medium, Brasso	Normal:class 1	Chemical product	15	3.0	35,088
Metal polisher:Small, Brasso	Normal:class 1	Chemical product	33	3.4	218,592
Metal polisher: Big, Brasso	Normal:class 1	Chemical product	10	5.8	64,638
Metal polisher:Small, Vnol	Normal:class 1	Chemical product	20	1.4	39,204
Metal polisher:Big, Vnol	Normal:class 1	Chemical product	20	2.6	78,045
Shoe polish: small, black	Normal:class 1	Chemical product	20	9.0	211,761
Shoe polish: small, brown	Normal:class 1	Chemical product	7	9.0	115,506
Shoe rubber: Kiwi, White	Normal:class 1	Chemical product	5	9.5	48,731
Shoe rubber: Kiwi, Black	Normal:class 1	Chemical product	8	9.5	64,974
Shoe rubber: Kiwi, Brown	Normal:class 1	Chemical product	5	9.5	48,731
Glass Cleaner: Buka	Normal:class 1	Chemical product	20	4.0	111,090
Bath room cleaner: Jackie, Pink	Normal:class 1	Chemical product	43	13.0	213,108
Dish soap cleanser	Normal:class 1	Chemical product	13	5.0	90,480
Dish liquid cleanser: Cleo	Normal:class 1	Chemical product	60	12.0	746,928
<b>Total storage area of Chemical category</b>	<b>Normal:class 1</b>	<b>Average of category</b>	<b>19</b>	<b>Total</b>	<b>4,937,771</b>
Wooden chopping block	Normal:class 1	Cooking	10	7.5	50,000
Ladle: Belanine	Normal:class 1	Cooking	13	6.5	148,500
Knife: Kiwi 172	Normal:class 1	Cooking	20	1.1	6,480
Knife: Kiwi 173	Normal:class 1	Cooking	20	1.0	6,480
Knife: Kiwi 193	Normal:class 1	Cooking	75	0.3	13,860
Knife: Kiwi 194	Normal:class 1	Cooking	50	0.3	14,175
Knife: Kiwi 195	Normal:class 1	Cooking	50	0.4	15,435
Knife: Kiwi 21	Normal:class 1	Cooking	10	1.8	7,128
Knife: Kiwi 22	Normal:class 1	Cooking	10	1.8	7,128
Knife: Kiwi 247	Normal:class 1	Cooking	10	0.9	6,324
Knife: Kiwi 474	Normal:class 1	Cooking	20	0.5	9,726
Knife: Kiwi 475	Normal:class 1	Cooking	20	0.6	9,726
Knife: Kiwi 476	Normal:class 1	Cooking	20	1.0	16,588
Knife: Kiwi 477	Normal:class 1	Cooking	20	1.0	16,588
Knife: Chinese 103	Normal:class 1	Cooking	50	0.2	11,719
Knife: Chinese 104A	Normal:class 1	Cooking	20	0.4	9,833
Knife: Chinese 106W	Normal:class 1	Cooking	20	0.4	9,120
Knife: Chinese 108	Normal:class 1	Cooking	20	0.7	11,375
Knife: Chinese 109	Normal:class 1	Cooking	20	0.7	11,813
Knife: Chinese 1105	Normal:class 1	Cooking	20	0.7	12,220
Knife: Chinese 1168	Normal:class 1	Cooking	20	0.9	16,560

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Knife: Chinese 1174	Normal: class 1	Cooking	20	1.6	13,050
Knife: Chinese 1177	Normal: class 1	Cooking	20	1.1	13,440
Knife: Chinese 1178	Normal: class 1	Cooking	20	1.3	12,600
Knife: Chinese 202	Normal: class 1	Cooking	12	1.2	9,214
Knife: Chinese 204	Normal: class 1	Cooking	12	1.2	10,650
Knife: Chinese 205	Normal: class 1	Cooking	12	1.6	8,100
Grilling sieve	Normal: class 1	Cooking	5	8.0	62,400
<b>Total storage area of Cooking category</b>	<b>Normal: class 1</b>	<b>Average of category</b>	<b>22</b>	<b>Total</b>	<b>540,230</b>
Dry cell: Panasonic, 2A, green	Normal: class 1	Electrical	21	20.0	45,198
Dry cell: Panasonic, 2A, black	Normal: class 1	Electrical	4	22.0	15,066
Dry cell: Panasonic, 2A, red	Normal: class 1	Electrical	4	21.0	15,066
Dry cell: Panasonic, 3A, black	Normal: class 1	Electrical	2	12.0	9,425
Dry cell: Panasonic, 9V, square shape	Normal: class 1	Electrical	2	10.0	9,792
Dry cell: Panasonic, 2A, Alkarine	Normal: class 1	Electrical	2	9.0	17,484
Dry cell: Panasonic, 3A, Alkarine	Normal: class 1	Electrical	2	5.0	13,175
Dry cell: Panasonic, size C, Middle	Normal: class 1	Electrical	4	25.0	44,103
Dry cell: Panasonic, size D, Big	Normal: class 1	Electrical	5	26.0	74,646
Dry cell: Chinese, 2A	Normal: class 1	Electrical	40	17.0	174,933
Dry cell: Chinese, 3A	Normal: class 1	Electrical	3	18.0	37,440
Dry cell: CAT, Small	Normal: class 1	Electrical	17	12.0	336,690
Dry cell: CAT, Big	Normal: class 1	Electrical	20	15.5	149,640
Flashlight, Panasonic, FF-137	Normal: class 1	Electrical	10	4.0	91,266
Flashlight, Panasonic, FF-327	Normal: class 1	Electrical	10	3.0	55,728
Flashlight, PF-127	Normal: class 1	Electrical	10	3.5	68,880
Flashlight, Gun A2500	Normal: class 1	Electrical	12	2.1	45,360
Flashlight, Gun A2600	Normal: class 1	Electrical	12	1.8	55,000
Flashlight, Gun S2200	Normal: class 1	Electrical	12	1.8	31,200
Power plug receptable: 2001-10	Normal: class 1	Electrical	15	6.9	87,516
Power plug receptable: 2001-11	Normal: class 1	Electrical	15	6.5	87,516
Power plug receptable: 2001-5	Normal: class 1	Electrical	15	11.0	82,998
Power plug receptable: 2001-8	Normal: class 1	Electrical	15	9.0	87,516
Power plug receptable: 2001-9	Normal: class 1	Electrical	15	8.0	87,516
Power plug receptable: SUI, triangle shape	Normal: class 1	Electrical	8	3.5	53,664
Power plug receptable: NS-1 Nakashi	Normal: class 1	Electrical	5	5.6	53,703
Light bulb of Flashlight: 24V No.1	Normal: class 1	Electrical	1	3.0	12,432
Light bulb of Flashlight: 24V No.2	Normal: class 1	Electrical	1	3.0	12,432
Light bulb of Flashlight: 24V No.3	Normal: class 1	Electrical	1	3.0	24,864
Light bulb of Flashlight: 24V No.4	Normal: class 1	Electrical	1	3.0	24,864
Light bulb of Flashlight: 24V No.5	Normal: class 1	Electrical	1	3.0	12,432
<b>Total storage area of Electrical category</b>	<b>Normal: class 1</b>	<b>Average of category</b>	<b>9</b>	<b>Total</b>	<b>1,917,545</b>

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Fabric Gloves: Special weaver, rabbit	Normal: class 1	Fabric	15	3.4	88,236
Fabric Gloves: Red rim	Normal: class 1	Fabric	75	3.9	580,000
Fabric Gloves: eye, white, 125	Normal: class 1	Fabric	8	2.0	96,096
Fabric Gloves: eye, size 10-12	Normal: class 1	Fabric	7	1.6	67,500
Fabric Gloves: eye, size 132	Normal: class 1	Fabric	15	2.4	103,356
Fabric Gloves: eye, size 5-7	Normal: class 1	Fabric	5	1.2	52,992
Fabric Gloves: eye, size 7-9	Normal: class 1	Fabric	7	1.5	52,992
Fabric Gloves: Sun	Normal: class 1	Fabric	30	5.2	249,964
Fabric Gloves: Sun, nylon	Normal: class 1	Fabric	30	5.2	336,960
Fabric Gloves: peacock, white, nylon	Normal: class 1	Fabric	30	5.4	299,520
Fabric Gloves: eagle, colorful, nylon	Normal: class 1	Fabric	80	4.8	598,000
Fabric Gloves: golden fish, colorful, nylon	Normal: class 1	Fabric	12	4.5	116,600
Fabric Gloves: Sun, sailclothes	Normal: class 1	Fabric	10	1.9	91,728
Fabric Gloves: peacock, sailclothes	Normal: class 1	Fabric	20	4.0	268,128
Pollution filter clothes: blue	Normal: class 1	Fabric	30	4.5	294,756
Socks: short, Mix color	Normal: class 1	Fabric	10	2.8	112,320
Socks: business, Mix color	Normal: class 1	Fabric	15	3.5	187,200
<b>Total storage area of Fabric category</b>	<b>Normal: class 1</b>	<b>Average of category</b>	<b>23</b>	<b>Total</b>	<b>3,596,348</b>
Mirror: bath room	Normal: class 1	Household	6	6.2	112,266
Mirror: Flower 10x14 ,hang	Normal: class 1	Household	6	8.0	47,952
Mirror: Flower 7x10 ,hang	Normal: class 1	Household	8	5.0	46,170
Mirror: Flower 8x12 ,hang	Normal: class 1	Household	7	6.5	66,048
Mirror: Flower No.10	Normal: class 1	Household	20	4.7	78,300
Mirror: Flower No.12	Normal: class 1	Household	10	5.5	43,805
Mirror: Flower No.6	Normal: class 1	Household	45	1.8	46,980
Mirror: Flower No.7	Normal: class 1	Household	45	2.4	63,423
Mirror: Flower No.8	Normal: class 1	Household	20	2.8	48,720
Mirror: Flower No.9	Normal: class 1	Household	20	3.4	56,637
Mirror: Flower No.4	Normal: class 1	Household	10	8.0	62,928
Mirror: Flower No.5	Normal: class 1	Household	10	11.0	80,730
Bottle opener: A80	Normal: class 1	Household	50	1.0	41,160
Bottle opener: 777	Normal: class 1	Household	3	1.2	5,865
Nail cutter: 129	Normal: class 1	Household	10	26.0	156,000
Nail cutter: 777, 211	Normal: class 1	Household	20	0.5	5,000
Nail cutter: 999, Small	Normal: class 1	Household	100	0.2	5,625
Nail cutter: 999, Big	Normal: class 1	Household	50	0.5	5,400
Shoe rope: 24 inches, White	Normal: class 1	Household	2	4.9	12,100
Shoe rope: 24 inches, Black	Normal: class 1	Household	2	4.9	12,100
Shoe rope: 24 inches, Brown	Normal: class 1	Household	1	4.9	12,100
Shoe rope: 24 inches, Dark brown	Normal: class 1	Household	1	4.9	12,100

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Padlock: VITA short, 50mm	Normal:class 1	Household	10	4.8	22,770
Padlock: Solo 35mm, pack	Normal:class 1	Household	5	3.2	27,090
Padlock: Solo 40mm, pack	Normal:class 1	Household	5	3.4	27,090
Padlock: Solo 45mm, pack	Normal:class 1	Household	5	4.0	27,090
Padlock: Solo 50mm, pack	Normal:class 1	Household	5	3.6	27,090
Padlock: Solo 55mm, pack	Normal:class 1	Household	5	3.8	27,090
U-lock: 3 pieces	Normal:class 1	Household	13	2.0	8,000
U-lock: Harry Master, 115	Normal:class 1	Household	10	2.7	16,038
U-lock: Harry Master, 55	Normal:class 1	Household	13	0.5	4,095
U-lock: Harry Master, 75	Normal:class 1	Household	10	0.9	7,182
U-lock: Harry Master, 95	Normal:class 1	Household	10	1.6	10,868
Drawer lock	Normal:class 1	Household	10	1.1	8,580
Thread: Sailing ship, White	Normal:class 1	Household	30	2.1	43,758
Thread: Sailing ship, Mix	Normal:class 1	Household	30	2.1	43,758
Thread: Sailing ship, Black	Normal:class 1	Household	30	2.1	43,758
Thread: 10 baht set, Mix	Normal:class 1	Household	8	3.0	35,880
Brooch: tiny, White	Normal:class 1	Household	20	1.3	51,909
Brooch: tiny, Gold	Normal:class 1	Household	10	1.3	28,314
Brooch: Rose, 0	Normal:class 1	Household	100	0.3	23,800
Brooch: Rose, 1	Normal:class 1	Household	67	0.4	30,375
Brooch: Rose, 2	Normal:class 1	Household	67	0.5	41,563
Brooch: Rose, 3	Normal:class 1	Household	67	0.4	27,000
Brooch: Rose, 4	Normal:class 1	Household	100	0.7	47,500
Brooch: Bee, 1	Normal:class 1	Household	33	0.4	26,000
Brooch: Bee, 2	Normal:class 1	Household	33	0.6	42,900
Brooch: Bee, 3	Normal:class 1	Household	33	0.5	32,500
Mothball: ATM, small	Normal:class 1	Household	20	6.0	64,638
Mothball: Small pack	Normal:class 1	Household	10	7.0	125,400
Rubber gloves: Canon, L	Normal:class 1	Household	1	1.1	5,220
Rubber gloves: Canon, M	Normal:class 1	Household	1	1.1	5,220
Rubber gloves: Canon, S	Normal:class 1	Household	1	1.1	5,220
Rubber gloves: Panda, Black, L	Normal:class 1	Household	1	1.5	5,220
Rubber gloves: Panda, Black, M	Normal:class 1	Household	1	1.5	5,220
Rubber gloves: Panda, Black, S	Normal:class 1	Household	1	1.5	5,220
Rubber gloves: Panda, Orange, L	Normal:class 1	Household	6	1.5	10,440
Rubber gloves: Panda, Orange, M	Normal:class 1	Household	5	1.5	10,440
Rubber gloves: Panda, Orange, S	Normal:class 1	Household	5	1.5	10,440
Rubber gloves: Panda, Goose, 7.5, Pink	Normal:class 1	Household	2	1.4	4,930
Rubber gloves: Panda, Goose, 8.5, Pink	Normal:class 1	Household	2	1.4	4,930
Rubber gloves: Sun, Orange,L	Normal:class 1	Household	1	1.0	5,220



Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Rubber gloves: Sun, Orange,M	Normal:class 1	Household	1	1.0	5,220
Rubber gloves: Sun, Orange,S	Normal:class 1	Household	1	1.0	5,220
Doctor gloves: L	Normal:class 1	Household	3	8.0	76,950
Doctor gloves: M	Normal:class 1	Household	10	8.0	153,900
Doctor gloves: S	Normal:class 1	Household	20	8.0	282,150
Nipple: Akasen L	Normal:class 1	Household	5	4.1	79,380
Nipple: Akasen M	Normal:class 1	Household	5	4.1	79,380
Nipple: Akasen S	Normal:class 1	Household	5	4.1	79,380
Nipple: Kiki L	Normal:class 1	Household	5	4.5	78,489
Nipple: Kiki M	Normal:class 1	Household	5	4.5	78,489
Nipple: Kiki S	Normal:class 1	Household	5	4.5	78,489
Toothpick: Bamboo, Medium	Normal:class 1	Household	10	9.5	71,400
Toothpick: Bamboo, Small	Normal:class 1	Household	3	12.0	23,925
Toothpick: Bamboo, Large	Normal:class 1	Household	20	6.5	143,550
Shoe rubber: G2-1	Normal:class 1	Household	50	0.7	91,800
Shoe rubber: G2-4	Normal:class 1	Household	50	0.7	91,800
Shoe rubber: G3-1	Normal:class 1	Household	50	0.8	91,800
Shoe rubber: G3-4	Normal:class 1	Household	50	0.7	91,800
<b>Total storage area of Household category</b>	<b>Normal:class 1</b>	<b>Average of category</b>	<b>21</b>	<b>Total</b>	<b>4,342,452</b>
pincer: diamond	Normal:class 1	Mechanical	40	3.5	10,472
pincer with cutting head: diamond	Normal:class 1	Mechanical	13	0.8	5,355
pincer with sharp head: diamond	Normal:class 1	Mechanical	13	3.5	5,236
Screw driver 4 pieces in set	Normal:class 1	Mechanical	40	1.2	35,700
Screw driver with 3 inches punch head	Normal:class 1	Mechanical	24	0.5	10,296
Screw driver with 4 inches punch head	Normal:class 1	Mechanical	24	0.9	14,364
Screw driver for electrical test	Normal:class 1	Mechanical	25	0.5	16,453
Adhesive tape for wiring( Black)	Normal:class 1	Mechanical	30	2.0	151,470
Adhesive tape for wiring( White)	Normal:class 1	Mechanical	25	2.0	115,830
Adhesive tape for wiring( Green)	Normal:class 1	Mechanical	25	2.0	115,830
Adhesive tape for wiring( Red)	Normal:class 1	Mechanical	25	2.0	115,830
Adhesive tape for wiring( Blue)	Normal:class 1	Mechanical	25	2.0	115,830
Adhesive tape for wiring( Yellow)	Normal:class 1	Mechanical	25	2.0	115,830
Painting brush: No.2	Normal:class 1	Mechanical	4	2.2	24,882
Showering head spray	Normal:class 1	Mechanical	10	2.0	73,800
Cleaning tube	Normal:class 1	Mechanical	10	1.2	50,160
<b>Total storage area of Mechanical category</b>	<b>Normal:class 1</b>	<b>Average of category</b>	<b>22</b>	<b>Total</b>	<b>977,338</b>
paper card:Winner	Normal:class 1	Miscellaneous	2	8.0	24,752
Curtain hooker: Color 1	Normal:class 1	Miscellaneous	1	9.0	24,049
Curtain hooker: Color 2	Normal:class 1	Miscellaneous	1	9.0	24,049
Curtain hooker: Color 3	Normal:class 1	Miscellaneous	1	9.0	24,049

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Curtain hooker: Color 4	Normal:class 1	Miscellaneous	1	9.0	24,049
Curtain hooker: Color 5	Normal:class 1	Miscellaneous	1	9.0	24,049
Ring: Medium size	Normal:class 1	Miscellaneous	3	10.0	31,500
Ring: 500 pieces : chain	Normal:class 1	Miscellaneous	5	13.0	66,300
Ring: Small size	Normal:class 1	Miscellaneous	2	7.5	25,600
Ring: Big size	Normal:class 1	Miscellaneous	10	15.0	76,800
Artificial clay: big size	Normal:class 1	Miscellaneous	20	18.0	81,600
Perfume gel: G&G	Normal:class 1	Miscellaneous	3	12.0	76,800
<b>Total storage area of Miscellaneous category</b>	<b>Normal:class 1</b>	<b>Average of category</b>	<b>4</b>	<b>Total</b>	<b>503,596</b>
Price Tag sticker	Normal:class 1	Office	10	4.0	53,820
Staple wire	Normal:class 1	Office	6	17.0	57,684
Scissors: Orange handle	Normal:class 1	Office	72	0.7	1,005,480
Scissors: Wildman 03A	Normal:class 1	Office	24	0.5	17,280
Scissors: Wildman 04A	Normal:class 1	Office	24	0.7	17,280
Scissors: Wildman 05A	Normal:class 1	Office	24	1.2	33,000
Scissors: Rubber handle size 1	Normal:class 1	Office	2	2.1	4,840
Scissors: Rubber handle size 2	Normal:class 1	Office	1	19.0	57,132
Scissors: Chtneese yellow handle	Normal:class 1	Office	5	10.0	17,820
Scissors: Rose, 33	Normal:class 1	Office	48	0.5	31,280
Scissors: Rose, 538	Normal:class 1	Office	48	0.5	31,280
Scissors: Rose, 917	Normal:class 1	Office	48	0.5	31,280
Scissors: thread, black	Normal:class 1	Office	12	4.5	60,743
Scissors: Meti, Rabbit	Normal:class 1	Office	48	0.6	17,825
Cutter 30-K	Normal:class 1	Office	4	6.6	18,960
Cutter 44-K	Normal:class 1	Office	9	3.0	37,920
CutterPI Colorful	Normal:class 1	Office	21	5.1	69,069
Cutter ST-10	Normal:class 1	Office	9	4.2	46,750
Cutter ST-100	Normal:class 1	Office	5	5.5	32,256
Cutter ST-9	Normal:class 1	Office	9	2.6	27,636
Clipper: White 0	Normal:class 1	Office	20	1.3	68,310
Clipper: White 2	Normal:class 1	Office	30	5.0	21,735
Clipper: White 3	Normal:class 1	Office	30	5.0	21,384
Clipper: White 4	Normal:class 1	Office	30	0.7	23,546
Clipper: White 5	Normal:class 1	Office	30	0.4	11,927
Clipper: Black 110	Normal:class 1	Office	20	1.6	12,672
Clipper: Black 111	Normal:class 1	Office	10	1.0	11,340
Clipper: Black 112	Normal:class 1	Office	20	0.5	22,253
Tape: transparency 1/2 inche 36 yard, small	Normal:class 1	Office	5	9.6	62,118
White board pen: pilot, Black	Normal:class 1	Office	1	9.6	27,753
White board pen: pilot, Red	Normal:class 1	Office	1	9.6	27,753

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
White board pen: pilot, Blue	Normal:class 1	Office	1	9.6	27,753
Pencil: muti-head, Diamond	Normal:class 1	Office	12	2.2	51,772
Book: 10 baht	Normal:class 1	Office	12	15.0	65,688
Book: 5 baht	Normal:class 1	Office	6	20.0	63,360
Book: Drawing,Small	Normal:class 1	Office	4	20.0	43,472
<b>Total storage area of Office category</b>	<b>Normal:class 1</b>	<b>Average of category</b>	<b>18</b>	<b>Total</b>	<b>2,232,171</b>
Razor Blade: Superthin	Normal:class 1	Personal care	4	8.5	39,600
Razor Blade: SuperMax	Normal:class 1	Personal care	1	8.5	17,556
Razor Blade: SuperStainless	Normal:class 1	Personal care	3	6.9	39,600
Razor :TCI Set	Normal:class 1	Personal care	21	2.5	103,530
Toothbrush: Popular Eastman	Normal:class 1	Personal care	7	3.7	145,935
Toothbrush: 12 in one box, Mediun Victory	Normal:class 1	Personal care	5	5.6	102,960
Toothbrush: 12 in one box, Soft Victory	Normal:class 1	Personal care	10	5.6	205,920
Toothbrush: 30 in one box, Mediun Victory	Normal:class 1	Personal care	7	5.0	98,670
Toothbrush: 30 in one box, Soft Victory	Normal:class 1	Personal care	10	4.7	98,670
Toothbrush: OralB Med.	Normal:class 1	Personal care	12	2.5	132,188
Toothbrush: OralB Soft	Normal:class 1	Personal care	24	2.5	264,375
Toothbrush: Jomana	Normal:class 1	Personal care	30	2.5	561,792
Soap: kok-leang	Normal:class 1	Personal care	3	4.5	50,400
Soap: Tamarine	Normal:class 1	Personal care	2	11.0	27,378
Soap: Ya-Un	Normal:class 1	Personal care	15	6.0	120,000
Shower sponge: Natural	Normal:class 1	Personal care	7	1.8	89,900
<b>Total storage area of Personal care category</b>	<b>Normal:class 1</b>	<b>Average of category</b>	<b>10</b>	<b>Total</b>	<b>2,098,474</b>
Belaine spoon: long	Normal:class 1	Plastic	13	1.4	35,090
Belaine spoon: short	Normal:class 1	Plastic	20	1.5	41,327
Stainless spoon: coffee	Normal:class 1	Plastic	15	4.4	23,520
Plastic spoon-fork	Normal:class 1	Plastic	30	4.2	98,560
Stainless spoon-fork#C	Normal:class 1	Plastic	10	23.6	167,580
Spoon: Elephant, short	Normal:class 1	Plastic	15	15.0	206,886
Stainless spoon: Jet	Normal:class 1	Plastic	15	20.0	162,792
Wooden Chopstick	Normal:class 1	Plastic	8	20.0	100,800
Brush: Nylon, Hama	Normal:class 1	Plastic	43	3.2	84,150
Fabric cleaning Brush:Nylon, flat iron	Normal:class 1	Plastic	33	4.0	535,920
Fabric cleaning Brush:flat iron shape,brass	Normal:class 1	Plastic	33	5.0	493,696
Brush: Rose, Brass	Normal:class 1	Plastic	15	4.5	75,000
Floor cleaning brush: Nylon, Rose	Normal:class 1	Plastic	20	4.4	80,640
Brush: Brass,Hama	Normal:class 1	Plastic	30	3.9	84,150
Bottle cleaning brush: B1 with sponge	Normal:class 1	Plastic	4	3.1	44,400
Bottle cleaning brush: Rabbit	Normal:class 1	Plastic	2	3.0	44,400
Clothes hanger: Umbrella	Normal:class 1	Plastic	15	2.8	151,800

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Shoe rope: 36 inches, White	Normal:class 1	Household	2	3.3	19,500
Shoe rope: 36 inches, Black	Normal:class 1	Household	2	3.3	19,500
Shoe rope: 36 inches, Brown	Normal:class 1	Household	1	3.3	19,500
Shoe rope: 36 inches, Dark brown	Normal:class 1	Household	1	3.3	19,500
Shoe rope: 24 inches, White, Flat	Normal:class 1	Household	2	3.3	19,140
Shoe rope: 24 inches, Black, Flat	Normal:class 1	Household	2	3.3	19,140
Shoe rope: 24 inches, Brown, Flat	Normal:class 1	Household	1	3.3	19,140
Shoe rope: 24 inches, Dark brown, Flat	Normal:class 1	Household	1	3.3	19,140
Padlock: Solo 30mm No.84	Normal:class 1	Household	20	1.3	2,925
Padlock: Solo 50mm	Normal:class 1	Household	20	1.8	6,078
Padlock: black, long 32mm	Normal:class 1	Household	80	0.7	9,880
Padlock: brass, long 32mm	Normal:class 1	Household	60	0.7	10,400
Padlock: gold, short 50mm	Normal:class 1	Household	86	1.6	7,920
Padlock: black, short 32mm	Normal:class 1	Household	80	0.6	6,240
Padlock: Solo 35mm, pack	Normal:class 1	Household	40	1.5	7,020
Padlock: Wolf 25mm	Normal:class 1	Household	100	0.4	7,125
Padlock: Wolf 30mm	Normal:class 1	Household	100	0.5	6,750
Padlock: black, short 50mm 999	Normal:class 1	Household	30	2.0	4,050
Padlock: Wolf 50mm	Normal:class 1	Household	43	1.4	4,950
Padlock: brass, short 20 mm	Normal:class 1	Household	100	0.4	4,875
Padlock: Solo 40mm, pack	Normal:class 1	Household	40	2.0	8,190
Padlock: black, short 25mm 999	Normal:class 1	Household	100	0.4	9,625
Padlock: gold, long 25mm	Normal:class 1	Household	30	0.8	4,560
Padlock: black, short 32mm 999	Normal:class 1	Household	3	20.0	25,947
Padlock: black, short 38mm 999	Normal:class 1	Household	2	20.0	27,945
Padlock: black, short 50mm 5 rings	Normal:class 1	Household	4	21.0	35,280
Padlock: gold, long 50mm	Normal:class 1	Household	2	20.0	21,870
Padlock: gold, short 38mm	Normal:class 1	Household	5	20.0	62,694
Padlock: gold, short 50mm	Normal:class 1	Household	4	21.0	35,280
Padlock: World 50mm	Normal:class 1	Household	3	21.0	46,400
Padlock: Wolf 20mm	Normal:class 1	Household	3	28.0	19,393
Padlock: Wolf 25mm	Normal:class 1	Household	3	21.0	16,926
Padlock: Wolf 30mm	Normal:class 1	Household	2	27.0	21,945
Padlock: Wolf 40mm	Normal:class 1	Household	3	21.0	15,048
Padlock: Wolf 50mm	Normal:class 1	Household	3	25.0	20,441
Padlock: VITA long, 40mm	Normal:class 1	Household	10	3.6	22,770
Padlock: VITA short, 40mm	Normal:class 1	Household	10	3.8	22,770
Padlock: VITA long, 45mm	Normal:class 1	Household	10	4.4	22,770
Padlock: VITA short, 45mm	Normal:class 1	Household	10	4.2	22,770
Padlock: VITA long, 50mm	Normal:class 1	Household	10	5.2	22,770

Table E.1: Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Power plug receptable: 20M, AMC	Normal: class 2	Electrical	3	9.0	80,640
Power plug receptable: 5M, Motto	Normal: class 2	Electrical	20	5.3	192,888
Power plug receptable: 8M, AMC	Normal: class 2	Electrical	8	8.0	96,444
Power plug receptable: Nagas 10M	Normal: class 2	Electrical	10	11.0	204,600
Power plug receptable: Nagas 5M	Normal: class 2	Electrical	10	6.0	204,600
Power plug receptable: Nagas 8M	Normal: class 2	Electrical	10	10.0	204,600
Power line of a frying pan	Normal: class 2	Electrical	4	6.0	58,590
Power line of a flat iron	Normal: class 2	Electrical	4	6.0	58,590
Power line of a pot	Normal: class 2	Electrical	4	5.0	58,590
Plug head: White	Normal: class 2	Electrical	20	5.0	49,680
Plug head: Black	Normal: class 2	Electrical	20	2.2	37,800
Plug Receptable head: Black	Normal: class 2	Electrical	12	3.8	29,160
Light bulb: Superlamp 200W	Normal: class 2	Electrical	20	2.3	252,150
<b>Total: storage area of Electrical category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>10</b>	<b>Total</b>	<b>3,149,017</b>
Fabric Gloves: hot protector	Normal: class 2	Fabric	3	14.0	375,000
Fabric Gloves: white color, yellow rim	Normal: class 2	Fabric	24	6.2	342,000
Fabric Gloves: peacock, long, nylon	Normal: class 2	Fabric	20	4.0	247,500
Rug: round shape	Normal: class 2	Fabric	8	20.0	324,000
Rug: egg shape	Normal: class 2	Fabric	8	20.0	324,000
Rug: small	Normal: class 2	Fabric	8	25.0	338,400
Rug: heart shape	Normal: class 2	Fabric	8	20.0	324,000
Rug: square shape	Normal: class 2	Fabric	8	20.0	264,600
Rug: weaved	Normal: class 2	Fabric	9	25.0	460,800
Full head Hat: A3	Normal: class 2	Fabric	10	10.0	526,500
Full head Hat: Ioinclothes with cap	Normal: class 2	Fabric	3	4.2	43,758
Full head Hat: Ioinclothes	Normal: class 2	Fabric	6	2.7	51,480
<b>Total storage area of Fabric category</b>	<b>Normal: class 2</b>	<b>Average of category</b>	<b>9</b>	<b>Total</b>	<b>3,622,038</b>
Scrubber: Elephant	Normal: class 2	Household	10	6.5	603,057
Scrubber: Diamond	Normal: class 2	Household	15	10.5	1,248,000
Scrubber with Handle: Black	Normal: class 2	Household	20	1.3	147,994
Scrubber: Merbrite, Original	Normal: class 2	Household	24	5.5	875,160
Scrubber: 3M	Normal: class 2	Household	33	4.3	1,587,300
Scrubber: Set 10	Normal: class 2	Household	6	12.0	445,280
Scrubber: Set 11	Normal: class 2	Household	5	18.0	393,300
Scrubber: Set 14	Normal: class 2	Household	6	20.0	271,216
Scrubber: Set 1x3	Normal: class 2	Household	5	4.0	311,688
Feathers stick	Normal: class 2	Household	3	26.0	154,904
Rubber binder: small	Normal: class 2	Household	5	10.0	41,580
Rubber binder: big	Normal: class 2	Household	5	10.0	41,580
Mirror with Swinger	Normal: class 2	Household	2	18.0	66,240

Table E.1:Factor to Determine storage location for normal item (Cont.)

English Name	Factor 1	Factor 2	Factor 3	Factor 4	Storage space for Planning quantity
	Group of item	Category of item	Turn-over rate	Weight	cubic space(cm3)
Clothes hanger: red heart-shaped, 55	Normal: class 1	Plastic	40	3.6	288,902
Fabric pincher: 16 pieces, Ploy	Normal: class 1	Plastic	30	4.0	119,784
Fabric pincher: 18 pieces, CS	Normal: class 1	Plastic	43	2.4	88,128
Fabric pincher: 18pieces, turbine	Normal: class 1	Plastic	60	2.6	88,128
Fabric pincher: 18 pieces, round shape, Merry	Normal: class 1	Plastic	10	4.4	117,612
Fabric pincher: Japanesee	Normal: class 1	Plastic	20	2.5	151,200
Fabric pincher: Big size	Normal: class 1	Plastic	15	3.0	126,672
Shower cap: finesse, small	Normal: class 1	Plastic	4	5.5	56,250
Shower cap: finesse, big	Normal: class 1	Plastic	4	9.0	60,840
Shower cap: small	Normal: class 1	Plastic	4	6.0	62,500
Shower cap: big	Normal: class 1	Plastic	4	10.0	62,500
Toothpast squeezer: murky	Normal: class 1	Plastic	5	5.5	62,100
Toothpast squeezer: transparency	Normal: class 1	Plastic	4	5.5	41,400
Photo Album: Small size	Normal: class 1	Plastic	7	1.6	26,100
Back scratching stick	Normal: class 1	Plastic	10	5.3	92,400
Plastic bag with lock	Normal: class 1	Plastic	10	2.4	99,876
Water sprayer: 590	Normal: class 1	Plastic	12	1.8	160,056
Water sprayer: Taiwan, Transparency	Normal: class 1	Plastic	18	1.4	199,584
Water sprayer: foggy	Normal: class 1	Plastic	50	1.3	512,325
Soap box: 2 slots	Normal: class 1	Plastic	12	4.3	176,250
Basket: Spoon, one slot	Normal: class 1	Plastic	2	5.0	27,608
Cup: 45 Mitsu with Handle	Normal: class 1	Plastic	30	1.8	349,440
<b>Total storage area of Plastic category</b>	<b>Normal: class 1</b>	<b>Average of category</b>	<b>18</b>	<b>Total</b>	<b>5,400,366</b>

Table E.2: Factor to Determine fixed storage location for special item

English Name	Storage space for Planning quantity	Factor 1	Factor 2	Factor 3	Factor 4
	cubic space(cm3)	Group of item	Category of item	Turn-over rate / month	Weight
Cleaning sponge: Tree, M	989,604.00	Sp - size	Household	7.5	2.7
Floor cleaning sponge: Rose	1,132,200.00	Sp - size	Household	15.0	2.9
Cleaning sponge: Hama, L	583,200.00	Sp - size	Household	3.6	3.1
Cleaning sponge with scrubber: Modern	1,005,480.00	Sp - size	Household	30.0	5.5
Scrubber: Bigsize 1mx2m	630,000.00	Sp - size	Household	6.0	10.0
Floor cleaning sponge: Tree	1,132,200.00	Sp - size	Household	20.0	20.0
<b>Total space of category</b>	<b>5,472,684.00</b>	<b>Sp - size</b>	<b>Avg. of category</b>	<b>13.7</b>	<b>7.4</b>
One baht cotton wool	1,680,000.00	Sp - size	Personal care	4.0	7.0
One baht cotton wool( 2nd location)	1,680,000.00	Sp - size	Personal care	4.0	7.0
Ten baht cotton wool	810,000.00	Sp - size	Personal care	5.0	8.0
27 baht cotton wool	466,240.00	Sp - size	Personal care	10.0	12.0
Shower sponge with Shower Cream	2,640,000.00	Sp - size	Personal care	4.0	12.0
<b>Total space of category</b>	<b>7,276,240.00</b>	<b>Sp - size</b>	<b>Avg. of category</b>	<b>5.4</b>	<b>9.2</b>
Cone No4	276,000.00	Sp - size	Plastic	6.0	2.0
Cone No5	181,440.00	Sp - size	Plastic	5.0	3.0
Bath room cleaning brush: Sack	270,000.00	Sp - size	Plastic	6.0	5.0
Water canteen: n-๘	387,000.00	Sp - size	Plastic	6.0	5.3
Broom: water Samor	331,500.00	Sp - size	Plastic	12.0	12.0
Water sprayer: Bone shape, Murky	828,000.00	Sp - size	Plastic	5.0	12.0
Water sprayer: Bone shape, transparency	993,600.00	Sp - size	Plastic	7.5	12.0
Chair: M, Big	500,580.00	Sp - size	Plastic	3.0	22.0
<b>Total space of category</b>	<b>3,768,120.00</b>	<b>Sp - size</b>	<b>Avg. of category</b>	<b>6.3</b>	<b>9.2</b>
<b>Total space of group</b>	<b>16,517,044.00</b>	<b>Sp - size</b>	<b>Avg. of group</b>	<b>8.4</b>	<b>8.6</b>
Knife: Kiwi 501	25,380.00	Sp - Turn over	Cooking	150.0	0.4
Knife: Kiwi 502	25,380.00	Sp - Turn over	Cooking	150.0	0.4
<b>Total space of category</b>	<b>50,760.00</b>	<b>Sp - Turn over</b>	<b>Avg. of category</b>	<b>150.0</b>	<b>0.4</b>
Padlock: gold, short 38mm	36,855.00	Sp - Turn over	Household	480.0	1.0
Padlock: brass, short 32mm	24,960.00	Sp - Turn over	Household	342.9	0.6
Padlock: Solo 25mm, pack	16,500.00	Sp - Turn over	Household	200.0	0.3
Padlock: Wolf 20mm	13,500.00	Sp - Turn over	Household	150.0	0.4
Padlock: black, long 38mm	21,060.00	Sp - Turn over	Household	128.6	1.0
Padlock: black, short 38 mm	23,400.00	Sp - Turn over	Household	120.0	1.0
Padlock: brass, long 38mm	10,091.25	Sp - Turn over	Household	60.0	1.0
Padlock: Wolf 40mm	2,900.63	Sp - Turn over	Household	42.9	0.8
Padlock: gold, long 50mm	7,488.00	Sp - Turn over	Household	42.9	1.7
Padlock: black, long 50mm	5,200.00	Sp - Turn over	Household	30.0	2.2
<b>Total space of category</b>	<b>161,954.88</b>	<b>Sp - Turn over</b>	<b>Avg. of category</b>	<b>159.7</b>	<b>1.0</b>
Clothes hanger: 5 rings	1,136,520.00	Sp - Turn over	Plastic	600.0	4.9
Clothes hanger: 5 rings(2nd location)	1,136,520.00	Sp - Turn over	Plastic	600.0	4.9
Clothes hanger: 3 rings	1,335,840.00	Sp - Turn over	Plastic	600.0	8.0
Clothes hanger: 3 rings(2nd location)	1,335,840.00	Sp - Turn over	Plastic	600.0	8.0
Clothes hanger: 3 rings(3rd location)	1,335,840.00	Sp - Turn over	Plastic	600.0	8.0
<b>Total space of category</b>	<b>6,280,560.00</b>	<b>Sp - Turn over</b>	<b>Avg. of category</b>	<b>600.0</b>	<b>6.5</b>
<b>Total space of group</b>	<b>6,493,274.88</b>	<b>Sp - Turn over</b>	<b>Avg. of group</b>	<b>268.6</b>	<b>2.3</b>
Mentholated ointment	138,966.00	Sp - High Weight	Chemical product	4.0	35.0
<b>Total space of category</b>	<b>138,966.00</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>4.0</b>	<b>35.0</b>
Clothes for floor cleaning( Mob)	300,000.00	Sp - High Weight	Fabric	7.5	36.0

Table E.2: Factor to Determine fixed storage location for special item (Cont.)

English Name	Storage space for Planning quantity	Factor 1	Factor 2	Factor 3	Factor 4
	cubic space(cm3)	Group of item	Category of item	Turn-over rate / month	Weight
<b>Total space of category</b>	<b>300,000.00</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>7.5</b>	<b>36.0</b>
Bottle opener: 200	180,000.00	Sp - High Weight	Household	1.3	35.0
Bottle opener: 900	180,000.00	Sp - High Weight	Household	1.3	35.0
Wine opener: 800	950,400.00	Sp - High Weight	Household	1.0	45.0
Wine opener: 800(2nd location)	950,400.00	Sp - High Weight	Household	1.0	45.0
Wine opener: 800(3rd location)	950,400.00	Sp - High Weight	Household	1.0	45.0
Nail cutter: 211	95,220.00	Sp - High Weight	Household	3.3	30.0
Nail cutter: 602	85,425.00	Sp - High Weight	Household	3.3	30.0
<b>Total space of category</b>	<b>3,391,845.00</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>1.8</b>	<b>37.9</b>
Pingpong ball: white	235,161.00	Sp - High Weight	Miscellaneous	1.2	48.0
Pingpong ball: orande	235,161.00	Sp - High Weight	Miscellaneous	2.4	48.0
Whetstone	211,990.00	Sp - High Weight	Miscellaneous	6.7	31.0
<b>Total space of category</b>	<b>682,312.00</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>3.4</b>	<b>42.3</b>
Book: tearable papert, without line,Small	101,840.00	Sp - High Weight	Office	2.4	35.0
Book: tearable papert, Small	101,840.00	Sp - High Weight	Office	3.0	35.0
<b>Total space of category</b>	<b>203,680.00</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>2.7</b>	<b>35.0</b>
Nail polisher: Small size	83,824.00	Sp - High Weight	Personal care	2.0	30.0
Olive oil: Small size	83,824.00	Sp - High Weight	Personal care	3.0	30.0
Razor Blade: Feather	110,745.00	Sp - High Weight	Personal care	2.0	30.0
Clipping Blade: Sakura	36,036.00	Sp - High Weight	Personal care	2.0	30.0
Clipping Blade: Dragonfly	99,000.00	Sp - High Weight	Personal care	5.0	30.0
Short Clipping Blade: Dragonfly	224,532.00	Sp - High Weight	Personal care	10.0	30.0
Nail polisher: Square bottle	733,623.00	Sp - High Weight	Personal care	12.0	34.0
Nail polisher: Square bottle(2nd location)	733,623.00	Sp - High Weight	Personal care	12.0	34.0
<b>Total space of category</b>	<b>2,105,207.00</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>6.0</b>	<b>31.0</b>
Spoon: short, Zebra	395,480.25	Sp - High Weight	Plastic	20.0	32.0
<b>Total space of category</b>	<b>395,480.25</b>	<b>Sp - High Weight</b>	<b>Avg. of category</b>	<b>20.0</b>	<b>32.0</b>
<b>Total space of group</b>	<b>7,217,490.25</b>	<b>Sp - High Weight</b>	<b>Avg. of group</b>	<b>4.7</b>	<b>35.3</b>
Mop with round fabric	201,600.00	Sp- Shaft shape	Household	12.0	8.5
Mop with round fabric(2nd location)	201,600.00	Sp- Shaft shape	Household	12.0	8.5
Aluminium Mop	366,080.00	Sp- Shaft shape	Household	24.0	4.0
Aluminium Mop (2nd location)	366,080.00	Sp- Shaft shape	Household	24.0	4.0
Aluminium Mop (3rd location)	366,080.00	Sp- Shaft shape	Household	24.0	4.0
<b>Total space of category</b>	<b>1,501,440.00</b>	<b>Sp- Shaft shape</b>	<b>Avg. of category</b>	<b>19.2</b>	<b>5.8</b>
<b>Total space of group</b>	<b>1,501,440.00</b>	<b>Sp- Shaft shape</b>	<b>Avg. of group</b>	<b>18.0</b>	<b>6.3</b>



**Table E.3: The allocation system code**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Mosquitoes wiping joss stick: Dragon	R	B	08-10	N	L
Mosquitoes wiping reagent: Ko-Yo-15	R	B	08-10	N	H
Refilled Gas: Buca, Small	R	B	08-10	M	H
A gas oven: lighter grade A	R	B	08-10	M	M
A gas oven: lighter grade C	R	B	08-10	N	M
Indigo: Big bottle, Crown	R	B	08-10	F	M
Indigo: Small bottle, Chicken	R	B	08-10	F	L
Indigo: Big bottle, Chicken	R	B	08-10	F	H
Indigo:Liquid, Chicken	R	B	08-10	F	L
Indigo: Medium bottle, Chicken	R	B	08-10	F	L
Indigo: big square shape, Crown	R	B	08-10	M	L
Fabric Softener: Pink	R	B	08-10	N	L
Fabric Softener: Sky-blue	R	B	08-10	N	L
Fabric cleaning soap: 3 stars	R	B	08-10	F	L
Fabric cleaning soap: Carus crane	R	B	08-10	F	L
Shoe polish: big, black	R	B	08-10	M	M
Leather polish: Kiwi, Black	R	B	08-10	M	M
Leather polish: Kiwi, Classic Black	R	B	08-10	M	M
Leather polish: Kiwi, Brown	R	B	08-10	M	M
Leather polish: Kiwi, Classic Brown	R	B	08-10	M	M
Wax for Leather Shoe: Small	R	B	08-10	N	H
Dish liquid cleanser: Sunny Wash 800cc	R	B	08-10	N	L
Flipper used for frying: with holes	R	B	59-60	F	L
Flipper used for frying:	R	B	59-60	F	L
Ladle: Colorful handle	R	B	59-60	M	L
Ladle: Chinese pattern	R	B	59-60	M	L
Knife: Kiwi 246	R	B	59-60	M	H
Knife: Vegetable, Wildman 1 blade	R	B	59-60	M	M
Knife: Vegetable, Wildman 2 blades	R	B	59-60	M	M
Knife: Vegetable, Wildman ,small	R	B	59-60	M	H
Aluminium foil: long	R	B	59-60	M	M
Aluminium foil: short	R	B	59-60	M	H
Flashlight, Chinese, Colorful plastic	R	B	41-43	M	L
Flashlight, Tiger 300	R	B	41-43	M	L
Flashlight, Tiger 500	R	B	41-43	F	L
Flashlight, Tiger 700	R	B	41-43	F	L
Power plug receptable: 10M, AMC	R	B	41-43	M	L
Power plug receptable: 10M, Motto	R	B	41-43	N	L
Power plug receptable: 20M, AMC	R	B	41-43	F	M
Power plug receptable: 5M, Motto	R	B	41-43	N	M
Power plug receptable: 8M, AMC	R	B	41-43	M	M
Power plug receptable: Nagas 10M	R	B	41-43	M	L
Power plug receptable: Nagas 5M	R	B	41-43	M	M
Power plug receptable: Nagas 8M	R	B	41-43	M	L
Power line of a frying pan	R	B	41-43	M	M
Power line of a flat iron	R	B	41-43	F	M
Power line of a pot	R	B	41-43	F	H
Plug head: White	R	B	41-43	N	H
Plug head: Black	R	B	41-43	N	H
Plug Receptable head: Black	R	B	41-43	N	H

Table E.3: The allocation system code (Cont.)

Item Identifier	Allocation system code				
Light bulb: Superlamp 200W	R	B	41-43	N	H
Fabric Gloves: hot protector	R	B	44-46	F	L
Fabric Gloves: white color, yellow rim	R	B	44-46	N	M
Fabric Gloves: peacock, long, nylon	R	B	44-46	N	H
Rug: round shape	R	B	44-46	M	L
Rug: egg shape	R	B	44-46	M	L
Rug: small	R	B	44-46	M	L
Rug: heart shape	R	B	44-46	M	L
Rug: square shape	R	B	44-46	M	L
Rug: weaved	R	B	44-46	M	L
Full head Hat: A3	R	B	44-46	M	L
Full head Hat: loinclothes with cap	R	B	44-46	F	H
Full head Hat: loinclothes	R	B	44-46	M	H
Scrubber: Elephant	R	B	64-82	M	M
Scrubber: Diamond	R	B	64-82	N	L
Scrubber with Handle: Black	R	B	64-82	N	H
Scrubber: Merbrite, Original	R	B	64-82	N	M
Scrubber: 3M	R	B	64-82	N	H
Scrubber: Set 10	R	B	64-82	M	L
Scrubber: Set 11	R	B	64-82	M	L
Scrubber: Set 14	R	B	64-82	M	L
Scrubber: Set 1x3	R	B	64-82	M	H
Feathers stick	R	B	64-82	F	L
Rubber binder: small	R	B	64-82	M	L
Rubber binder: big	R	B	64-82	M	L
Mirror with Swinger	R	B	64-82	F	L
Mirror with Plastic frame	R	B	64-82	N	M
Mirror: Flower 12x16 ,hang	R	B	64-82	M	M
Mirror: Flower 14x20 ,hang	R	B	64-82	F	L
Can opener: 5 rings	R	B	64-82	M	H
Nail cutter: 309	R	B	64-82	M	L
Nail cutter: 600	R	B	64-82	M	L
Shoe rope: 24 inches, White, Big	R	B	64-82	F	H
Shoe rope: 24 inches, Black, Big	R	B	64-82	F	H
Shoe rope: 24 inches, Brown, Big	R	B	64-82	F	H
Shoe rope: 24 inches, Dark brown, Big	R	B	64-82	F	H
Shoe rope: 36 inches, White, Big	R	B	64-82	F	M
Shoe rope: 36 inches, Black, Big	R	B	64-82	F	M
Shoe rope: 36 inches, Brown, Big	R	B	64-82	F	M
Shoe rope: 36 inches, Dark brown, Big	R	B	64-82	F	M
Shoe rope: 42 inches, White, Big	R	B	64-82	F	M
Shoe rope: 42 inches, Black, Big	R	B	64-82	F	M
Shoe rope: 42 inches, Brown, Big	R	B	64-82	F	M
Shoe rope: 42 inches, Dark brown, Big	R	B	64-82	F	M
Shoe rope: 60 inches, White, Big	R	B	64-82	F	L
Shoe rope: 60 inches, Black, Big	R	B	64-82	F	L
Shoe rope: 60 inches, Brown, Big	R	B	64-82	F	L
Shoe rope: 36 inches, White, Flat	R	B	64-82	F	H
Shoe rope: 36 inches, Black, Flat	R	B	64-82	F	H
Shoe rope: 36 inches, Brown, Flat	R	B	64-82	F	H

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Shoe rope: 36 inches, Dark brown, Flat	R	B	64-82	F	H
Shoe rope: 42 inches, White, Flat	R	B	64-82	M	M
Shoe rope: 42 inches, Mix, Flat	R	B	64-82	F	M
Shoe rope: 42 inches, Black, Flat	R	B	64-82	M	M
Shoe rope: 42 inches, Brown, Flat	R	B	64-82	F	M
Shoe rope: 42 inches, Dark brown, Flat	R	B	64-82	F	M
Shoe rope: 48 inches, White, Flat	R	B	64-82	F	M
Shoe rope: 48 inches, Black, Flat	R	B	64-82	F	M
Shoe rope: 48 inches, Brown, Flat	R	B	64-82	F	M
Shoe rope: 60 inches, White, Flat	R	B	64-82	F	M
Shoe rope: 60 inches, Black, Flat	R	B	64-82	F	M
Shoe rope: 60 inches, Brown, Flat	R	B	64-82	F	M
Padlock: black, long 38mm	R	B	64-82	F	L
Padlock: black, short 50mm 5 rings	R	B	64-82	F	L
Padlock: gold, long 32mm	R	B	64-82	F	L
Padlock: gold, short 25mm	R	B	64-82	M	L
Padlock: gold, short 32mm	R	B	64-82	F	L
Padlock: gold, long 38mm 5 rings	R	B	64-82	F	L
Hot water pouch: stripe pattern, small	R	B	64-82	M	L
Hot water pouch: small	R	B	64-82	N	L
Hot water pouch: Big, Kangaroo	R	B	64-82	F	L
Thread: 10 baht set, White-Black	R	B	64-82	M	H
Thread: Pink set	R	B	64-82	F	L
Thread: A Mix	R	B	64-82	N	H
Thread: A White	R	B	64-82	N	H
Thread: A White-Black	R	B	64-82	N	H
Thread: A Dark gray	R	B	64-82	N	H
Thread: A Black	R	B	64-82	N	H
Thread: 1 baht, YNC White	R	B	64-82	M	M
Thread: 1 baht, YNC Dark gray	R	B	64-82	M	M
Thread: 1 baht, YNC Mix	R	B	64-82	M	M
Thread: 1 baht, YNC Black	R	B	64-82	M	M
Thread: 1 baht, YNC Yellow	R	B	64-82	M	M
Brooch in Pack	R	B	64-82	F	L
Brooch: grade A	R	B	64-82	M	H
Brooch: Lucky	R	B	64-82	M	H
Scrubber with sponge: Merrybrit, Twin	R	B	64-82	N	H
Cleaning sponge: 3M, 2 purpose	R	B	64-82	N	H
Cement cleaning Sponge: Tree	R	B	64-82	N	H
Feet cleaning sponge: Jolly	R	B	64-82	N	H
Cleaning sponge with net: Modern	R	B	64-82	M	M
Cleaning sponge with net:House wife	R	B	64-82	N	H
Cleaning sponge with net: Merrysponge	R	B	64-82	N	H
Cleaning sponge: Tree, L	R	B	64-82	N	H
Cleaning sponge: Tree, S	R	B	64-82	M	H
Cleaning frill: Kilo	R	B	64-82	M	L
Cleaning frill: Dozen pack	R	B	64-82	N	H
Cleaning stainless frill: Big brite	R	B	64-82	N	M
Cleaning stainless frill: Poly	R	B	64-82	N	H
Mothball: ATM, big	R	B	64-82	N	L

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Mothball: Kilo	R	B	64-82	N	L
Mothball: Jumbo size	R	B	64-82	M	L
Mothball: Big pack 1x2	R	B	64-82	M	M
Rubber gloves: Dragon, L	R	B	64-82	M	L
Rubber gloves: Dragon, M	R	B	64-82	M	L
Rubber gloves: Dragon, S	R	B	64-82	M	L
Rubber gloves: OK, 7.5, cream color	R	B	64-82	M	L
Rubber gloves: OK, 7.5, orange color	R	B	64-82	M	L
Rubber gloves: OK, 8.5, cream color	R	B	64-82	M	L
Rubber gloves: OK, 8.5, orange color	R	B	64-82	M	L
Rubber gloves: PVC, White, M	R	B	64-82	M	L
Wall hooker 1x3	R	B	64-82	M	M
Wall hooker 1x8	R	B	64-82	M	M
Wall hooker: Fancy	R	B	64-82	F	L
Wall hooker: 3 in a row	R	B	64-82	M	H
Wall hooker: 4 in a row	R	B	64-82	M	M
Wall hooker: 5 in a row	R	B	64-82	M	M
Nipple: Pegen, L	R	B	64-82	F	L
Nipple: Pegen, M	R	B	64-82	F	L
Nipple: Pegen, S	R	B	64-82	F	L
Toothpick 1x10	R	B	64-82	N	L
Toothpick 2in1	R	B	64-82	M	L
Toothpick: Bandang, Medium	R	B	64-82	N	L
Toothpick : Kilo	R	B	64-82	F	L
Shoe supporter: Man, 10 kgs	R	B	64-82	F	M
Shoe supporter: Lady, 10 kgs	R	B	64-82	F	M
Screw driver 2 pieces in set	R	B	88-89	F	L
Screw driver for watch	R	B	88-89	M	L
Screw driver with switching head	R	B	88-89	F	L
Adhesive tape for wiring( Black) TOV	R	B	88-89	M	M
shrink adhesive tape 1 inche	R	B	88-89	M	H
shrink adhesive tape 3/4 inche	R	B	88-89	M	H
shrink adhesive tape 1 inche big size	R	B	88-89	M	H
shrink adhesive tape 1.5 inche big size	R	B	88-89	M	H
shrink adhesive tape 2 inche big size	R	B	88-89	M	H
shrink adhesive tape 3/4 inche big size	R	B	88-89	M	H
Lubricant oil for machinery: round bottle	R	B	88-89	N	L
Lubricant oil for machinery: flat bottle	R	B	88-89	M	L
Painting brush: No.1	R	B	88-89	M	H
Painting brush: No.1.5	R	B	88-89	M	H
Painting brush: No.2.5	R	B	88-89	F	H
Painting brush: No.3	R	B	88-89	F	H
Painting brush: No.4	R	B	88-89	F	H
Pumping tube : plastic	R	B	88-89	M	L
Dog chain: 20x6	R	B	61-63	F	L
Dog chain: 22x6	R	B	61-63	F	L
Dog chain: 25x6	R	B	61-63	F	L
Dog chain: 30x6	R	B	61-63	F	L
Dog chain: 35x6	R	B	61-63	F	L
Dog chain: 45x6	R	B	61-63	F	L

**Table E.3: The allocation system code (Cont.)**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Badminton: ball	R	B	61-63	M	M
paper card: gold seam 007	R	B	61-63	N	L
paper card:Thai	R	B	61-63	N	L
plastic card:Winner 222	R	B	61-63	F	L
Elastic fabric 10	R	B	61-63	F	L
Elastic fabric 11	R	B	61-63	F	L
Elastic fabric 14	R	B	61-63	F	L
Elastic fabric 16	R	B	61-63	F	L
Elastic fabric 4	R	B	61-63	F	H
Elastic fabric 6	R	B	61-63	F	M
Elastic fabric 8	R	B	61-63	F	M
Elastic fabric 1 inche wide	R	B	61-63	M	L
Elastic fabric 3/4 inche wide	R	B	61-63	M	M
Mosquitoes wiping stick container	R	B	61-63	N	L
Mosquitoes wiping stick container: long	R	B	61-63	F	M
Buddism Ordaining set: Red	R	B	61-63	N	H
Buddism Ordaining set: Yellow	R	B	61-63	N	H
Artificial clay: small size	R	B	61-63	N	M
Pot mender	R	B	61-63	M	H
Magnifying glass	R	B	61-63	F	L
Tape Cleanser set	R	B	61-63	F	H
CD Cleanser set	R	B	61-63	M	M
Steel pot stand	R	B	61-63	M	L
Price tag Shooter	R	B	82-87	M	L
Clipboard A5	R	B	82-87	M	L
Stapler	R	B	82-87	M	M
Scissors: Rose, 304	R	B	82-87	M	L
Scissors: Bee, 304	R	B	82-87	F	L
Scissors: Rubber handle size 3	R	B	82-87	F	L
Scissors: 8 inches, 999	R	B	82-87	F	L
Scissors: paper set	R	B	82-87	N	L
Scissors: Jusmine	R	B	82-87	M	L
Super Glue: Kenji	R	B	82-87	M	M
Super Glue: Chineese	R	B	82-87	M	M
Super Glue: Ateco	R	B	82-87	N	M
Hot Stick Glue: Small	R	B	82-87	M	L
Hot Stick Glue: Big	R	B	82-87	M	L
Latex glue 10 Baht	R	B	82-87	M	L
Latex glue 5 Baht	R	B	82-87	M	L
CutterP1 with Blade	R	B	82-87	M	M
Stainless Cutter L-120	R	B	82-87	M	M
Cutter: 3 pieces	R	B	82-87	N	M
Envelope: White long	R	B	82-87	F	L
Envelope: Standard size, Cartoon	R	B	82-87	F	L
Envelope: Standard size, Color	R	B	82-87	M	L
Envelope: Cartoon pattern	R	B	82-87	F	L
Envelope: White stripe	R	B	82-87	N	L
Envelope: airplane pattern	R	B	82-87	F	L
Envelope: Pink stripe	R	B	82-87	M	L
Envelope: National flag pattern	R	B	82-87	F	L

**Table E.3: The allocation system code (Cont.)**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Clipper: Black 108	R	B	82-87	M	L
Clipper: Black 109	R	B	82-87	M	L
Tape: 2 side glue, Loise size 1x1	R	B	82-87	N	H
Tape: Osaka 1meter	R	B	82-87	M	M
Tape: Box closer: murky color	R	B	82-87	N	H
Tape: Box closer: transparency	R	B	82-87	N	H
Tape: transparency 1/2 inche 10 yard	R	B	82-87	M	L
Tape: transparency 1/2 inche 36 yard, big	R	B	82-87	N	H
Tape: transparency 1/2 inche 3 yards	R	B	82-87	M	M
Tape: transparency 1/2 inche 72 yard	R	B	82-87	M	L
Tape: transparency 1 inche 36 yard	R	B	82-87	M	H
Tape: transparency 3/4 inche 36 yard	R	B	82-87	M	H
Tape: transparency 3/4 inche 72 yard	R	B	82-87	M	L
Pen: Lancer 626 Blue	R	B	82-87	F	M
Pen: Lancer 813 Black	R	B	82-87	F	M
Pen: Lancer 813 Red	R	B	82-87	F	M
Pen: Lancer 813 Blue	R	B	82-87	F	M
Pen: Lancer 825 Black	R	B	82-87	M	M
Pen: Lancer 825 Red	R	B	82-87	M	M
Pen: Lancer 825 Blue	R	B	82-87	M	M
Pen: Lancer 878 Black	R	B	82-87	M	M
Pen: Lancer 878 Red	R	B	82-87	M	M
Pen: Lancer 878 Blue	R	B	82-87	M	M
Pen: Lancer 915 Black	R	B	82-87	F	M
Pen: Lancer 915 Red	R	B	82-87	F	M
Pen: Lancer 915 Blue	R	B	82-87	F	M
Pen: Diamond	R	B	82-87	M	M
chemical pen: pilot, small, Black	R	B	82-87	F	L
chemical pen: pilot, small, Red	R	B	82-87	F	L
chemical pen: pilot, small, Blue	R	B	82-87	F	L
Wooden Pencil	R	B	82-87	F	L
Pencil: muti-head	R	B	82-87	F	L
Meji color pen	R	B	82-87	F	L
Wooden color short pen	R	B	82-87	F	L
Plastic binder	R	B	82-87	M	H
Book: tearable papert, Big	R	B	82-87	M	L
Book: tearable papert, without line,Big	R	B	82-87	M	L
Hair Jel: Jenny	R	B	47-58	F	L
Nail polisher: Big size	R	B	47-58	N	L
Olive oil: Big size	R	B	47-58	M	L
Nail cleaning brush: flat iron shape	R	B	47-58	M	H
Nail cleaning brush: Big, transparent	R	B	47-58	M	H
Razor Blade: Atta	R	B	47-58	M	L
Razor Blade: Dorgo	R	B	47-58	M	L
Razor : S.Doll	R	B	47-58	M	L
Razor : 4 pieces in one pack	R	B	47-58	F	L
Tradition razor	R	B	47-58	M	L
Razor : Double blades SuperMax	R	B	47-58	M	M
Razor :Doctorll	R	B	47-58	M	M
Razor : single blades Gillette Click	R	B	47-58	N	L

**Table E.3: The allocation system code (Cont.)**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Razor : Gillette Thin 2	R	B	47-58	N	H
Razor : with Nail cutter	R	B	47-58	M	M
Razor : Karat	R	B	47-58	M	M
Razor : Feather	R	B	47-58	F	H
Razor : with 2 blades	R	B	47-58	F	L
Razor : Fancy	R	B	47-58	N	M
Razor : Green Sayuri	R	B	47-58	F	M
Razor : Yellow Sayuri	R	B	47-58	F	M
Toothbrush: Soft, transparent Eastman	R	B	47-58	N	L
Toothbrush: 3 in one pack JGA, turbid	R	B	47-58	F	L
Toothbrush: 3 in one pack JGA, transparent	R	B	47-58	F	L
Toothbrush: Slim Victory	R	B	47-58	M	H
Toothbrush: Chinese, Kid	R	B	47-58	F	L
Toothbrush: Chinese, Adult 650	R	B	47-58	F	L
Toothbrush: Chinese, Adult 940	R	B	47-58	F	L
Toothbrush: CASA, 203	R	B	47-58	M	L
Toothbrush: CASA, 204	R	B	47-58	M	L
Toothbrush: CASA, 205	R	B	47-58	M	L
Toothbrush: CASA, 207	R	B	47-58	M	L
Toothbrush: CASA, 208	R	B	47-58	M	L
Toothbrush: CASA, 210	R	B	47-58	M	L
Toothbrush: JAGA, 674	R	B	47-58	M	L
Toothbrush: JAGA, 690	R	B	47-58	M	L
Toothbrush: JAGA, 698	R	B	47-58	M	L
Toothbrush: JAGA, 699	R	B	47-58	M	L
Toothbrush: JAGA, 739	R	B	47-58	M	L
Toothbrush: JAGA, 740	R	B	47-58	M	L
Toothbrush: OSAKA, 204	R	B	47-58	M	M
Toothbrush: OSAKA, 205	R	B	47-58	M	M
Toothbrush: OSAKA, 206	R	B	47-58	M	M
Toothbrush: Kid, Komo	R	B	47-58	M	M
Cotton wool: Ambulance bus	R	B	47-58	M	M
Cotton wool: Shell, pot, JoJo	R	B	47-58	N	L
Cotton buts: 50 pieces in pack	R	B	47-58	N	L
Cotton buts: 100 pieces in pack	R	B	47-58	N	L
Cotton buts: Fancy Pot 2 slots	R	B	47-58	M	L
Cotton buts: Fancy Jumbo Shell Pot	R	B	47-58	F	L
Cotton buts: Fancy Giant size pot	R	B	47-58	N	L
Cotton buts: Square box, pineapple	R	B	47-58	M	L
Cotton buts: transparent small size pot	R	B	47-58	M	M
Cotton buts: 100 pieces in pack	R	B	47-58	M	M
Cotton buts: 100 pieces in pack	R	B	47-58	F	M
Soap: Ginger	R	B	47-58	M	L
Soap: Small Cucumber	R	B	47-58	F	M
Soap: Laura	R	B	47-58	M	L
Soap: Big Tamamrine	R	B	47-58	F	L
Shower sponge : Jolly 001	R	B	47-58	F	H
Shower sponge : Jolly 002	R	B	47-58	M	H
Shower sponge : Jolly 003	R	B	47-58	F	H
Shower sponge : Jolly 004	R	B	47-58	N	H

Table E.3: The allocation system code (Cont.)

Item Identifier	Allocation system code
Plastic spoon: long	R B 11-40 F M
Plastic spoon: short	R B 11-40 M M
Plastic fork: short	R B 11-40 F M
Spoon: Panda, short	R B 11-40 N L
Chopstick	R B 11-40 F L
Plastic bucket: Black 16	R B 11-40 N M
Plastic bucket: Black 18	R B 11-40 N M
Plastic bucket: 3.5	R B 11-40 M H
Plastic bucket: Yellow 2.5	R B 11-40 M H
Plastic bucket: Yellow 3.5	R B 11-40 M H
Plastic bucket: Yellow 4.5	R B 11-40 M M
Fabric cleaning Brush:Nylon, flat iron,china	R B 11-40 M L
Brush: Nylon, Color	R B 11-40 M H
Fabric cleaning Brush:Eastman 2 colors	R B 11-40 N L
Fabric cleaning Brush:Eastman, Bone	R B 11-40 N L
Fabric cleaning Brush:Rainbow, Samor	R B 11-40 N L
Brush: Rose, Milk color	R B 11-40 N M
Brush: Rose, Transparent color	R B 11-40 N H
Fabric cleaning Brush:003	R B 11-40 N M
Fabric cleaning Brush:707	R B 11-40 M M
Fabric cleaning Brush:JCJ	R B 11-40 N H
Fabric cleaning Brush:031	R B 11-40 N H
Fabric cleaning Brush:Nylon 888	R B 11-40 M M
Fabric cleaning Brush:Samor, White fiber	R B 11-40 N L
Brush: Black meal of coconut	R B 11-40 M H
Brush: Brown meal of coconut	R B 11-40 N H
Wooden Brush: Rose, Clorful fiber	R B 11-40 N M
Pan cleaning brush: meal of coconut 2014	R B 11-40 N H
Brush: Brass 5 rows	R B 11-40 M H
Brush: Brass 6 rows	R B 11-40 F M
Brush: Brass 7 rows	R B 11-40 F M
Brush: Brass,3 Roses	R B 11-40 N M
Brush: Brass,Tiger	R B 11-40 N H
Brush: Brass,Coin	R B 11-40 N H
Bath roon cleaning brush: Hama	R B 11-40 M M
Bath roon cleaning brush: Fish	R B 11-40 M L
Bath roon cleaning brush	R B 11-40 N H
Shoe brush: Herping	R B 11-40 M L
Bottle cleaning brush: Twin head	R B 11-40 F H
Broom: water broomy	R B 11-40 N H
trash dipper: grade A	R B 11-40 N M
trash dipper: small size 345	R B 11-40 N M
trash dipper with handle slot: grade A	R B 11-40 M H
Fabric Hanger: Big flowers	R B 11-40 M H
Fabric Hanger: Green flowers	R B 11-40 M H
Fabric Hanger: Daily	R B 11-40 M H
Fabric Hanger: Big Bee	R B 11-40 F M
Shoes hanger	R B 11-40 M M
Clothes hanger: 222 ( wire)	R B 11-40 N M
Clothes hanger: 222 ,plastic	R B 11-40 N M



**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Clothes hanger: No.799	R	B	11-40	N	L
Clothes hanger: PF221	R	B	11-40	N	H
Clothes hanger: Round Shape	R	B	11-40	M	H
Clothes hanger: C1	R	B	11-40	N	H
Clothes hanger: 5 holes	R	B	11-40	M	H
Clothes hanger: 599, Black	R	B	11-40	M	M
Clothes hanger: red heart-shaped, 99	R	B	11-40	N	H
Clothes hanger: Square, Twin	R	B	11-40	N	H
Clothes hanger: Square Mini	R	B	11-40	F	H
Clothes hanger: Aluminium, 639	R	B	11-40	N	H
Clothes hanger: Aluminium, 646	R	B	11-40	N	M
Fabric pincher: 24 pieces, Put	R	B	11-40	N	H
Fabric pincher: 30 pieces, CS	R	B	11-40	N	H
Fabric pincher: 30 pieces, Put	R	B	11-40	N	H
Fabric pincher: 18 pieces, round shape, Flower	R	B	11-40	N	H
Fabric pincher: Wooden	R	B	11-40	N	L
Shower cap: cartoon pattern, small	R	B	11-40	M	M
Shower cap: cartoon pattern, big	R	B	11-40	M	M
Comb: grade A No.801	R	B	11-40	M	M
Comb: grade A No.802	R	B	11-40	M	M
Comb: grade A No.803	R	B	11-40	M	M
Comb: grade A No.804	R	B	11-40	M	M
Comb: grade A No.805	R	B	11-40	M	M
Comb: grade A No.811A	R	B	11-40	M	M
Comb: Haie clipper, plastic	R	B	11-40	N	H
Comb: Haie clipper, stainless	R	B	11-40	N	H
Cone No1	R	B	11-40	M	M
Cone No2	R	B	11-40	M	H
Cone No3	R	B	11-40	M	H
Sauce bottle: Orange	R	B	11-40	F	H
Sauce bottle: Transparency	R	B	11-40	M	H
Milk bottle: Kid, Chinesee	R	B	11-40	M	M
Water bottle: 558	R	B	11-40	F	M
Photo Album: Medium size	R	B	11-40	M	H
Photo Album: Jumbo size	R	B	11-40	M	H
Photo Album: Big size	R	B	11-40	F	H
Back cleaning brush: Twin	R	B	11-40	N	H
Water canteen: 999, soldier	R	B	11-40	M	H
Water canteen: 999-2.5, Perfect	R	B	11-40	M	M
Water canteen: 022	R	B	11-40	M	H
Water canteen:No.111	R	B	11-40	M	M
Water canteen:No.486D	R	B	11-40	M	H
Water canteen:No.469X	R	B	11-40	F	M
Water canteen:PB-395	R	B	11-40	F	H
Water canteen:PB-411	R	B	11-40	M	H
Water canteen:PB-426	R	B	11-40	F	H
Water canteen:PB-457	R	B	11-40	M	H
Water canteen:PB-487	R	B	11-40	F	M
Water canteen:PB-488	R	B	11-40	M	H
Water canteen:PB-493	R	B	11-40	F	H

**Table E.3: The allocation system code (Cont.)**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Water canteen:PB-495	R	B	11-40	M	H
Ice canteen:Perfect, No.999-M5	R	B	11-40	M	L
Ice canteen:Star S, No. 592	R	B	11-40	M	M
Water canteen:Tommy	R	B	11-40	F	M
Water canteen:No.486X	R	B	11-40	M	H
Water canteen: Leo	R	B	11-40	F	M
Water canteen:Ikкусang8, No.468D	R	B	11-40	M	M
Water canteen:Ice cream 618	R	B	11-40	F	L
Topknot of Pot's cover: Medium	R	B	11-40	F	L
Topknot of Pot's cover: Size	R	B	11-40	F	L
Topknot of Pot's cover: Big	R	B	11-40	F	L
Ice tray: pumpkin	R	B	11-40	M	L
Cigarette and lighter container: gastank, blue	R	B	11-40	F	H
Cigarette and lighter container: gastank. orange	R	B	11-40	F	H
Water pourer: Medium	R	B	11-40	M	H
Water pourer: Small	R	B	11-40	M	H
Water pourer: Big	R	B	11-40	N	H
Water filter: 5 level	R	B	11-40	F	M
Water filter: Turbine	R	B	11-40	N	M
Chair: CS grade B	R	B	11-40	M	L
Water bottle 1x3	R	B	11-40	M	H
Water bottle 1x3: Square shape	R	B	11-40	M	H
Water bottle 1x4	R	B	11-40	M	H
Water bottle: pushed, small	R	B	11-40	F	H
Water bottle: Pumpkin 711	R	B	11-40	F	H
Water bottle: Pumpkin sport	R	B	11-40	F	M
Dipper with short handle	R	B	11-40	F	L
Bowl 18cm, grade B, dark	R	B	11-40	M	M
Bowl 20A	R	B	11-40	N	M
Bowl 20cm, grade B, dark	R	B	11-40	M	M
Bowl 20cm, grade A, dark	R	B	11-40	N	H
Bowl 16cm, grade A, with handle	R	B	11-40	M	M
Bowl 16cm, grade B, Mix	R	B	11-40	M	M
Water sprayer: 589	R	B	11-40	N	H
Water sprayer: 1008	R	B	11-40	M	H
Water sprayer: 2 in 1	R	B	11-40	M	H
Water sprayer: Solo	R	B	11-40	M	M
Water sprayer: bottle gourd, Star S, 607	R	B	11-40	M	H
Water sprayer: Canon, Yellow	R	B	11-40	N	H
Water sprayer: Lucky, Bell	R	B	11-40	N	H
Water sprayer: Smartwing	R	B	11-40	F	M
Saving box: Medium A	R	B	11-40	M	M
Saving box: Medium B	R	B	11-40	M	M
Saving box: Tiny A	R	B	11-40	M	M
Saving box: Medium A, Kid	R	B	11-40	M	M
Saving box: Giant, A	R	B	11-40	M	M
Saving box: Big cylinder A	R	B	11-40	F	M
Saving box: Fat A	R	B	11-40	N	H
Saving box: Star, S100-4	R	B	11-40	F	M
Saving box: Star, S1005-4	R	B	11-40	F	M

**Table E.3: The allocation system code (Cont.)**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Lunch box 584-2	R	B	11-40	M	H
Lunch box 921	R	B	11-40	M	M
Lunch box 922	R	B	11-40	N	H
Lunch box 923	R	B	11-40	M	M
Tissue box	R	B	11-40	M	H
Soap box: 351P White	R	B	11-40	F	H
Soap box: 351P Transparent	R	B	11-40	F	H
Soap box: Kiak	R	B	11-40	M	H
Soap box: Pearl	R	B	11-40	M	H
Soap box: 771	R	B	11-40	M	H
Soap box: Shinjung	R	B	11-40	M	H
Soap box: White stripes	R	B	11-40	M	H
Soap box: Transparent stripes	R	B	11-40	M	H
Basket: CS 433 grade A	R	B	11-40	M	M
Basket: CS 014	R	B	11-40	M	M
Basket: 436, Shopsticks	R	B	11-40	F	M
High Cup: 355 with Cover	R	B	11-40	M	M
Cup: 475	R	B	11-40	M	M
Cup: 733 with Handle	R	B	11-40	N	H
Cup: P.S. 12 ounces	R	B	11-40	M	M
Cup: P.S. 10 ounces	R	B	11-40	M	M
Cup: P.S. 70 ounces	R	B	11-40	F	M
Cup: Arale	R	B	11-40	N	H
Cup: Kitty style 2013	R	B	11-40	N	H
Cup: Frog style 2012	R	B	11-40	N	H
Cup: Wine	R	B	11-40	F	M
Cup: Freshy	R	B	11-40	N	H
Cup: Marble 004	R	B	11-40	M	H
Cup: A3 with Handle	R	B	11-40	M	M
Cup: 204 with Handle	R	B	11-40	M	H
Cup: 205 with Handle	R	B	11-40	M	H
Cup: 639 Sakura, stripe with Cover	R	B	11-40	N	H
Cup: 404 with Handle	R	B	11-40	M	M
Cup: 002 with Handle	R	B	11-40	N	M
Cup: 004 with Handle, Cartoon pattern	R	B	11-40	M	M
Cup 514: White pattern	R	B	11-40	F	M
Cup 514: Transparent pattern	R	B	11-40	F	M
Cup 688: Sakura, small	R	B	11-40	M	M
Cup: Transparent, pineapple pattern	R	B	11-40	M	M
Menthol: Mid	R	A	24-34	F	M
Refilled Gas: Buca, Jumbo	R	A	24-34	M	M
a cigarette lighter: AS	R	A	24-34	M	L
a cigarette lighter: Pilot	R	A	24-34	F	L
a cigarette lighter: Red Tai-Yo	R	A	24-34	N	L
a cigarette lighter: Tai-Yo	R	A	24-34	N	L
a cigarette lighter: Black Star	R	A	24-34	M	L
a cigarette lighter: Red Star	R	A	24-34	M	L
Dry Alcohol cup	R	A	24-34	M	L
Kerosine: Jun	R	A	24-34	N	M
Indigo: bottle Mokey	R	A	24-34	F	M

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code					
Indigo: square shape, Crown	R	A	24-34	M	H	
Indigo: Squarel bottle, Chicken	R	A	24-34	F	L	
Indigo: square shape, Monkey	R	A	24-34	F	M	
Fabric Whitner	R	A	24-34	M	M	
Metal polisher: Medium, Brasso	R	A	24-34	M	M	
Metal polisher:Small, Brasso	R	A	24-34	N	M	
Metal polisher: Big, Brasso	R	A	24-34	M	M	
Metal polisher:Small, Vnol	R	A	24-34	M	H	
Metal polisher:Big, Vnol	R	A	24-34	M	M	
Shoe polish: small, black	R	A	24-34	M	M	
Shoe polish: small, brown	R	A	24-34	M	M	
Shoe rubber: Kiwi, White	R	A	24-34	M	M	
Shoe rubber: Kiwi, Black	R	A	24-34	M	M	
Shoe rubber: Kiwi, Brown	R	A	24-34	M	M	
Glass Cleaner: Buka	R	A	24-34	M	M	
Bath room cleaner: Jackie, Pink	R	A	24-34	N	L	
Dish soap cleanser	R	A	24-34	M	M	
Dish liquid cleanser: Cleo	R	A	24-34	N	L	
Wooden chopping block	R	A	09-10	M	M	
Ladle: Belanine	R	A	09-10	M	M	
Knife: Kiwi 172	R	A	09-10	M	H	
Knife: Kiwi 173	R	A	09-10	M	H	
Knife: Kiwi 193	R	A	09-10	N	H	
Knife: Kiwi 194	R	A	09-10	N	H	
Knife: Kiwi 195	R	A	09-10	N	H	
Knife: Kiwi 21	R	A	09-10	M	H	
Knife: Kiwi 22	R	A	09-10	M	H	
Knife: Kiwi 247	R	A	09-10	M	H	
Knife: Kiwi 474	R	A	09-10	M	H	
Knife: Kiwi 475	R	A	09-10	M	H	
Knife: Kiwi 476	R	A	09-10	M	H	
Knife: Kiwi 477	R	A	09-10	M	H	
Knife: Chinese 103	R	A	09-10	N	H	
Knife: Chinese 104A	R	A	09-10	M	H	
Knife: Chinese 106W	R	A	09-10	M	H	
Knife: Chinese 108	R	A	09-10	M	H	
Knife: Chinese 109	R	A	09-10	M	H	
Knife: Chinese 1105	R	A	09-10	M	H	
Knife: Chinese 1168	R	A	09-10	M	H	
Knife: Chinese 1174	R	A	09-10	M	H	
Knife: Chinese 1177	R	A	09-10	M	H	
Knife: Chinese 1178	R	A	09-10	M	H	
Knife: Chinese 202	R	A	09-10	M	H	
Knife: Chinese 204	R	A	09-10	M	H	
Knife: Chinese 205	R	A	09-10	M	H	
Grilling sieve	R	A	09-10	M	M	
Dry cell: Panasonic, 2A, green	R	A	57-60	M	L	
Dry cell: Panasonic, 2A, black	R	A	57-60	F	L	
Dry cell: Panasonic, 2A, red	R	A	57-60	F	L	
Dry cell: Panasonic, 3A, black	R	A	57-60	F	L	

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Dry cell: Panasonic, 9V, square shape	R	A	57-60	F	L
Dry cell: Panasonic, 2A, Alkarine	R	A	57-60	F	M
Dry cell: Panasonic, 3A, Alkarine	R	A	57-60	F	M
Dry cell: Panasonic, size C, Middle	R	A	57-60	F	L
Dry cell: Panasonic, size D, Big	R	A	57-60	M	L
Dry cell: Chinese, 2A	R	A	57-60	N	L
Dry cell: Chinese, 3A	R	A	57-60	F	L
Dry cell: CAT, Small	R	A	57-60	M	L
Dry cell: CAT, Big	R	A	57-60	M	L
Flashlight, Panasonic, FF-137	R	A	57-60	M	M
Flashlight, Panasonic, FF-327	R	A	57-60	M	M
Flashlight, PF-127	R	A	57-60	M	M
Flashlight, Gun A2500	R	A	57-60	M	M
Flashlight, Gun A2600	R	A	57-60	M	H
Flashlight, Gun S2200	R	A	57-60	M	H
Power plug receptable: 2001-10	R	A	57-60	M	M
Power plug receptable: 2001-11	R	A	57-60	M	M
Power plug receptable: 2001-5	R	A	57-60	M	L
Power plug receptable: 2001-8	R	A	57-60	M	M
Power plug receptable: 2001-9	R	A	57-60	M	M
Power plug receptable: SU1, triangle shape	R	A	57-60	M	M
Power plug receptable: NS-1 Nakashi	R	A	57-60	M	M
Light bulb of Flashlight: 24V No.1	R	A	57-60	F	M
Light bulb of Flashlight: 24V No.2	R	A	57-60	F	M
Light bulb of Flashlight: 24V No.3	R	A	57-60	F	M
Light bulb of Flashlight: 24V No.4	R	A	57-60	F	M
Light bulb of Flashlight: 24V No.5	R	A	57-60	F	M
Fabric Gloves: Special weaver, rabbit	R	A	01-08	M	M
Fabric Gloves: Red rim	R	A	01-08	N	M
Fabric Gloves: eye, white, 125	R	A	01-08	M	H
Fabric Gloves: eye, size 10-12	R	A	01-08	M	H
Fabric Gloves: eye, size 132	R	A	01-08	M	M
Fabric Gloves: eye, size 5-7	R	A	01-08	M	H
Fabric Gloves: eye, size 7-9	R	A	01-08	M	H
Fabric Gloves: Sun	R	A	01-08	M	M
Fabric Gloves: Sun, nylon	R	A	01-08	M	M
Fabric Gloves: peacock, white, nylon	R	A	01-08	M	M
Fabric Gloves: eagle, colorful, nylon	R	A	01-08	N	M
Fabric Gloves: golden fish, colorful, nylon	R	A	01-08	M	M
Fabric Gloves: Sun, sailclothes	R	A	01-08	M	H
Fabric Gloves: peacock, sailclothes	R	A	01-08	M	M
Pollution filter clothes: blue	R	A	01-08	M	M
Socks: short, Mix color	R	A	01-08	M	M
Socks: business, Mix color	R	A	01-08	M	M
Mirror: bath room	R	A	14-23	M	M
Mirror: Flower 10x14 ,hang	R	A	14-23	M	M
Mirror: Flower 7x10 ,hang	R	A	14-23	M	M
Mirror: Flower 8x12 ,hang	R	A	14-23	M	M
Mirror: Flower No.10	R	A	14-23	M	M
Mirror: Flower No.12	R	A	14-23	M	M

**Table E.3: The allocation system code (Cont.)**

<b>Item Identifier</b>	<b>Allocation system code</b>				
Mirror: Flower No.6	R	A	14-23	N	H
Mirror: Flower No.7	R	A	14-23	N	M
Mirror: Flower No.8	R	A	14-23	M	M
Mirror: Flower No.9	R	A	14-23	M	M
Mirror: Flower No.4	R	A	14-23	M	M
Mirror: Flower No.5	R	A	14-23	M	L
Bottle opener: A80	R	A	14-23	N	H
Bottle opener: 777	R	A	14-23	F	H
Nail cutter: 129	R	A	14-23	M	L
Nail cutter: 777, 211	R	A	14-23	M	H
Nail cutter: 999, Small	R	A	14-23	N	H
Nail cutter: 999, Big	R	A	14-23	N	H
Shoe rope: 24 inches, White	R	A	14-23	F	M
Shoe rope: 24 inches, Black	R	A	14-23	F	M
Shoe rope: 24 inches, Brown	R	A	14-23	F	M
Shoe rope: 24 inches, Dark brown	R	A	14-23	F	M
Shoe rope: 36 inches, White	R	A	14-23	F	M
Shoe rope: 36 inches, Black	R	A	14-23	F	M
Shoe rope: 36 inches, Brown	R	A	14-23	F	M
Shoe rope: 36 inches, Dark brown	R	A	14-23	F	M
Shoe rope: 24 inches, White, Flat	R	A	14-23	F	M
Shoe rope: 24 inches, Black, Flat	R	A	14-23	F	M
Shoe rope: 24 inches, Brown, Flat	R	A	14-23	F	M
Shoe rope: 24 inches, Dark brown, Flat	R	A	14-23	F	M
Padlock: Solo 30mm No.84	R	A	14-23	M	H
Padlock: Solo 50mm	R	A	14-23	M	H
Padlock: black, long 32mm	R	A	14-23	N	H
Padlock: brass, long 32mm	R	A	14-23	N	H
Padlock: gold, short 50mm	R	A	14-23	N	H
Padlock: black, short 32mm	R	A	14-23	N	H
Padlock: Solo 35mm, pack	R	A	14-23	N	H
Padlock: Wolf 25mm	R	A	14-23	N	H
Padlock: Wolf 30mm	R	A	14-23	N	H
Padlock: black, short 50mm 999	R	A	14-23	M	H
Padlock: Wolf 50mm	R	A	14-23	N	H
Padlock: brass, short 20 mm	R	A	14-23	N	H
Padlock: Solo 40mm, pack	R	A	14-23	N	H
Padlock: black, short 25mm 999	R	A	14-23	N	H
Padlock: gold, long 25mm	R	A	14-23	M	H
Padlock: black, short 32mm 999	R	A	14-23	F	L
Padlock: black, short 38mm 999	R	A	14-23	F	L
Padlock: black, short 50mm 5 rings	R	A	14-23	F	L
Padlock: gold, long 50mm	R	A	14-23	F	L
Padlock: gold, short 38mm	R	A	14-23	M	L
Padlock: gold, short 50mm	R	A	14-23	F	L
Padlock: World 50mm	R	A	14-23	F	L
Padlock: Wolf 20mm	R	A	14-23	F	L
Padlock: Wolf 25mm	R	A	14-23	F	L
Padlock: Wolf 30mm	R	A	14-23	F	L
Padlock: Wolf 40mm	R	A	14-23	F	L

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Padlock: Wolf 50mm	R	A	14-23	F	L
Padlock: VITA long, 40mm	R	A	14-23	M	M
Padlock: VITA short, 40mm	R	A	14-23	M	M
Padlock: VITA long, 45mm	R	A	14-23	M	M
Padlock: VITA short, 45mm	R	A	14-23	M	M
Padlock: VITA long, 50mm	R	A	14-23	M	M
Padlock: VITA short, 50mm	R	A	14-23	M	M
Padlock: Solo 35mm, pack	R	A	14-23	M	M
Padlock: Solo 40mm, pack	R	A	14-23	M	M
Padlock: Solo 45mm, pack	R	A	14-23	M	M
Padlock: Solo 50mm, pack	R	A	14-23	M	M
Padlock: Solo 55mm, pack	R	A	14-23	M	M
U-lock: 3 pieces	R	A	14-23	M	H
U-lock: Harry Master, 115	R	A	14-23	M	M
U-lock: Harry Master, 55	R	A	14-23	M	H
U-lock: Harry Master, 75	R	A	14-23	M	H
U-lock: Harry Master, 95	R	A	14-23	M	H
Drawer lock	R	A	14-23	M	H
Thread: Sailing ship, White	R	A	14-23	M	M
Thread: Sailing ship, Mix	R	A	14-23	M	M
Thread: Sailing ship, Black	R	A	14-23	M	M
Thread: 10 baht set, Mix	R	A	14-23	M	M
Brooch: tiny, White	R	A	14-23	M	H
Brooch: tiny, Gold	R	A	14-23	M	H
Brooch: Rose, 0	R	A	14-23	N	H
Brooch: Rose, 1	R	A	14-23	N	H
Brooch: Rose, 2	R	A	14-23	N	H
Brooch: Rose, 3	R	A	14-23	N	H
Brooch: Rose, 4	R	A	14-23	N	H
Brooch: Bee, 1	R	A	14-23	N	H
Brooch: Bee, 2	R	A	14-23	N	H
Brooch: Bee, 3	R	A	14-23	N	H
Mothball: ATM, small	R	A	14-23	M	M
Mothball: Small pack	R	A	14-23	M	M
Rubber gloves: Canon, L	R	A	14-23	F	H
Rubber gloves: Canon, M	R	A	14-23	F	H
Rubber gloves: Canon, S	R	A	14-23	F	H
Rubber gloves: Panda, Black, L	R	A	14-23	F	H
Rubber gloves: Panda, Black, M	R	A	14-23	F	H
Rubber gloves: Panda, Black, S	R	A	14-23	F	H
Rubber gloves: Panda, Orange, L	R	A	14-23	M	H
Rubber gloves: Panda, Orange, M	R	A	14-23	F	H
Rubber gloves: Panda, Orange, S	R	A	14-23	F	H
Rubber gloves: Panda, Goose, 7.5, Pink	R	A	14-23	F	H
Rubber gloves: Panda, Goose, 8.5, Pink	R	A	14-23	F	H
Rubber gloves: Sun, Orange,L	R	A	14-23	F	H
Rubber gloves: Sun, Orange,M	R	A	14-23	F	H
Rubber gloves: Sun, Orange,S	R	A	14-23	F	H
Doctor gloves: L	R	A	14-23	F	M
Doctor gloves: M	R	A	14-23	M	M

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Doctor gloves: S	R	A	14-23	M	M
Nipple: Akasen L	R	A	14-23	M	M
Nipple: Akasen M	R	A	14-23	M	M
Nipple: Akasen S	R	A	14-23	M	M
Nipple: Kiki L	R	A	14-23	M	M
Nipple: Kiki M	R	A	14-23	M	M
Nipple: Kiki S	R	A	14-23	M	M
Toothpick: Bamboo, Medium	R	A	14-23	M	M
Toothpick: Bamboo, Small	R	A	14-23	F	L
Toothpick: Bamboo, Large	R	A	14-23	M	M
Shoe rubber: G2-1	R	A	14-23	N	H
Shoe rubber: G2-4	R	A	14-23	N	H
Shoe rubber: G3-1	R	A	14-23	N	H
Shoe rubber: G3-4	R	A	14-23	N	H
pincer: diamond	R	A	11-13	N	M
pincer with cutting head: diamond	R	A	11-13	M	H
pincer with sharp head: diamond	R	A	11-13	M	M
Screw driver 4 pieces in set	R	A	11-13	N	H
Screw driver with 3 inches punch head	R	A	11-13	M	H
Screw driver with 4 inches punch head	R	A	11-13	M	H
Screw driver for electrical test	R	A	11-13	M	H
Adhesive tape for wiring( Black)	R	A	11-13	M	H
Adhesive tape for wiring( White)	R	A	11-13	M	H
Adhesive tape for wiring( Green)	R	A	11-13	M	H
Adhesive tape for wiring( Red)	R	A	11-13	M	H
Adhesive tape for wiring( Blue)	R	A	11-13	M	H
Adhesive tape for wiring( Yellow)	R	A	11-13	M	H
Painting brush: No.2	R	A	11-13	F	M
Showering head spray	R	A	11-13	M	H
Cleaning tube	R	A	11-13	M	H
paper card: Winner	R	A	61-62	F	M
Curtain hooker: Color 1	R	A	61-62	F	M
Curtain hooker: Color 2	R	A	61-62	F	M
Curtain hooker: Color 3	R	A	61-62	F	M
Curtain hooker: Color 4	R	A	61-62	F	M
Curtain hooker: Color 5	R	A	61-62	F	M
Ring: Medium size	R	A	61-62	F	L
Ring: 500 pieces : chain	R	A	61-62	M	L
Ring: Small size	R	A	61-62	F	M
Ring: Big size	R	A	61-62	M	L
Artificial clay: big size	R	A	61-62	M	L
Perfume gel: G&G	R	A	61-62	F	L
Price Tag sticker	R	A	47-51	M	M
Staple wire	R	A	47-51	M	L
Scissors: Orange handle	R	A	47-51	N	H
Scissors: Wildman 03A	R	A	47-51	M	H
Scissors: Wildman 04A	R	A	47-51	M	H
Scissors: Wildman 05A	R	A	47-51	M	H
Scissors: Rubber handle size 1	R	A	47-51	F	M
Scissors: Rubber handle size 2	R	A	47-51	F	L



**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code				
Scissors: Chtneese yellow handie	R	A	47-51	M	L
Scissors: Rose, 33	R	A	47-51	N	H
Scissors: Rose, 538	R	A	47-51	N	H
Scissors: Rose, 917	R	A	47-51	N	H
Scissors: thread, black	R	A	47-51	M	M
Scissors: Meti, Rabbit	R	A	47-51	N	H
Cutter 30-K	R	A	47-51	F	M
Cutter 44-K	R	A	47-51	M	M
CutterP1 Colorful	R	A	47-51	M	M
Cutter ST-10	R	A	47-51	M	M
Cutter ST-100	R	A	47-51	F	M
Cutter ST-9	R	A	47-51	M	M
Clipper: White 0	R	A	47-51	M	H
Clipper: White 2	R	A	47-51	M	M
Clipper: White 3	R	A	47-51	M	M
Clipper: White 4	R	A	47-51	M	H
Clipper: White 5	R	A	47-51	M	H
Clipper: Black 110	R	A	47-51	M	H
Clipper: Black 111	R	A	47-51	M	H
Clipper: Black 112	R	A	47-51	M	H
Tape: transparency 1/2 inche 36 yard. small	R	A	47-51	M	M
White board pen: pilot, Black	R	A	47-51	F	M
White board pen: pilot, Red	R	A	47-51	F	M
White board pen: pilot, Blue	R	A	47-51	F	M
Pencil: muti-head, Diamond	R	A	47-51	M	M
Book: 10 baht	R	A	47-51	M	L
Book: 5 baht	R	A	47-51	M	L
Book: Drawing, Small	R	A	47-51	F	L
Razor Blade: Superthin	R	A	52-56	F	M
Razor Blade: SuperMax	R	A	52-56	F	M
Razor Blade: SuperStainless	R	A	52-56	F	M
Razor :TCI Set	R	A	52-56	M	M
Toothbrush: Popular Eastman	R	A	52-56	M	M
Toothbrush: 12 in one box, Medium Victory	R	A	52-56	M	M
Toothbrush: 12 in one box, Soft Victory	R	A	52-56	M	M
Toothbrush: 30 in one box, Medium Victory	R	A	52-56	M	M
Toothbrush: 30 in one box, Soft Victory	R	A	52-56	M	M
Toothbrush: OralB Med.	R	A	52-56	M	M
Toothbrush: OralB Soft	R	A	52-56	M	M
Toothbrush: Jomana	R	A	52-56	M	M
Soap: kok-leang	R	A	52-56	F	M
Soap: Tamarine	R	A	52-56	F	L
Soap: Ya-Un	R	A	52-56	M	M
Shower sponge: Natural	R	A	52-56	M	H
Belanine spoon: long	R	A	35-46	M	H
Belanine spoon: short	R	A	35-46	M	H
Stainless spoon: coffee	R	A	35-46	M	M
Plastic spoon-fork	R	A	35-46	M	M
Stainless spoon-fork#C	R	A	35-46	M	L
Spoon: Elephant, short	R	A	35-46	M	L

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code					
Stainless spoon: Jet	R	A	35-46	M	L	
Wooden Chopstick	R	A	35-46	M	L	
Brush: Nylon, Hama	R	A	35-46	N	M	
Fabric cleaning Brush:Nylon, flat iron	R	A	35-46	N	M	
Fabric cleaning Brush:flat iron shape,brass	R	A	35-46	N	M	
Brush: Rose, Brass	R	A	35-46	M	M	
Floor cleaning brush: Nylon, Rose	R	A	35-46	M	M	
Brush: Brass,Hama	R	A	35-46	M	M	
Bottle cleaning brush: B1 with sponge	R	A	35-46	F	M	
Bottle cleaning brush: Rabbit	R	A	35-46	F	M	
Clothes hanger: Umbrella	R	A	35-46	M	M	
Clothes hanger: red heart-shaped, 55	R	A	35-46	N	M	
Fabric pincher: 16 pieces, Ploy	R	A	35-46	M	M	
Fabric pincher: 18 pieces, CS	R	A	35-46	N	M	
Fabric pincher: 18pieces, turbine	R	A	35-46	N	M	
Fabric pincher: 18 pieces, round shape, Merry	R	A	35-46	M	M	
Fabric pincher: Japaneese	R	A	35-46	M	M	
Fabric pincher: Big size	R	A	35-46	M	M	
Shower cap: finesse, small	R	A	35-46	F	M	
Shower cap: finesse, big	R	A	35-46	F	M	
Shower cap:small	R	A	35-46	F	M	
Shower cap:big	R	A	35-46	F	L	
Toothpast squeezer: murky	R	A	35-46	M	M	
Toothpast squeezer: transparency	R	A	35-46	F	M	
Photo Album: Small size	R	A	35-46	M	H	
Back scratching stick	R	A	35-46	M	M	
Plastic bag with lock	R	A	35-46	M	M	
Water sprayer: 590	R	A	35-46	M	H	
Water sprayer: Taiwan, Transparency	R	A	35-46	M	H	
Water sprayer: foggy	R	A	35-46	N	H	
Soap box: 2 slots	R	A	35-46	M	M	
Basket: Spoon, one slot	R	A	35-46	F	M	
Cup: 45 Mitsu with Handle	R	A	35-46	M	H	
Cleaning sponge: Tree, M	F	2	2	C	06	2
Floor cleaning sponge: Rose	F	2	F	C	01	2
Cleaning sponge: Hama, L	F	2	2	C	05	2
Cleaning sponge with scrubber: Modern	F	2	2	C	07	2
Scrubber: Bigsize 1mx2m	F	2	2	C	05	1
Floor cleaning sponge: Tree	F	2	F	C	01	1
One baht cotton wool	F	2	2	C	04	1
One baht cotton wool	F	2	2	C	04	2
Ten baht cotton wool	F	2	2	C	06	1
27 baht cotton wool	F	2	2	C	05	2
Shower sponge with Shower Cream	F	2	2	C	06	2
Cone No4	F	2	F	C	02	2
Cone No5	F	2	F	C	02	2
Bath roon cleaning brush: Sack	F	2	F	C	03	2
Water canteen:น้ำ-๓	F	2	F	C	02	1
Broom: water Samor	F	2	2	C	07	1
Water sprayer: Bone shape, Murky	F	2	2	C	07	1

**Table E.3: The allocation system code (Cont.)**

Item Identifier	Allocation system code					
Water sprayer: Bone shape, transparency	F	2	F	C	03	1
Chair: M, Big	F	2	F	C	02	1
Knife: Kiwi 501	F	2	F	B	07	3
Knife: Kiwi 502	F	2	F	B	07	3
Padlock: gold, short 38mm	F	2	F	B	06	3
Padlock: brass, short 32mm	F	2	F	B	06	3
Padlock: Solo 25mm, pack	F	2	F	B	06	3
Padlock: Wolf 20mm	F	2	F	B	06	3
Padlock: black, long 38mm	F	2	F	B	06	3
Padlock: black, short 38 mm	F	2	F	B	06	3
Padlock: brass, long 38mm	F	2	F	B	06	3
Padlock: Wolf 40mm	F	2	F	B	06	3
Padlock: gold, long 50mm	F	2	F	B	06	3
Padlock: black, long 50mm	F	2	F	B	06	3
Clothes hanger: 5 rings	F	2	F	B	01	3
Clothes hanger: 5 rings	F	2	F	B	02	3
Clothes hanger: 3 rings	F	2	F	B	03	3
Clothes hanger: 3 rings	F	2	F	B	04	3
Clothes hanger: 3 rings	F	2	F	B	05	3
Mentholated ointment	F	2	F	B	07	1
Clothes for floor cleaning( Mob)	F	2	F	B	01	1
Bottle opener: 200	F	2	F	B	05	1
Bottle opener: 900	F	2	F	B	05	1
Wine opener: 800	F	2	F	B	03	2
Wine opener: 800	F	2	F	B	04	2
Wine opener: 800	F	2	F	B	05	2
Nail cutter: 211	F	2	F	B	04	1
Nail cutter: 602	F	2	F	B	04	1
Pingpong ball: white	F	2	F	B	07	2
Pingpong ball: orande	F	2	F	B	07	2
Whetstone	F	2	F	B	06	2
Book: tearable papert, without line,Small	F	2	F	B	03	1
Book: tearable papert, Small	F	2	F	B	03	1
Nail polisher: Small size	F	2	F	B	07	1
Olive oil: Small size	F	2	F	B	07	1
Razor Blade: Feather	F	2	F	B	06	2
Clipping Blade: Sakura	F	2	F	B	07	1
Clipping Blade: Dragonfly	F	2	F	B	08	1
Short Clipping Blade: Dragonfly	F	2	F	B	09	1
Nail polisher: Square bottle	F	2	F	B	02	1
Nail polisher: Square bottle	F	2	F	B	02	2
Spoon: short, Zebra	F	2	F	B	01	2
Mop with round fabric	F	2	F	R	01	1
Mop with round fabric	F	2	F	R	01	2
Aluminium Mop	F	2	F	R	01	3
Aluminium Mop	F	2	F	R	01	4
Aluminium Mop	F	2	F	R	01	5

**APPENDIX F**  
**CURRENT WAREHOUSE LAYOUT**

## Current warehouse layout

The company uses 2 commercial buildings as a warehouse and an office. The first building has 7 floors but the first floor is an administrator office and the third floor is a bedroom for the owner of the company. Layout and detail of each floor in first and second building is illustrated below this:

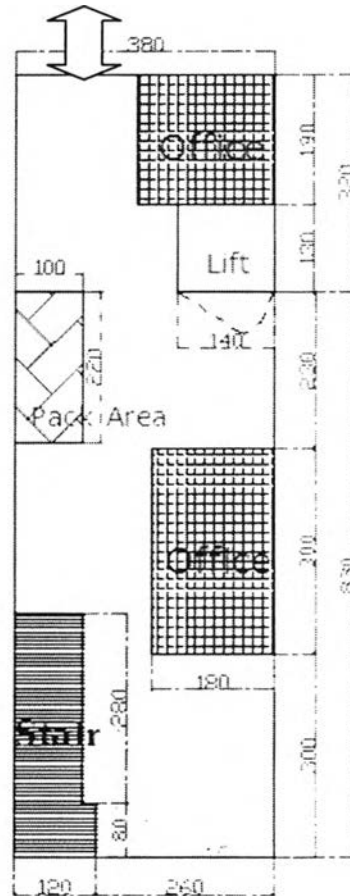
### 1. Layout of building no.1

#### 1.1 The first floor of building No.1

Entrance and Exit of the building no.1

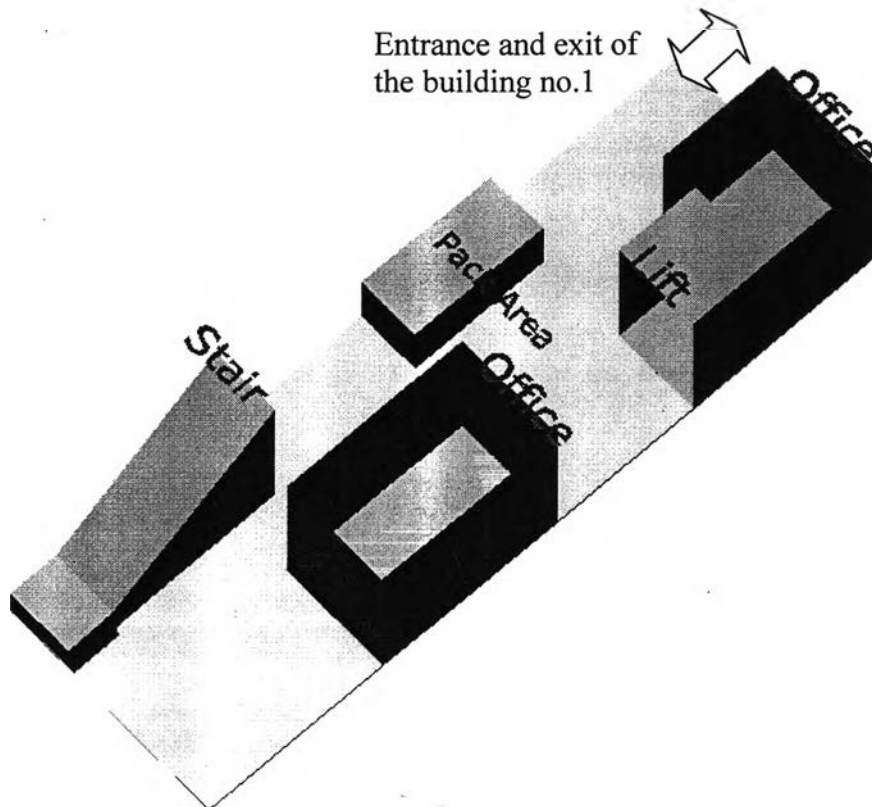


Entrance and Exit of the building no.1



Scale 1 unit: 1cm

**Figure F.1** - Layout of 1<sup>st</sup> floor in building no.1 (Left) and Layout of 1<sup>st</sup> floor in building no.1 with dimension (Right)



**Figure F.2-**Layout of 1<sup>st</sup> floor in building no.1 in 3 dimensions view

**(A) Detail of 1<sup>st</sup> floor in building no.1:** The first floor of building no.1 is an office for an administration but there are some other activities have been done at this floor. Receiving activity has been done at this floor or in front of the building which is a public street but there is no area which is specified to be receiving area. Item packing before shipping to customer has been done at this floor then packing machine is installed at the pack area of this floor. Items are moved in and out this building through the front door and moved into other floors through lift or stair. Area at this floor is often used as buffer and stacking area by warehousing staffs before it was shipped or put away to storage but there is no area which is specified to be a buffer or stacking area. Thus this floor is quite mess up with many activities that done at this floor and it affects to the performance of warehouse activities.

**(B) Dimension of 1<sup>st</sup> floor in building no.1:** Length of this floor is 11.5 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Total area of this floor is 43.7 square meters and the lift area is 1.82 square meters. Size of the first office area is 2 meters width and 1.9 meters length then the width of entrance and exit is 1.80 meters. Width of the aisle between stair to upper floor and second office is only 0.8 meters.

**(C)Area of the 1<sup>st</sup> floor in building no.1:** Total area of this floor is 43.7 square meters and the lift area is 1.82 square meters. The first office area is 3.8 square meters and the second office area is 5.4 square meters. Stair area is 4.32 square meters and pack area is 2.2 square meters. Due to there is no area that is specified to be an aisle then the rest area of this floor would be a space. Space of this floor can be calculated from total area minus with other areas. Operational space is an area which is still empty and warehouse operation such as put away, dispatch and order picking can be done in this area. Operational space of this floor can be calculated from storage area minus with areas of fixed obstacle..

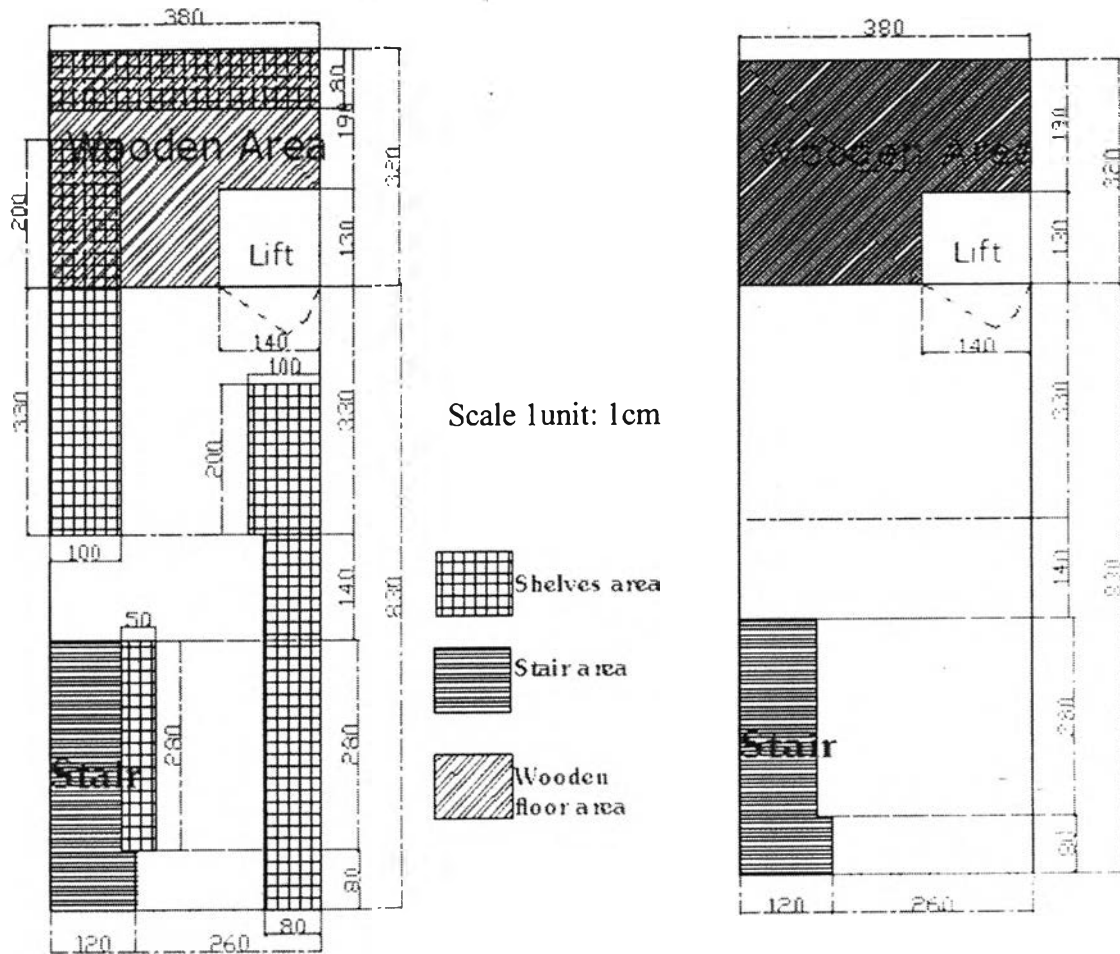
**Operational Space** = Total area – (lift area + the first office area + the second office area + stair area + pack area).

Then operational space of the 1<sup>st</sup> floor in building no.1 =  $43.7 - (1.82+3.8+5.4+4.32+2.2) = 26.16$  square meters.

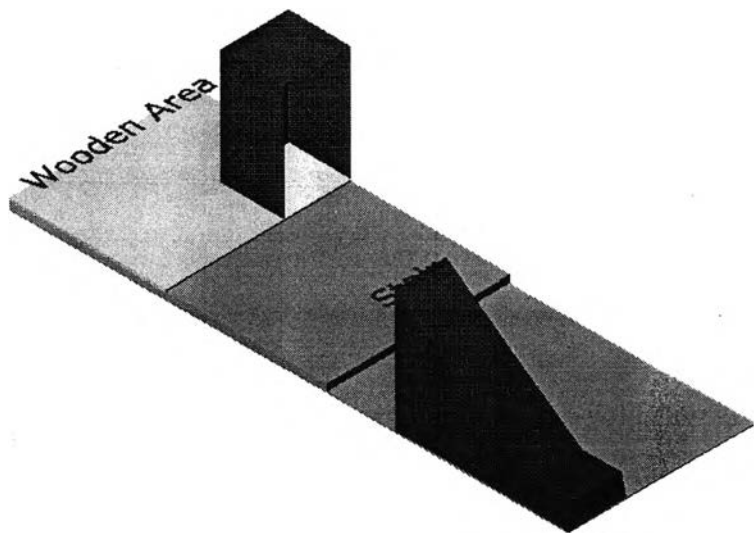
## 1.2 Floated floor between the first and second floor of building No.1

**(A)Detail of Floated floor in building no.1:** Floated floor is the floor between the first floor and second floor. This floor is assigned to be a storage area of the small items then shelves are used as storage equipments in this floor as it shows in fig.3.10. The ground of this floor has 2 types and 2 levels. The first type is a cement floor and another is a wooden floor. The floor has 2 levels which one level is higher than another one about 10 cm. Items move in and out this floor through lift or stair. Although there are shelves in this floor, many items are stored by stacking on the floor all over the place. The shelves on this floor are designed to stored only small items and their storage capacity is quite low compares to the quantity of items in this floor.

**(B)Dimension of Floated floor in building no.1:** Length of this floor is 11.5 meters and width is 3.80 meters. Height of the ceiling is 2.30 meters. Length of cement ground is 8.3 meters and width of cement ground is 3.8 meters. Length of wooden ground is 3.2 meters and width of wooden ground is 3.8 meters.



**Figure F.3-** Layout of Floated floor in building no.1 with storage equipment (Left) and Layout of Floated floor in building no.1 (Right)



**Figure F.4** Layout of Floated floor in building no.1 in 3 Dimensions view



**(C) Area of the floated floor in building no.1:** Total area of this floor is 43.7 square meters and the lift area is 1.82 square meters. The cement ground area is 27.22 square meters and the wooden ground area is 10.34 square meters. Stair area is 4.32 square meters and shelves area is 15.74 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (lift area + stair area). Then available storage area of floated floor in building no.1 =  $43.7 - (1.82 + 4.32) = 37.56$  square meters.

Operational space is an area which is still empty and warehouse operation such as put away, dispatch and order picking can be done in this area. Operational space of this floor can be calculated from storage area minus with shelves areas.

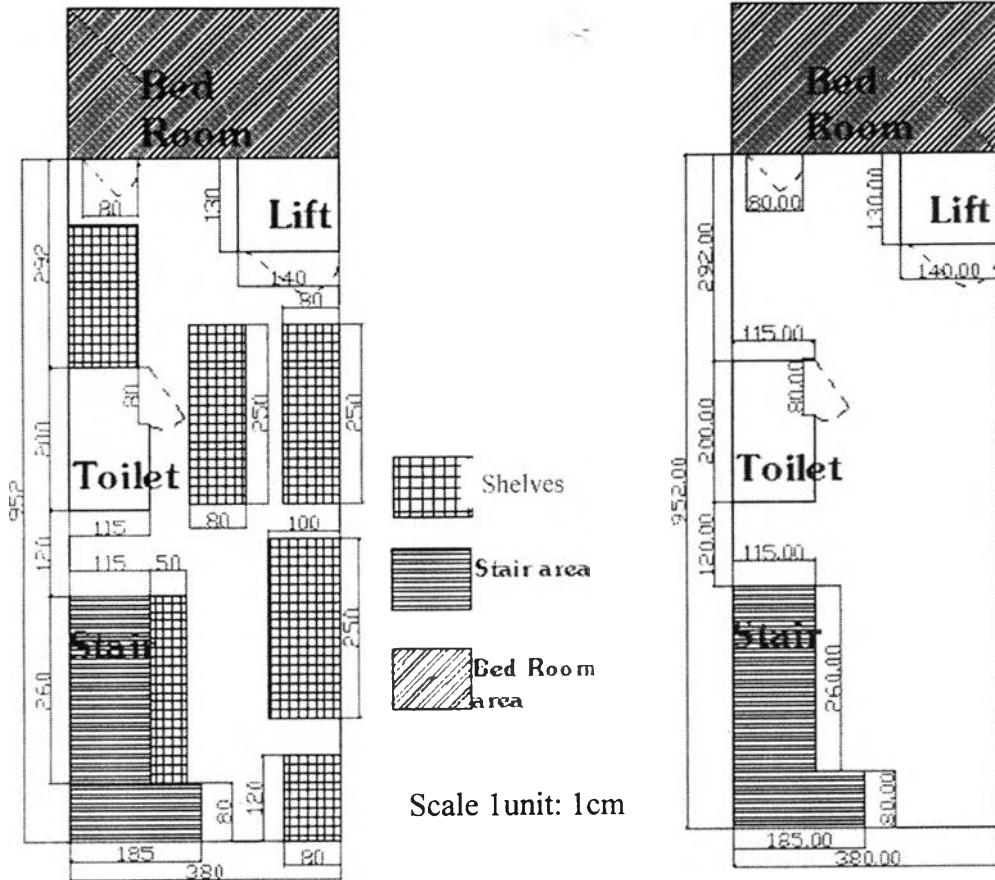
**Operational space** = Storage area – Shelves area.

Then operational space of floated floor in building no.1 =  $37.56 - 15.74 = 21.82$  square meters.

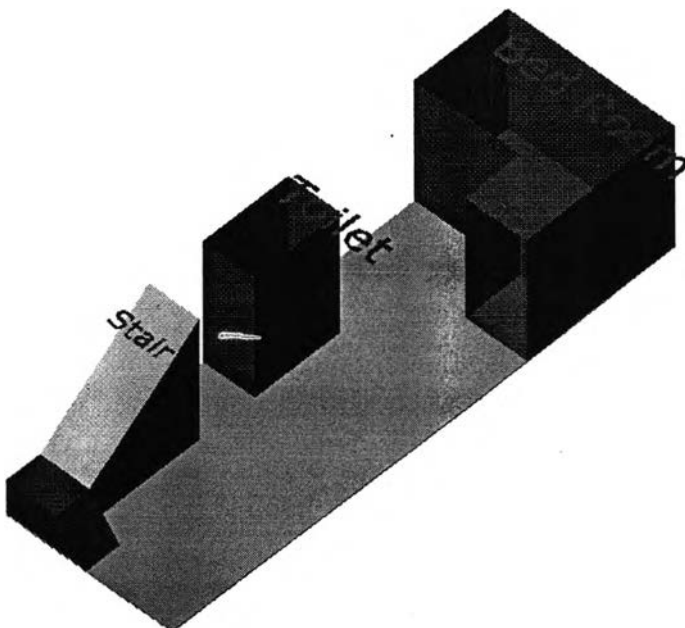
### 1.3 The second floor of building No.1

**(A)Detail of 2nd floor in building no.1:** This floor is used as a storage area so there are many shelves at this floor as it shows in figure 3.13. Some areas of this floor are used as a bedroom and a toilet then they can not be used as a storage area. Items move in and out this floor through lift or stair. Although there are shelves in this floor, many items are stored by stacking on the floor. Shelves on this floor are made of aluminum and wood. They are designed to stored items which are contained in cartons or plastic sacks. Items are stored very untidy on a shelf.

**(B)Dimension of 2nd floor in building no.1:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Size of a bedroom is 2.28 meters length and 3.8 meters width.



**Figure F.5-**Layout of 2nd floor in building no.1 with storage equipment (Left) and Layout of 2nd floor in building no.1 (Right)



**Figure F.6-**Layout of 2nd floor in building no.1 in 3 Dimensions view

**(C)Area of 2nd floor in building no.1:** Total area of this floor is 44.84 square meters and the lift area is 1.82 square meters. The bed room area is 8.64 square meters and toilet area is 2.3 square meters. Shelves area is 10.76 square meters and stair area is 4.32 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (lift area + toilet area + stair area + bed room area). Then available storage area of 2nd floor in building no.1 = 44.84 – (1.82+2.3+4.32+8.64) = **27.76** square meters.

Operational space is an area which is still empty and warehouse operation such as put away, dispatch and order picking can be done in this area. Operational space of this floor can be calculated from storage area minus with shelves area.

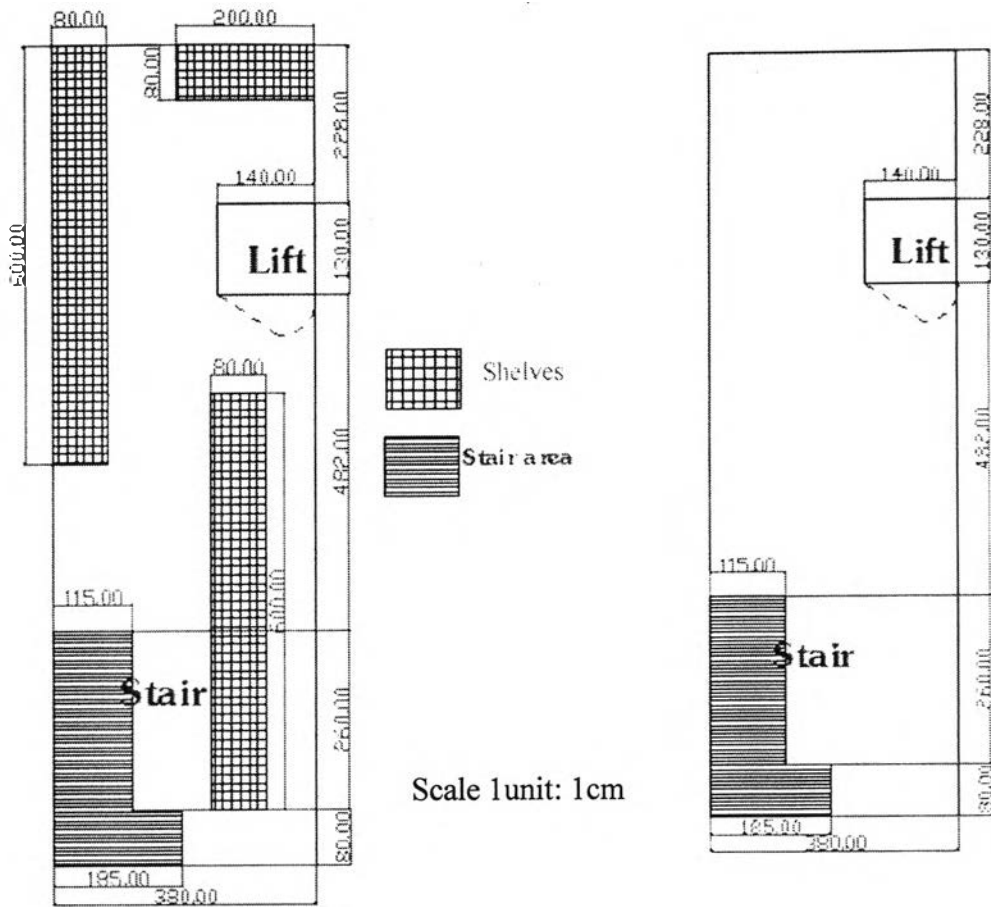
**Operational Space** = Storage area – Shelves area.

Then operational space of the 2nd floor in building no.1 = 27.76 – 10.76= **17** square meters.

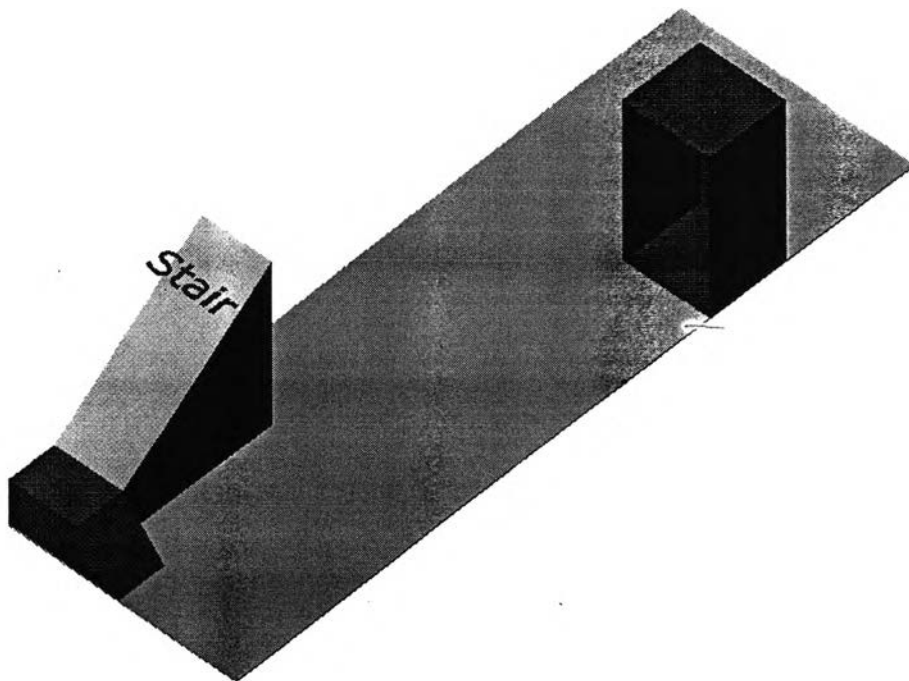
#### **1.4 The fourth floor of building No.1**

**(A)Detail of 4th floor in building no.1:** This floor is used as a storage area so there are many racks at this floor as it shows in figure 3.15. Items move in and out this floor through lift or stair. Although there are shelve area in this floor, many items are stored by stacking on the floor. Shelves of this floor are made of aluminum and wood. Items are stored very untidy both on a shelf area and on a floor.

**(B)Dimension of 4th floor in building no.1:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters.



**Figure F.7-**Layout of 4th floor in building no.1 with storage equipment (Left) and Layout of 4th floor in building no.1 (Right)



**Figure F.8-** Layout of 4th floor in building no.1 in 3 dimensions view

**(C) Area of 4th floor in building no.1:** Total area of this floor is 44.84 square meters and the lift area is 1.82 square meters. Shelves area is 11.2 square meters and stair area is 4.32 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (lift area + stair area). Then available storage area of 4th floor in building no.1 =  $44.84 - (1.82+4.32) = 38.7$  square meters.

Operational space is an area which is still empty and warehouse operation such as put away, dispatch and order picking can be done in this area. Operational space of this floor can be calculated from storage area minus with shelves area.

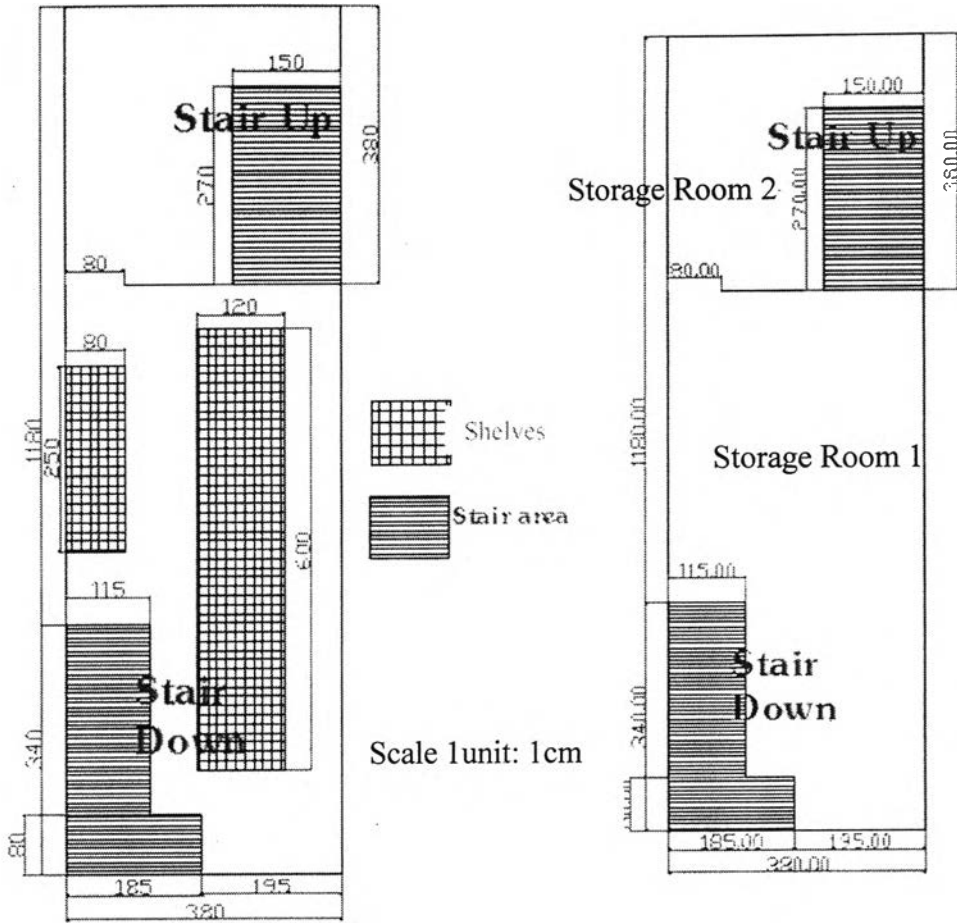
**Operational Space** = Storage area – Shelves area.

Then operational space of the 4<sup>th</sup> floor in building no.1 =  $38.7 - 11.2 = 27.5$  square meters.

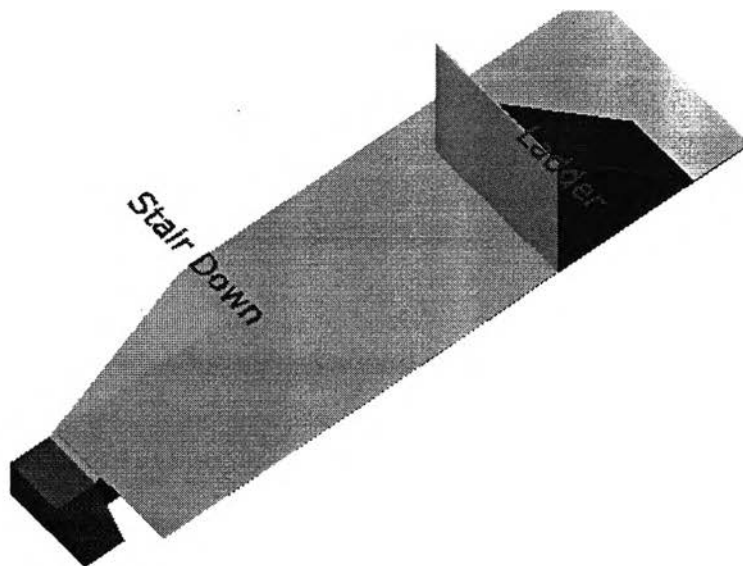
### 1.5 The fifth floor of building No.1

**(A)Detail of 5th floor in building no.1:** This floor is used as a storage area so there are many shelves s at this floor as it shows in figure 3.19. This floor is divided into 2 room and both rooms are used as a storage area. Items move in and out this floor through a stair. There are 2 stairs in this floor. The first stair is a down stair to the 4<sup>th</sup> floor and the second stair is an up stair to the 6<sup>th</sup> floor. Although there are shelves in this floor, many items are stored by stacking on the floor. Shelves of this floor are made of aluminum and wood. Items are stored very untidy both on a shelf and on a floor.

**(B)Dimension of 5th floor in building no.1:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Size of the first room is 8 meters length and 3.8 meters width. Size of the second room is 3.8 meters length and 3.8 meters width.



**Figure F.9-**Layout of 5th floor in building no.1 with storage equipment (Left) and Layout of 5th floor in building no.1 (Right)



**Figure F.10-** Layout of 5th floor in building no.1 in 3 Dimensions view

**(C) Area of 5th floor in building no.1:** From figure 3.19, total area of this floor is 44.84 square meters. Area of the first room is 30.4 square meters and area of the second room is 14.44 square meters. Shelves area is 9.2 square meters. Down stair area is 4.32 square meters and up stair area is 4.05 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (Up stair area + Down stair area).

Then available storage area of 4th floor in building no.1 =  $44.84 - (4.05 + 4.32) = 36.47$  square meters.

Operational space is an area which is still empty and warehouse operation such as put away, dispatch and order picking can be done in this area. Operational space of this floor can be calculated from storage area minus with shelves area.

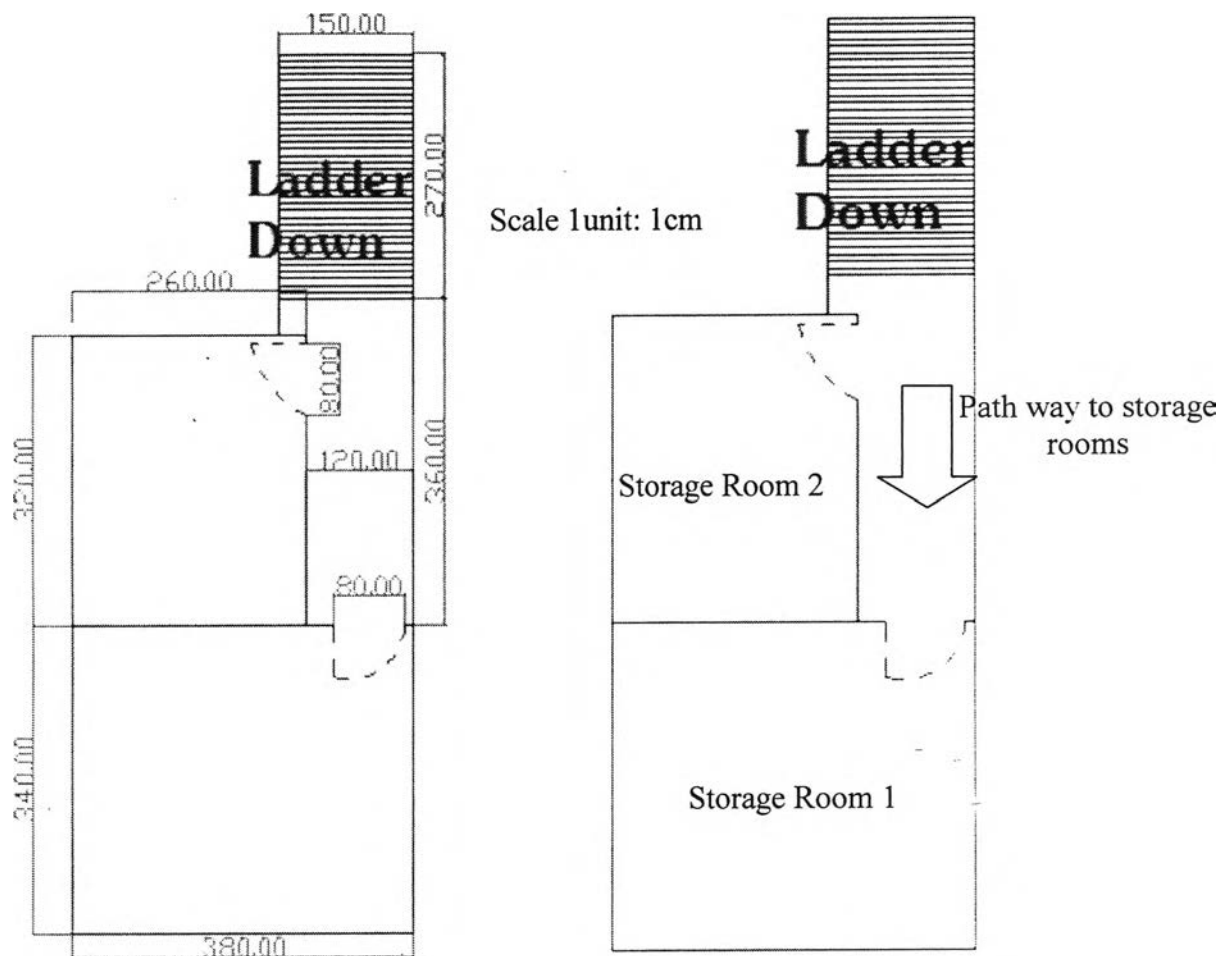
**Operational Space** = Storage area – Shelves area.

Then operational space of the 5th floor in building no.1 =  $36.47 - 9.2 = 27.27$  square meters.

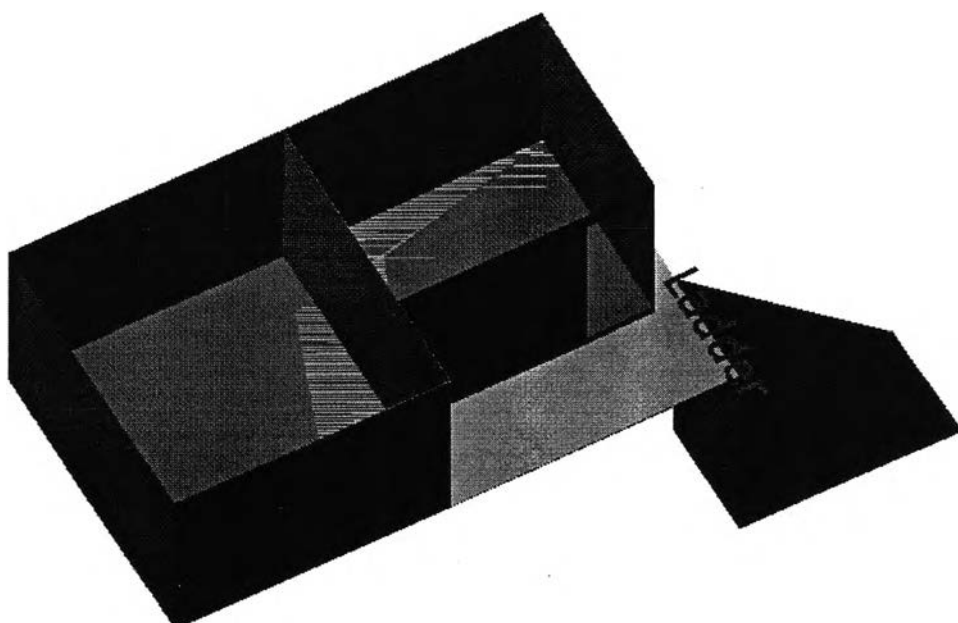
### 1.6 The sixth floor of building No.1

**(A) Detail of 6th floor in building no.1:** This floor is used as a storage area but there is no rack at this floor as it shows in figure 3.22. This floor is divided into 2 room and both rooms are used as a storage area. Items move in and out this floor through a ladder. There is no rack in this floor thus many items are stored by stacking on the floor. Items that are stored in this floor must have a light weight because they must be carried by human through the ladder. There is a path way from a ladder to storage rooms in this floor.

**(B) Dimension of 6th floor in building no.1:** Length of this floor is 7 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Size of the first room is 3.4 meters length and 3.8 meters width. Size of the second room is 3.2 meters length and 3.8 meters width.



**Figure F.11-** Layout of 6th floor in building no.1 with Dimension (Left) and Layout of 6th floor in building no.1(Right)



**Figure F.12-** Layout of 5th floor in building no.1 in 3 dimensions view



**(C)Area of 6th floor in building no.1:** Total area of this floor is 26.6 square meters but the areas that are used to stored item are just 2 storage rooms. Area of the first room is 12.92 square meters and area of the second room is 12.16 square meters. Path way area is 4.32 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from the sum of 2 areas of storage room.

**Available storage area** = Storage room 1 area + Storage room 2 area.  
Then available storage area of 6th floor in building no.1 =  $12.96+12.16 = 25.12$  square meters.

The second building has 6 floors and all the floors are used to storage items. Layout and detail of each floor in second building illustrates after this.

## **2. Layout of building no.2**

### **2.1 The first floor of building No.2**

**(A) Detail of the first floor in building no.2:** This floor is used to storage items which are frequently picked or very heavy. In this floor, there is a toilet and a small room behind a stair. Shelves and wooden pallet are used to storage some item but many items are still stored on the floor. Items move in and out this floor through an entrance, a lift and a stair.

Receiving activity has been done at this floor or in front of the building which is a public street due to there is no area which is specified to be a receiving area. Area at this floor is often used as buffer and stacking area by warehousing staffs before it was shipped or put away to storage but there is no area which is specified to be a buffer or stacking area. Thus this floor is quite mess up with many activities that done at this floor and it affects to the performance of warehouse activities.

**(B)Dimension of the first floor in building no.2:** Length of this floor is 11.5 meters and width is .80 meters. Height of the ceiling is 2.80 meters. Length of a small room is 1.8 meters and width of small room is 2.6 meters. Length of a toilet is 1.8 meters and width of a toilet is 1.2 meters.

**(C)Area of the first floor in building no.2:** From figure 3.25, total area of this floor is 43.7 square meters. Area of a small room is 4.68 square meters and area of the toilet is 2.16 square meters. Pallet area is 6 square meters and shelves area

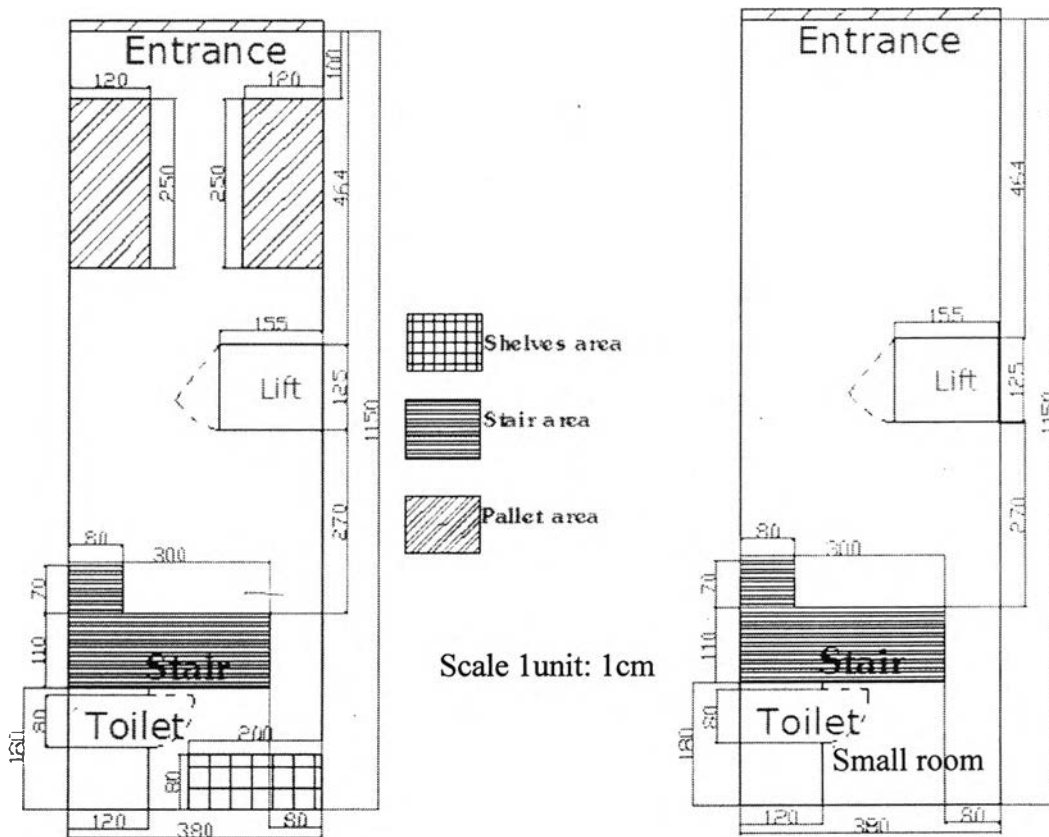
is 1.6 square meters. Stair area is 3.86 square meters and Lift area is 1.94 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available Storage area** = Total area – (Toilet area + Stair area + Lift area). Then available storage area of 1<sup>st</sup> floor in building no.2 = 43.7 – (2.16+3.86+1.94) = **35.74** square meters.

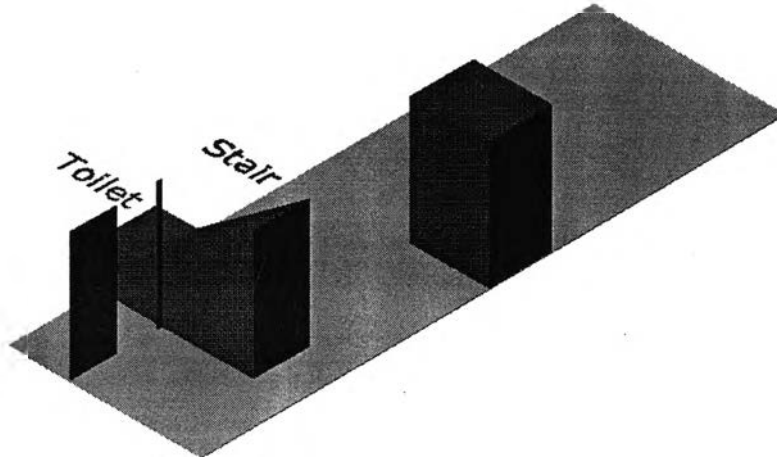
Operational space is an area which is still empty and warehouse operation such as put away, dispatch and order picking can be done in this area. Operational space of this floor can be calculated from storage area minus with shelves areas.

**Operational Space** = Storage area – Shelves area – Pallet area

Then operational space of the first floor in building no.2 = 35.74 – 1.6 - 6 = **28.14** square meters.

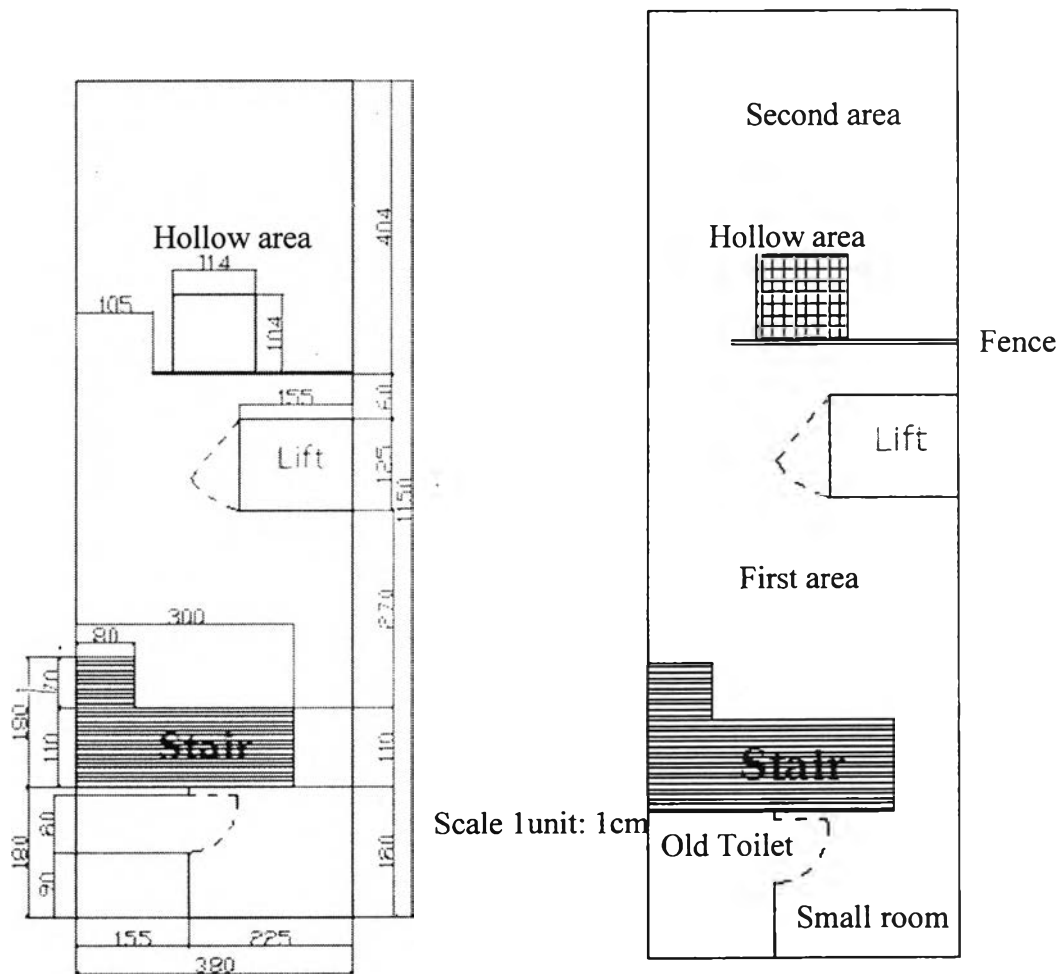


**Figure F.13-** Layout of 1st floor in building no.2 with storage equipment (Left) and Layout of 1st floor in building no.2 (Right)

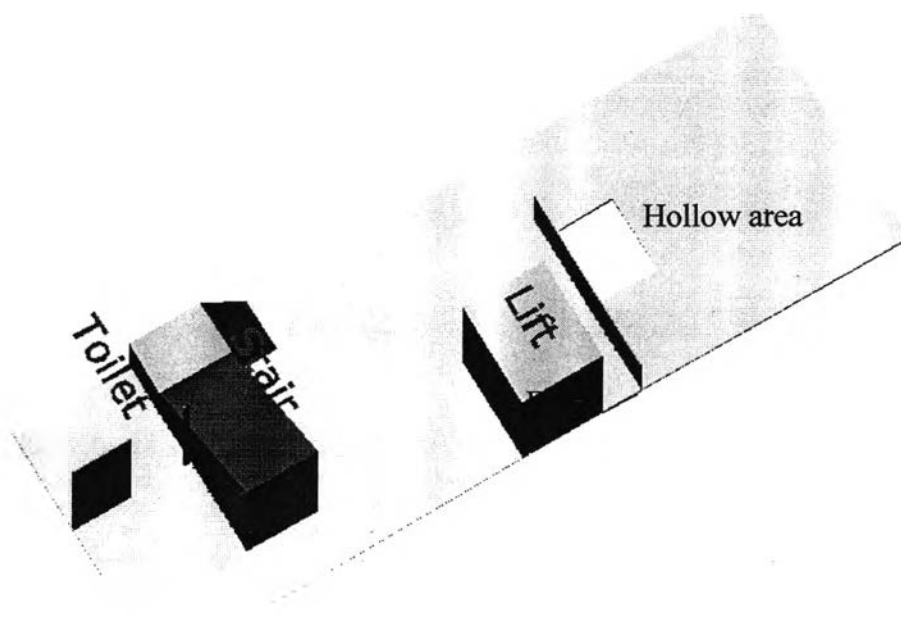


**Figure F.14-** Layout of 1st floor in building no.2 in 3 Dimensions view

**2.2 Floated floor between the first and second floor of building No.2**



**Figure F.15-**Layout of Floated floor in building no.2 with Dimension (Right) and Layout of Floated floor in building no.2 (Left)



**Figure F.16**-Layout of the floated floor in building no.2 in 3 Dimensions view

**(A)Detail of the floated floor in building no.2:** Floated floor is the floor between the first floor and second floor. This floor is assigned to be a storage area but there are no storage equipments in this floor as it shows in fig.3.28. Due to there are no storage equipments in this floor, many items are stored by stacking on the floor all over the place. This floor has an old toilet which is used to store item and a small storage room which is next to a toilet. As illustrated in figure 3.30, floor area has been divided into 2 parts by a short steel fence and there is a hollow area which is an area with no floor, in second area. Items move in and out this floor through a lift and a stair.

**(B)Dimension of the floated floor in building no.2:** Length of this floor is 11.5 meters and width is 3.80 meters. Height of the ceiling is 2.30 meters. Length of the first area is 4.55 meters and width is 3.8 meters. Length of the second area is 4.04 meters and width is 3.8 meters. Dimension of an old toilet is 1.80 meters lengths and 1.55 meters wide. Dimension of a small storage room is 1.80 meters lengths and 2.25 meters wide.

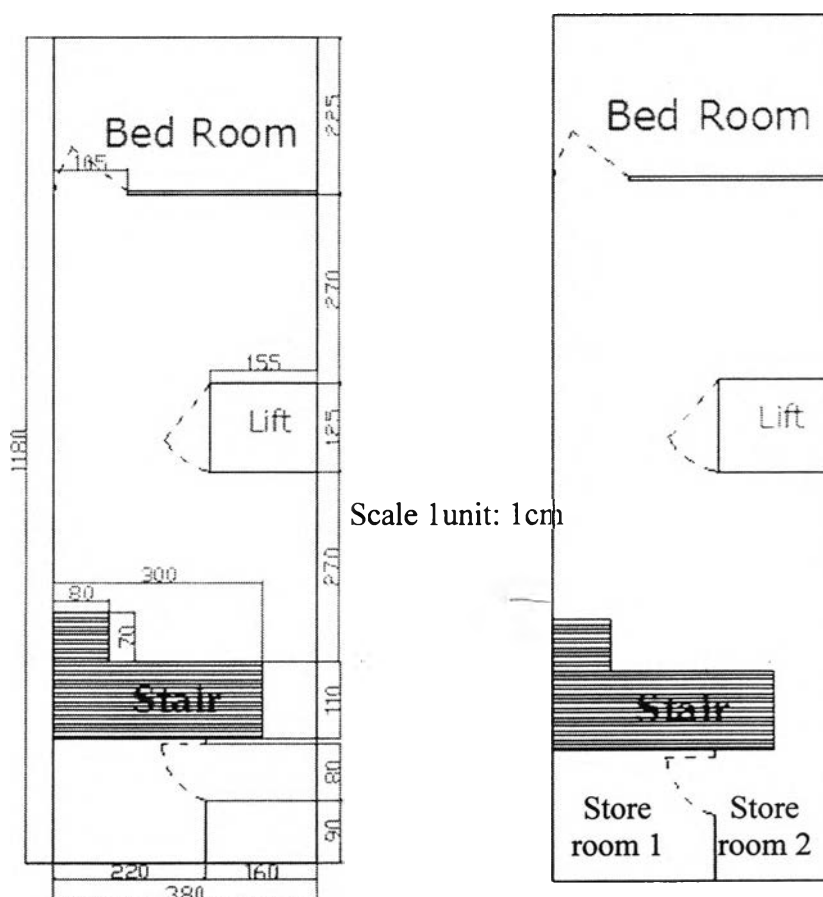
**(C)Area of the floated floor in building no.2:** From the fig.3.28, total area of this floor is 43.7 square meters and the lift area is 1.94 square meters. Stair area is 3.86 square meters and old toilet area is 2.79 square meters. The hollow area is 1.2 square meters. Due to there is no area that is specified to be an aisle or a stacking

area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

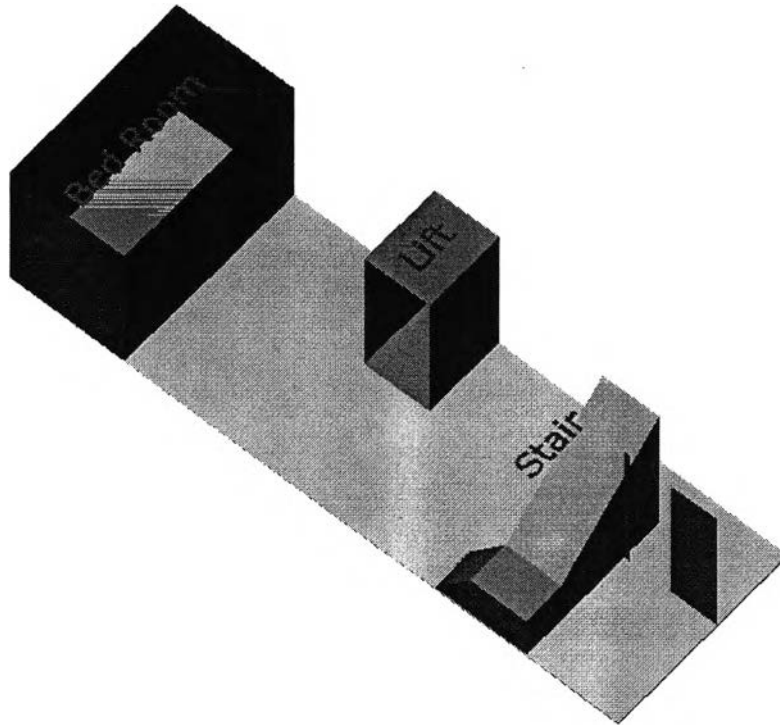
**Available storage area** = Total area – (lift area + stair area+ old toilet area+ hollow area). Then available storage area of floated floor in building no.1 =  $43.7 - (1.94 + 3.86 + 2.79 + 1.2) = 33.91$  square meters.

### 2.3 The second floor of building No.2

*(A) Detail of the second floor in building no.2:* This floor is used as a storage area but there is no storage equipment at this floor as it shows in figure 3.31. There is an operator's bed room on this floor. Bed room area on this floor is not be used as a storage area. Items in this floor are stored by stacking on a floor. This floor has 2 small rooms behind a stair and both rooms are used as a storage area. Items move in and out this floor through a stair or a lift. Items are stored very untidy on a floor.



**Figure F.17-**Layout of the 2<sup>nd</sup> floor in building no.2 with Dimension (Left) and Layout of 2<sup>nd</sup> floor in building no.2 (Right)



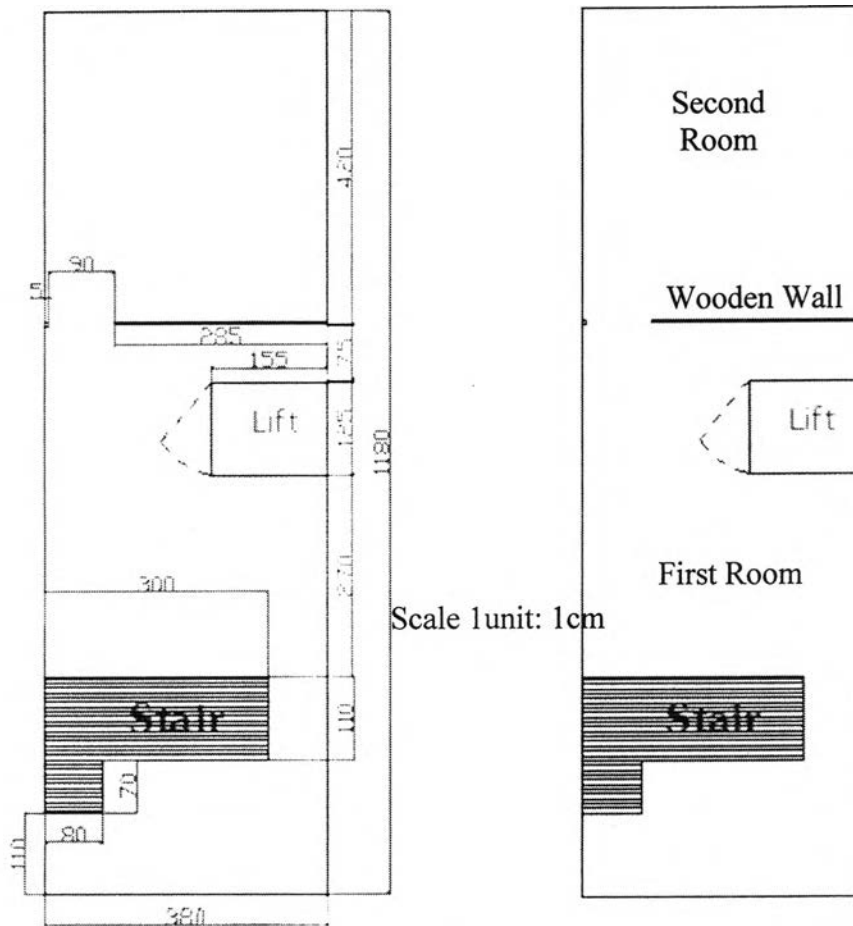
**Figure F.18**-Layout of Floated floor in building no.2 in 3 dimensions view

**(B) Dimension of the second floor in building no.2:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Dimension of the first room is 1.8 meters length and 2.2 meters width. Dimension of the second room is 1.8 meters length and 1.6 meters wide. Width of a bed room is 3.8 meters and length is 2.25 meters.

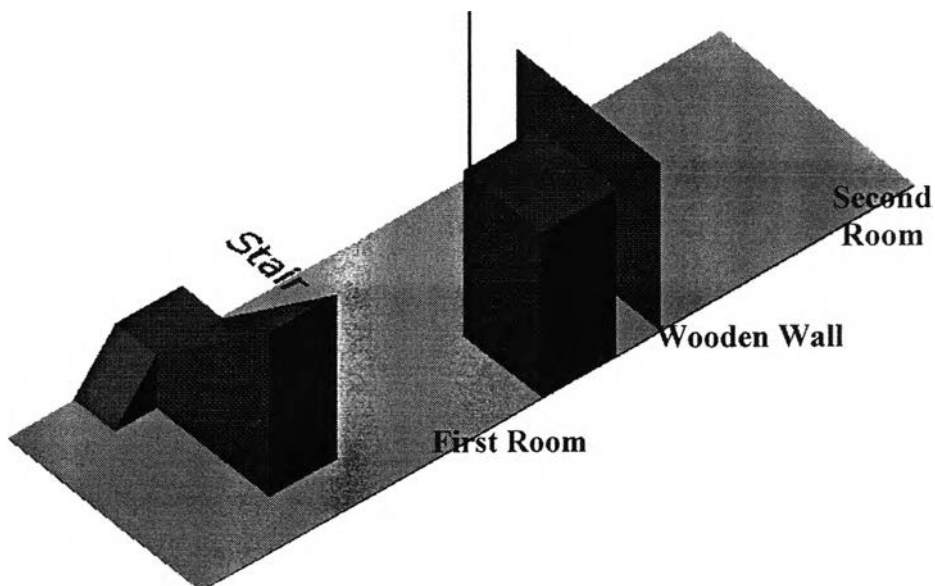
**(C) Area of the second floor in building no.2:** From the fig.3.31 total area of this floor is 44.84 square meters and the lift area is 1.94 square meters. Stair area is 3.86 square meters and bed room area is 8.1 square meters. Due to there is no area that is specified to be an aisle or a stacking area, areas that can be managed as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (lift area + stair area+ bed room area). Then available storage area of the second floor in building no.2 =  $44.84 - (1.94+3.86+8.1) = 30.94$  square meters.

### 2.4 The 3rd floor of building No.2



**Figure F.19-**Layout of the 3<sup>rd</sup> floor in building no.2 with dimension (Left) and Layout of 3<sup>rd</sup> floor in building no.2 (Right)



**Figure F.20-**Layout of 3rd floor in building no.2 in 3 dimensions view

**(A) Detail of the 3rd floor in building no.2:** This floor is used as a storage area but there is no storage equipment at this floor as it shows in figure 3.34. There are 2 rooms at this floor which are separated by a wooden wall and both rooms are used as a storage area. All items in this floor are stored by stacking on a floor. Items move in and out this floor through a stair or a lift. Items are stored very mess up on a floor.

**(B) Dimension of the 3rd floor in building no.2:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Dimension of the first room is 7.6 meters length and 3.8 meters width. Dimension of the second room is 4.2 meters length and 3.8 meters wide.

**(C) Area of the 3rd floor in building no.2:** From the fig.3.34, total area of this floor is 44.84 square meters and the lift area is 1.94 square meters. Stair area is 3.86 square meters. Due to there is no area that is assigned to be an aisle or a stacking area, areas that can be used as a storage area can be calculated from total area minus with areas of fixed obstacle.

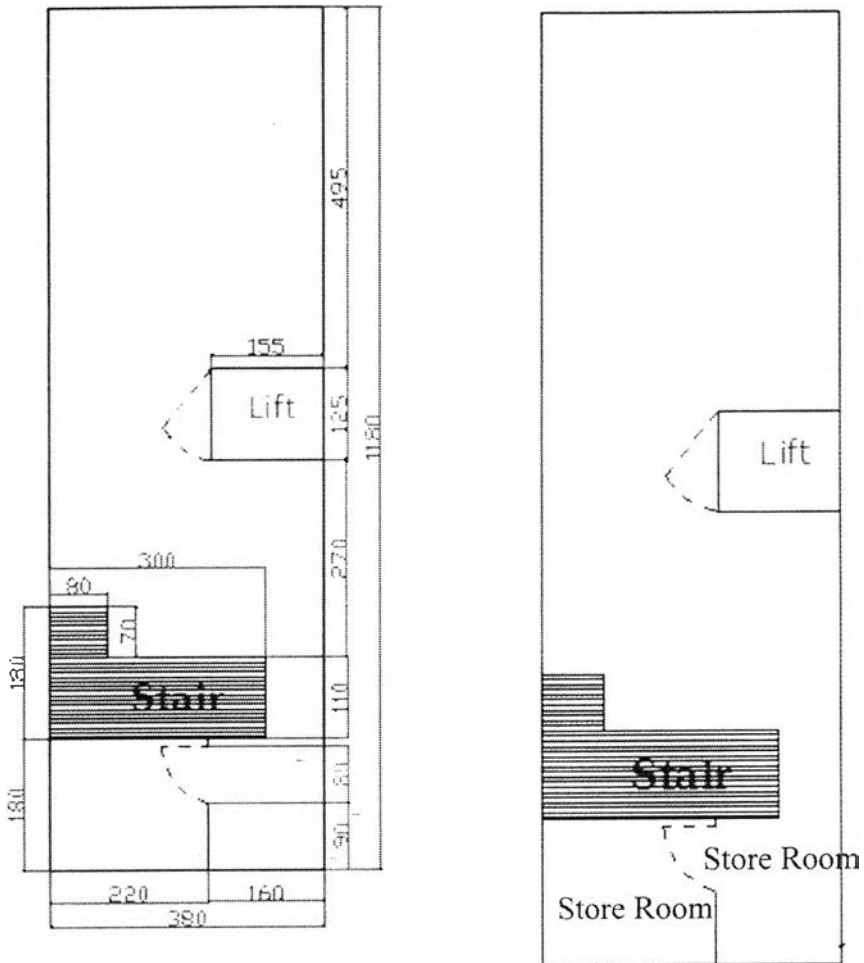
**Available storage area** = Total area – (lift area + stair area). Then available storage area of the third floor in building no.2 =  $44.84 - (1.94 + 3.86) = 39.04$  square meters.

## 2.5 The 4th floor of building No.2

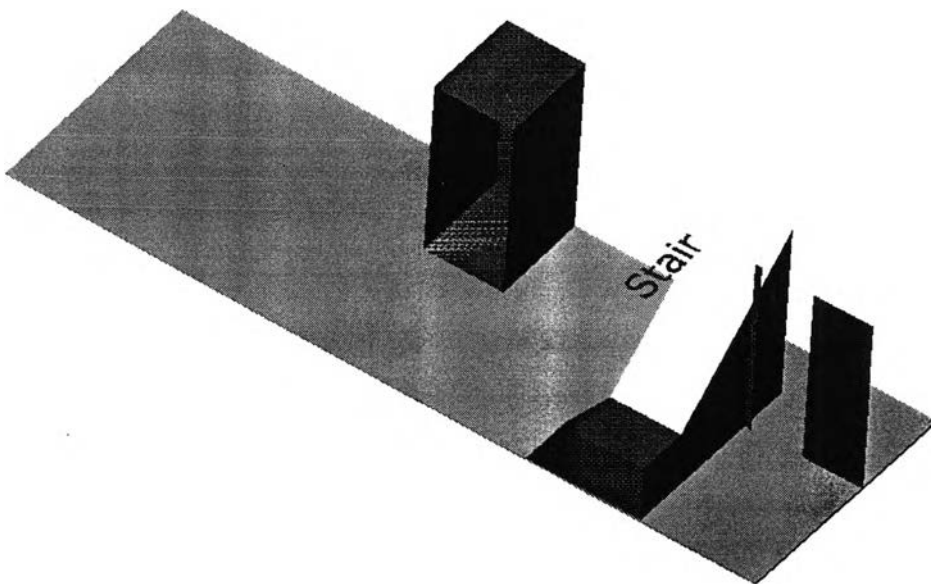
**(A)Detail of the 4th floor in building no.2:** This floor is used as a storage area but there is no storage equipment at this floor as it shows in figure 3.37. All items in this floor are stored by stacking on a floor all over the place. Items move in and out this floor through a stair or a lift. Items are stored very mess up on a floor. This floor has 2 small rooms behind a stair and both rooms are used as a storage area.

**(B)Dimension of the 4th floor in building no.2:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters. Dimension of the first storage room is 1.8 meters length and 2.2 meters width. Dimension of the second storage room is 1.8 meters length and 1.6 meters wide.





**Figure F.21**-Layout of the 4<sup>th</sup> floor in building no.2 with Dimension (Right) and Layout of 4<sup>th</sup> floor in building no.2 (Left)



**Figure F.22**-Layout of 4th floor in building no.2 in 3 Dimensions view

**(C) Area of the 4th floor in building no.2:** From the fig.3.37, total area of this floor is 44.84 square meters and the lift area is 1.94 square meters. Stair area is 3.86 square meters. Due to there is no area that is assigned to be an aisle or a stacking area, areas that can be used as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (lift area + stair area). Then available storage area of the 4th floor in building no.2 =  $44.84 - (1.94 + 3.86) = 39.04$  square meters.

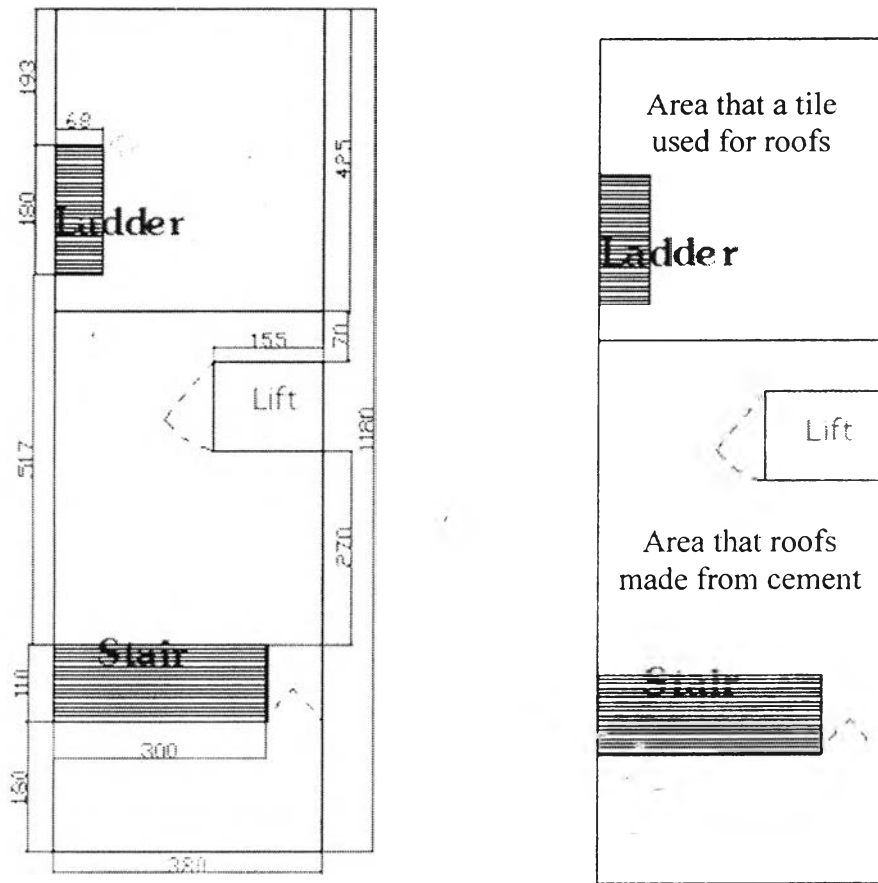
## 2.6 The 5th floor of building No.2

**(A) Detail of the 5th floor in building no.2:** This floor is used as a storage area but there is no storage equipment at this floor as it shows in figure 3.40. All items in this floor are stored by stacking on a floor all over the place. Items move in and out this floor through a stair or a lift. Items are stored very mess up on a floor. This floor has a stair to a lower floor and a ladder to a roof deck. Roof of this floor has 2 parts. The first part is a cement roof and another part made of a tile.

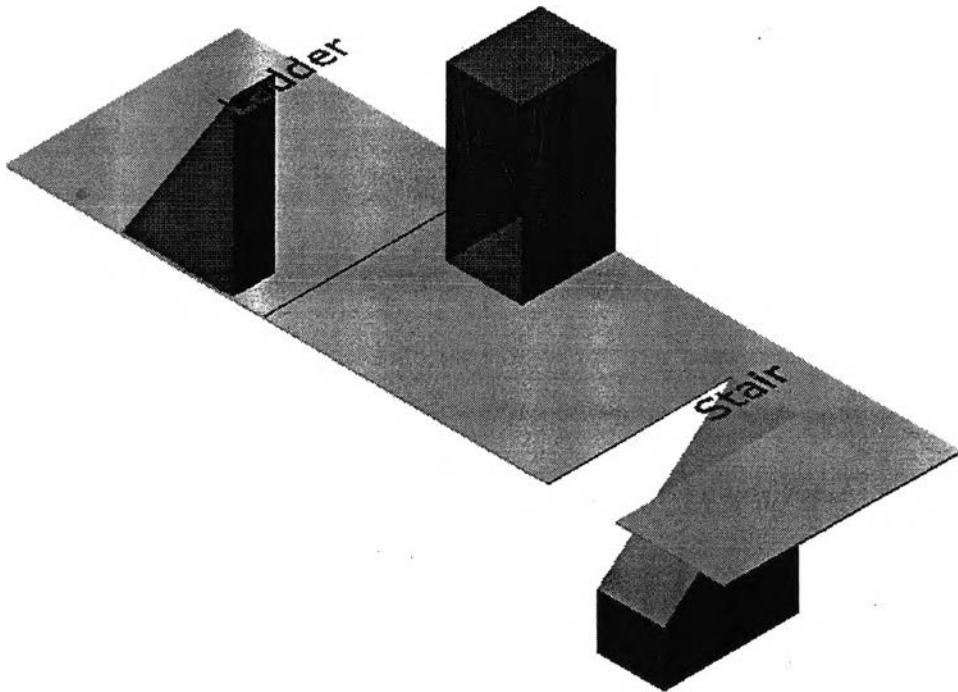
**(B) Dimension of the 5th floor in building no.2:** Length of this floor is 11.8 meters and width is 3.80 meters. Height of the ceiling is 2.80 meters.

**(C) Area of the 5th floor in building no.2:** From the fig.3.40, total area of this floor is 44.84 square meters and the lift area is 1.94 square meters. Stair area is 3.3 square meters. Due to there is no area that is assigned to be an aisle or a stacking area, areas that can be used as a storage area can be calculated from total area minus with areas of fixed obstacle.

**Available storage area** = Total area – (lift area + stair area). Then available storage area of the 5th floor in building no.2 =  $44.84 - (1.94 + 3.3) = 39.6$  square meters.



**Figure F.23-**Layout of the 5<sup>th</sup> floor in building no.2 with dimension (Left) and Layout of 5<sup>th</sup> floor in building no.2 (Right)



**Figure F.24-** Layout of 5th floor in building no.2 in 3 dimensions view

## BIOGRAPHY

Mr. Krittin Ongsri was born on January 25<sup>th</sup>, 1980 in Bangkok, Thailand. He graduated from Kasetsart University in 2001 with a Bachelor degree in Industrial Engineering. In 2002, he studied for the Master degree in Engineering Management at The Regional Centre for Manufacturing Systems Engineering, Faculty of Engineering, Chulalongkorn University and University of Warwick.

