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ภาคผนวก ก .

ตารางที่ 1.1 น.

.....  
 \* Type of Drum: FLUOROCARBON \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
700	28.0	0.5	1-49	106.0	283.0	10.1	0.0536
			1-48				
			1-46				
			1-47				
700	28.0	0.5	1-45	106.0	283.0	10.1	0.0536
			1-44				
			1-45				
			1-46				
1000	40.0	1.0	1-59	121.0	495.9	12.4	0.0657
			1-59				
			1-59				
1300	53.0	1.0	1-07	69.0	869.6	16.4	0.0870
			1-07				
			1-07				
1500	61.0	1.0	0-49	49.0	1224.5	20.1	0.1064
			0-49				
			0-49				
2000	84.0	1.0	0-28	28.0	2142.9	25.5	0.1352
			0-28				
			0-20				
2500	109.0	1.0	0-19	19.0	3157.9	29.0	0.1535
			0-19				
			0-19				

ตารางที่ 1.2 น.

.....  
 \* Type of Drum: FLUOROCARBON \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 2.0 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
700	28.0	0.5	2-27	147.0	204.1	7.3	0.039
			2-27				
1000	40.0	1.0	1-59	119.0	504.2	12.6	0.067
			1-59				
			1-59				
1300	53.0	1.0	1-07	67.0	875.5	16.9	0.090
			1-07				
			1-07				
1500	61.5	1.0	0-46	46.0	1304.3	21.2	0.112
			0-46				
			0-46				
2000	84.0	1.0	0-28	28.0	2142.9	25.5	0.135
			0-28				
			0-20				
2500	108.0	1.0	0-21	21.0	2857.1	26.5	0.140
			0-21				
			0-20				

ตารางที่ 1.3 ผ.

.....  
 \* Type of Drum: FLUOROCARBON \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 3.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500		0.5				0.0	0.0
700	28.0	0.5	2-36 2-36 2-36	156.0	192.3	6.9	0.036
1000	40.0	1.0	2-03 2-03 2-03	123.0	487.8	12.2	0.065
1300	52.5	1.0	1-00 1-00 1-00	68.0	882.4	16.8	0.089
1500	61.0	1.0	0-45 0-44 0-44	44.0	1363.6	22.4	0.118
2000	84.0	1.0	0-29 0-29 0-30	29.0	2069.0	24.6	0.131
2500	109.0	1.0	0-21 0-21 0-22	21.0	2857.1	26.2	0.139

ตารางที่ 1.4 ผ.

.....  
 \* Type of Drum: Stainless steel \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	29.0	1.0				0.0	0.0
700	28.0	0.5	1-30 1-29 1-30	90.0	333.3	11.9	0.063
1000	40.0	1.0	1-24 1-24 1-24	84.0	714.3	17.9	0.095
1300	52.5	1.0	0-53 0-53 0-53	53.0	1132.1	21.6	0.114
1500	61.5	1.0	0-41 0-41 0-41	41.0	1463.4	23.8	0.126
2000	84.5	1.0	0-25 0-24 0-25	25.0	2400.0	28.4	0.151
2500	108.5	1.0	0-19 0-19 0-17	19.0	3157.9	29.1	0.154

ตารางที่ 1.5 ผ.

.....  
 \* Type of Drum: Stainless steel \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 2.0 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
700	28.0	0.5	1-38 1-38 1-38	98.0	306.1	10.9	0.058
1000	40.0	1.0	1-22 1-22 1-22	82.0	731.7	18.3	0.097
1300	53.0	1.0	0-51 0-50 0-51	51.0	1176.5	22.2	0.118
1500	61.0	1.0	0-41 0-41 0-41	41.0	1463.4	24.0	0.127
2000	84.5	1.0	0-28 0-28 0-28	28.0	2142.9	25.4	0.134
2500	108.5	1.0	0-21 0-21 0-21	21.0	2857.1	26.3	0.140

ตารางที่ 1.6 ผ.

.....  
 \* Type of Drum: Stainless steel \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 3.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
700	28.0	0.5	1-47 1-47 1-47	107.0	280.4	10.0	0.053
1000	40.0	1.0	1-30 1-30 1-30	90.0	666.7	16.7	0.088
1300	53.0	1.0	0-55 0-55 0-55	55.0	1090.9	20.6	0.109
1500	61.5	1.0	0-44 0-43 0-43	43.0	1395.3	22.7	0.120
2000	84.5	1.0	0-28 0-28 0-28	28.0	2142.9	25.4	0.134
2500	108.5	1.0	0-21 0-21 0-21	21.0	2857.1	26.3	0.140

ตารางที่ 1.7 น.

Type of Drum: FVC. (smooth)  
 Condition: ONLY WATER  
 Depth of immersion in water: A= 0.5 cm.  
 Depth of immersion in oil: H= 0.0 cm.

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.1	2-34 2-34 2-34	154.0	39.0	1.9	0.010
700	28.0	0.5	1-54 1-54 1-54	114.0	263.2	9.4	0.050
1000	40.0	1.0	1-38 1-38 1-38	98.0	612.2	15.3	0.081
1300	53.0	1.0	1-01 1-00 1-00	60.0	1000.0	18.9	0.100
1500	62.0	1.0	0-46 0-46 0-46	46.0	1304.3	21.0	0.112
2000	84.5	1.0	0-20 0-26 0-27 0-26 0-27 0-27 0-27	27.0	2222.2	26.3	0.139
2500	108.5	1.0	0-20 0-20 0-19 0-20	20.0	3000.0	27.6	0.147

ตารางที่ 1.8 น.

Type of Drum: FVC. (smooth)  
 Condition: ONLY WATER  
 Depth of immersion in water: A= 2.0 cm.  
 Depth of immersion in oil: H= 0.0 cm.

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.1	1-31 1-32 1-32	92.0	65.2	3.3	0.017
700	28.0	0.5	2-02 2-02 2-01	122.0	245.9	8.8	0.047
1000	40.0	1.0	1-31 1-31 1-31	91.0	659.3	16.5	0.087
1300	53.0	1.0	0-55 0-55 0-55	55.0	1090.9	20.6	0.107
1500	62.0	1.0	0-44 0-45 0-45	45.0	1333.3	21.5	0.114
2000	84.5	1.0	0-20 0-28 0-28	28.0	2142.9	25.4	0.134
2500	108.5	1.0	0-21 0-22 0-21	21.0	2857.1	26.3	0.140

ตารางที่ 1.9 พ.

\* Type of Drum: PVC. (smooth) \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 3.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.1	2-09 2-10 2-09	129.0	46.5	2.3	0.012
700	28.0	0.5	2-28 2-20 2-28	148.0	202.7	7.2	0.038
1000	40.0	1.0	1-50 1-49 1-49	109.0	550.5	13.8	0.073
1300	53.0	1.0	1-03 1-04 1-03	83.0	952.4	18.0	0.095
1500	62.0	1.0	0-47 0-48 0-48	48.0	1250.0	20.2	0.107
2000	84.5	1.0	0-30 0-30 0-29	30.0	2000.0	23.7	0.125
2500	108.5	1.0	0-22 0-22 0-22	22.0	2727.3	25.1	0.133

ตารางที่ 1.10 พ.

\* Type of Drum: PVC. (rough) \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	TIME Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
700	28.0	0.5	2-16 2-16 2-16	136.0	220.6	7.9	0.042
1000	40.0	1.0	1-44 1-45 1-45	105.0	571.4	14.3	0.076
1300	53.0	1.0	1-04 1-04 1-04	64.0	937.5	17.7	0.094
1500	62.0	1.0	0-49 0-49 0-49	49.0	1224.5	19.7	0.105
2000	84.5	1.0	0-29 0-29 0-29	29.0	2069.0	24.5	0.130
2500	108.5	1.0	0-22 0-22 0-22	22.0	2727.3	25.1	0.133



ตารางที่ 1.11 พ.

\* Type of Drum: FVC. (rough) \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 2.0 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	TIME Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
700	28.0	0.5	2-26 2-25 2-25	145.0	206.9	7.4	0.039
1000	40.0	1.0	1-45 1-44 1-45	105.0	571.4	14.3	0.076
1300	53.0	1.0	1-02 1-02 1-02	62.0	967.7	18.3	0.097
1500	62.0	1.0	0-47 0-48 0-48	48.0	1250.0	20.2	0.107
2000	84.5	1.0	0-31 0-31 0-31	31.0	1935.5	22.9	0.121
2500	108.5	1.0	0-23 0-23 0-23	23.0	2608.7	24.0	0.127

ตารางที่ 1.12 พ.

\* Type of Drum: FVC. (rough) \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 3.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	TIME Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
700	28.0	0.5	2-48 2-47 2-47	167.0	179.6	6.4	0.034
1000	40.0	1.0	1-56 1-56 1-56	116.0	517.2	12.9	0.069
1300	53.0	1.0	1-05 1-05 1-05	65.0	923.1	17.4	0.092
1500	62.0	1.0	0-52 0-51 0-51	51.0	1176.5	19.0	0.101
2000	84.5	1.0	0-33 0-33 0-33	33.0	1818.2	21.5	0.114
2500	108.5	1.0	0-24 0-24 0-23	24.0	2500.0	23.0	0.122

ตารางที่ 1.13 พ.

.....  
 \* Type of Drum: TEAK  
 \* Condition: ONLY WATER  
 \* Depth of immersion in water: A= 0.5 cm.  
 \* Depth of immersion in oil: H= 0.0 cm.  
 .....

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
1000	40.0	1.0	1-46	105.0	571.4	14.3	0.076
			1-43				
			1-45				
			1-44				
			1-45				
			1-44				
1500	62.0	1.0	0-51	51.0	1176.5	19.0	0.101
			0-51				
			0-51				
			0-51				
			0-51				
2000	84.0	1.0	0-29	29.0	2069.0	24.6	0.131
			0-29				
			0-29				
			0-29				
			0-29				
2500	109.0	3.0	1-05	65.0	2769.2	25.4	0.135
			1-04				
			1-05				
			1-04				
			1-05				
3000	129.5	3.0	0-49	49.0	3673.5	28.4	0.150
			0-49				
			0-49				
			0-48				
			0-48				

ตารางที่ 1.14 พ.

.....  
 \* Type of Drum: TEAK  
 \* Condition: ONLY WATER  
 \* Depth of immersion in water: A= 2.0 cm.  
 \* Depth of immersion in oil: H= 0.0 cm.  
 .....

Motor Speed (rev/mn)	Real Speed (rev/mn)	Volume (l)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
1000	40.0	1.0	2-09	129.0	465.1	11.6	0.062
			2-10				
			2-09				
			2-10				
			2-09				
1500	62.0	1.0	0-52	52.0	1153.8	18.6	0.099
			0-52				
			0-52				
			0-52				
			0-52				
2000	84.0	1.0	0-34	33.0	1818.2	21.6	0.115
			0-35				
			0-34				
			0-33				
			0-33				
2500	109.0	3.0	1-17	77.0	2337.7	21.4	0.114
			1-17				
			1-17				
			1-17				
			1-17				
3000	129.5	3.0	0-51	51.0	3529.4	27.3	0.144
			0-51				
			0-51				
			0-51				
			0-51				

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ตารางที่ 1.15 พ.

.....  
 \* Type of Drum: TEAK \*  
 \* Condition: ONLY WATER \*  
 \* Depth of immersion in water: A= 3.5 cm. \*  
 \* Depth of immersion in oil: H= 0.0 cm. \*  
 .....

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
500	20.0	1.0			0.0	0.0	0.0
1000	40.0	1.0	2-10	131.0	458.0	11.5	0.061
			2-11				
			2-11				
			2-11				
1500	62.0	1.0	0-54	54.0	1111.1	17.9	0.095
			0-54				
			0-54				
			0-54				
2000	84.0	1.0	0-35	35.0	1714.3	20.4	0.108
			0-35				
			0-35				
			0-34				
2500	109.0	3.0	1-16	75.0	2400.0	22.0	0.117
			1-15				
			1-15				
			1-15				
3000	127.5	3.0	0-54	54.0	3333.3	25.7	0.136
			0-54				
			0-54				
			0-54				

ตารางที่ 2.1 น.

\* Type of Drum: FLUOROCARBON \*  
 \* Condition: WITH OIL \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 0.5 cm. \*

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	4-10 4-12 4-10	250.0	120.0	6.0	0.032
700	27.5	0.5	1-56 1-57 1-57	117.0	240.0	8.7	0.046
1000	39.0	1.0	1-57 1-56 1-57	117.0	512.8	13.1	0.070
1300	51.5	1.0	1-02 1-02 1-02	62.0	967.7	18.8	0.100
1500	61.0	1.0	0-45 0-46 0-45	45.0	1333.3	21.9	0.116
1700	69.0	1.0	0-36 0-36 0-36	36.0	1666.7	24.2	0.128
2000	84.5	1.0	0-28 0-27 0-27	27.0	2222.2	26.3	0.139
2200	92.0	1.0	0-23 0-23 0-23	23.0	2608.7	28.4	0.150
2500	108.5	1.0	0-18 0-18 0-18	18.0	3333.3	30.7	0.163

ตารางที่ 2.2 น.

\* Type of Drum: FLUOROCARBON \*  
 \* Condition: WITH OIL \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 1.0 cm. \*

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	3-08 3-09 3-08	180.0	120.0	6.0	0.032
700	27.0	0.5	1-32 1-31 1-32	92.0	240.0	8.9	0.047
1000	40.0	1.0	1-24 1-24 1-24	84.0	714.3	17.9	0.095
1300	52.0	1.0	0-51 0-52 0-52	52.0	1153.0	22.2	0.118
1500	61.0	1.0	0-36 0-37 0-37	37.0	1621.6	26.6	0.141
1700	70.0	1.0	0-29 0-28 0-28	28.0	2142.9	30.6	0.162
2000	83.0	1.0	0-22 0-23 0-23	23.0	2608.7	31.4	0.167
2200	93.0	1.0	0-20 0-20 0-20	20.0	3000.0	32.3	0.171
2500	108.5	1.0	0-15 0-16 0-16	16.0	3750.0	34.6	0.183

ตารางที่ 2.3 ผ.

Type of Drum: FLUOROCARBON  
 Condition: WITH OIL  
 Depth of immersion in water: A= 1.0 cm.  
 Depth of immersion in oil: H= 0.5 cm.

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	4-10 4-12 4-13	252.0	120.0	6.0	0.032
700	27.5	0.5	2-05 2-05 2-05	125.0	240.0	8.7	0.046
1000	39.0	1.0	1-50 1-49 1-49	109.0	550.5	14.1	0.075
1300	52.0	1.0	1-03 1-04 1-04	64.0	937.5	18.0	0.096
1500	61.0	1.0	0-48 0-48 0-48	48.0	1250.0	20.5	0.109
1700	69.0	1.0	0-35 0-36 0-36	36.0	1666.7	24.2	0.128
2000	84.0	1.0	0-26 0-26 0-27	26.0	2307.7	27.5	0.146
2200	93.0	1.0	0-23 0-22 0-22	22.0	2727.3	29.3	0.155
2500	108.5	1.0	0-18 0-18 0-18	18.0	3333.3	30.7	0.163

ตารางที่ 2.4 ผ.

Type of Drum: FLUOROCARBON  
 Condition: WITH OIL  
 Depth of immersion in water: A= 1.0 cm.  
 Depth of immersion in oil: H= 1.0 cm.

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	3-34 3-32 3-36	214.0	140.2	7.0	0.037
700	27.0	0.5	1-35 1-36 1-35	95.0	315.8	11.7	0.062
1000	40.0	1.0	1-24 1-26 1-26	86.0	697.7	17.4	0.092
1300	52.5	1.0	0-51 0-51 0-51	51.0	1176.5	22.4	0.119
1500	61.0	1.0	0-35 0-36 0-36	36.0	1666.7	27.3	0.145
1700	70.0	1.0	0-26 0-27 0-27	27.0	2222.2	31.7	0.168
2000	84.0	1.0	0-21 0-21 0-21	21.0	2857.1	34.0	0.180
2200	93.0	1.0	0-18 0-19 0-19	19.0	3157.9	34.0	0.180
2500	108.5	1.0	0-16 0-16 0-16	16.0	3750.0	34.6	0.183

A  
ตารางที่ 2.5 น.

.....							
		Stainless Steel					
		WITH OIL					
		Depth of immersion in water: A= 0.5 cm.					
		Depth of immersion in oil: H= 0.5 cm.					
.....							
Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5				0.0	0.0
500	19.0	0.5	3-57 3-58 3-56	211.0	142.2	7.5	0.040
700	27.0	1.0	2-33 2-34 2-34	154.0	389.6	14.4	0.076
1000	40.0	1.0	1-23 1-23 1-23	83.0	722.9	18.1	0.096
1300	52.0	1.0	0-51 0-51 0-51	51.0	1176.5	22.6	0.120
1500	62.0	1.0	0-35 0-35 0-35	35.0	1714.3	27.6	0.147
1700	69.0	1.0	0-20 0-20 0-20	28.0	2142.9	31.1	0.165
2000	84.0	1.0	0-20 0-20 0-20	20.0	3000.0	35.7	0.189
2200	93.0	1.0	0-10 0-10 0-10	18.0	3333.3	35.8	0.190
2500	108.5	1.0	0-15 0-16 0-15	15.0	4000.0	36.9	0.195

A  
ตารางที่ 2.6 น.

.....							
		Stainless Steel					
		WITH OIL					
		Depth of immersion in water: A= 0.5 cm.					
		Depth of immersion in oil: H= 1.0 cm.					
.....							
Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5				0.0	0.0
500	19.0	0.5	4-37 4-39 4-37	277.0	108.3	5.7	0.030
700	27.0	1.0	3-40 3-41 3-40	220.0	272.7	10.1	0.054
1000	39.5	1.0	1-49 1-47 1-50	109.0	550.5	13.9	0.074
1300	53.0	1.0	0-55 0-55 0-55	55.0	1090.9	20.6	0.109
1500	61.0	1.0	0-37 0-37 0-37	37.0	1621.6	26.6	0.141
1700	69.0	1.0	0-20 0-20 0-20	28.0	2142.9	31.1	0.165
2000	82.0	1.0	0-22 0-22 0-22	22.0	2727.3	33.3	0.176
2200	93.0	1.0	0-19 0-19 0-19	19.0	3157.9	34.0	0.180
2500	108.5	1.0	0-15 0-15 0-15	15.0	4000.0	36.9	0.195

ตารางที่ 2.7 น.

\* Type of Drum: Stainless Steel \*  
 \* Condition: WITH OIL \*  
 \* Depth of immersion in water: A= 1.0 cm. \*  
 \* Depth of immersion in oil: H= 0.5 cm. \*

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	19.0	0.5	3-03 3-04 3-03	183.0	163.9	8.6	0.046
700	27.0	1.0	2-33 2-34 2-34	143.0	419.6	15.5	0.082
1000	39.5	1.0	1-05 1-05 1-05	65.0	923.1	23.4	0.124
1500	51.0	1.0	0-43 0-43 0-43	43.0	1395.3	27.4	0.145
1500	61.0	1.0	0-33 0-33 0-33	33.0	1818.2	29.8	0.158
1700	69.0	1.0	0-25 0-25 0-25	25.0	2400.0	34.8	0.184
2000	83.0	1.0	0-19 0-19 0-19	19.0	3157.9	30.0	0.202
2200	93.0	1.0	0-17 0-17 0-17	17.0	3529.4	30.0	0.201
2500	100.5	1.0	0-15 0-15 0-15	15.0	4000.0	36.9	0.195

ตารางที่ 2.8 น.

\* Type of Drum: Stainless Steel \*  
 \* Condition: WITH OIL \*  
 \* Depth of immersion in water: A= 1.0 cm. \*  
 \* Depth of immersion in oil: H= 1.0 cm. \*

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	19.0	0.5	3-03 3-04 3-03	210.0	142.9	7.5	0.040
700	27.0	1.0	2-33 2-34 2-34	223.0	269.1	10.0	0.093
1000	39.5	1.0	1-05 1-05 1-05	93.0	645.2	16.3	0.087
1300	52.0	1.0	0-43 0-43 0-43	45.0	1333.3	25.6	0.136
1500	61.0	1.0	0-33 0-33 0-33	33.0	1818.2	29.8	0.158
1700	70.0	1.0	0-25 0-25 0-25	26.0	2307.7	33.0	0.175
2000	84.0	1.0	0-19 0-19 0-19	20.0	3000.0	35.7	0.189
2200	93.0	1.0	0-17 0-17 0-17	18.0	3333.3	35.0	0.190
2500	100.5	1.0	0-15 0-15 0-15	15.0	4000.0	36.9	0.195

## ตารางที่ 2.9 น.

Type of Drum: PVC. (smooth) Condition: WITH OIL Depth of immersion in water: H = 0.5 cm. Depth of immersion in oil: H = 0.5 cm.								
Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)	
300	12.0	0.5			0.0	0.0	0.0	
500	19.0	0.5	4-13 4-15 4-16	255.0	120.0	6.3	0.033	
700	28.0	0.5	2-16 2-16 2-16	136.0	240.0	8.4	0.043	
1000	40.0	1.0	1-44 1-44 1-43	104.0	576.9	14.4	0.076	
1300	52.0	1.0	1-05 1-05 1-05	65.0	923.1	17.8	0.094	
1500	61.0	1.0	0-50 0-50 0-50	50.0	1200.0	19.7	0.104	
1700	70.0	1.0	0-36 0-36 0-36	36.0	1666.7	23.8	0.126	
2000	83.0	1.0	0-30 0-31 0-31	31.0	1935.5	23.5	0.124	
2200	93.0	1.0	0-26 0-26 0-27	26.0	2307.7	24.8	0.132	
2500	108.0	1.0	0-20 0-21 0-20	20.0	3000.0	27.8	0.147	

## ตารางที่ 2.10 น.

Type of Drum: PVC. (smooth) Condition: WITH OIL Depth of immersion in water: H = 0.5 cm. Depth of immersion in oil: H = 1.0 cm.								
Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)	
300	12.0	0.5			0.0	0.0	0.0	
500	19.0	0.5	3-47 3-48 3-49	228.0	131.6	6.9	0.037	
700	27.5	0.5	1-45 1-45 1-46	105.0	285.7	10.4	0.053	
1000	40.0	1.0	1-58 1-58 1-58	118.0	508.5	12.7	0.067	
1500	53.0	1.0	0-59 0-59 0-59	59.0	1616.9	19.2	0.102	
1500	62.0	1.0	0-43 0-43 0-43	43.0	1595.3	22.5	0.119	
1700	70.0	1.0	0-35 0-35 0-35	35.0	1714.3	24.5	0.130	
2000	84.0	1.0	0-27 0-27 0-27	27.0	2222.2	26.5	0.140	
2200	93.0	1.0	0-23 0-22 0-23	23.0	2608.7	28.1	0.149	
2500	108.0	1.0	0-18 0-18 0-18	18.0	3333.3	30.7	0.164	





ตารางที่ 2.11 น

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Type of Drum: PVC. (smooth)

Condition: WITH OIL

Depth of immersion in water: A= 1.0 cm.

Depth of immersion in oil: H= 0.5 cm.

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Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	19.0	0.5	4-57 4-58 4-59	298.0	110.7	5.8	0.031
700	27.5	0.5	2-41 2-41 2-42	161.0	186.3	6.0	0.036
1000	40.0	1.0	1-35 1-35 1-35	95.0	631.6	15.0	0.084
1300	53.0	1.0	0-58 0-58 0-58	58.0	1034.5	19.5	0.103
1500	61.0	1.0	0-49 0-49 0-49	49.0	1224.5	20.1	0.106
1700	70.0	1.0	0-37 0-37 0-37	37.0	1621.6	23.2	0.123
2000	84.0	1.0	0-28 0-27 0-27	29.0	2067.0	24.6	0.131
2200	93.0	1.0	0-25 0-25 0-24	25.0	2400.0	25.0	0.137
2500	108.0	1.0	0-19 0-19 0-19	19.0	3157.9	29.2	0.155

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ตารางที่ 2.12 น.

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Type of Drum: PVC. (smooth)

Condition: WITH OIL

Depth of immersion in water: A= 1.0 cm.

Depth of immersion in oil: H= 1.0 cm.

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Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	19.0	0.5	3-39 3-42 3-41	221.0	139.7	7.1	0.038
700	27.5	0.5	1-46 1-40 1-47	107.0	200.4	10.2	0.054
1000	40.5	1.0	1-17 1-19 1-19	79.0	759.5	10.8	0.099
1300	53.0	1.0	0-50 0-50 0-50	50.0	1200.0	22.6	0.120
1500	61.5	1.0	0-37 0-37 0-37	37.0	1621.6	26.4	0.140
1700	70.0	1.0	0-33 0-33 0-33	33.0	1818.2	26.0	0.138
2000	84.0	1.0	0-26 0-26 0-26	26.0	2307.7	27.5	0.146
2200	93.0	1.0	0-22 0-22 0-22	22.0	2727.3	29.3	0.155
2500	108.0	1.0	0-10 0-10 0-10	10.0	3333.3	30.9	0.164

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ตารางที่ 2.13 พ.

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- Type of Drum: PVC. (rough)
- Condition: WITH OIL
- Depth of immersion in water: H= 0.5 cm.
- Depth of immersion in oil: H= 0.5 cm.

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Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	4-02 4-03 4-02	242.0	124.0	6.2	0.033
700	28.0	0.5	1-20 1-27 1-27	07.0	344.0	12.3	0.065
1000	40.5	1.0	1-46 1-45 1-45	105.0	571.4	14.1	0.075
1500	53.0	1.0	1-03 1-03 1-03	63.0	952.4	18.0	0.095
1500	62.0	1.0	0-48 0-48 0-48	40.0	1250.0	20.2	0.107
1700	70.5	1.0	0-37 0-37 0-37	37.0	1621.6	23.0	0.122
2000	84.0	1.0	0-27 0-27 0-27	27.0	2272.2	26.5	0.140
2200	93.0	1.0	0-23 0-23 0-23	23.0	2608.7	28.1	0.149
2500	108.0	1.0	0-20 0-19 0-19	19.0	3157.9	29.2	0.155

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ตารางที่ 2.14 พ.

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- Type of Drum: PVC. (rough)
- Condition: WITH OIL
- Depth of immersion in water: H= 0.5 cm.
- Depth of immersion in oil: H= 1.0 cm.

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Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	3-25 3-27 3-28	206.0	145.6	7.3	0.039
700	28.0	0.5	2-02 2-03 2-02	122.0	245.9	8.8	0.047
1000	40.5	1.0	1-44 1-44 1-45	104.0	576.9	14.2	0.075
1500	53.0	1.0	1-06 1-05 1-05	65.0	923.1	17.4	0.092
1500	62.0	1.0	0-47 0-46 0-48	46.0	1304.3	21.0	0.112
1700	70.5	1.0	0-36 0-36 0-36	36.0	1666.7	23.6	0.125
2000	84.0	1.0	0-28 0-29 0-29	29.0	2049.0	24.6	0.131
2200	93.0	1.0	0-23 0-23 0-23	23.0	2608.7	28.1	0.149
2500	108.0	1.0	0-10 0-18 0-18	19.0	3157.9	29.2	0.155

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ตารางที่ 2.15 พ.

Type of Drum: FVC. (rough)  
 Condition: WITH OIL  
 Depth of immersion in water: A= 1.0 cm.  
 Depth of immersion in oil: H= 0.5 cm.

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	3-23 3-22 3-22	202.0	148.5	7.4	0.039
700	28.0	0.5	1-16 1-16 1-16	76.0	394.7	14.1	0.075
1000	40.5	1.0	1-11 1-10 1-10	70.0	857.1	21.2	0.112
1300	53.0	1.0	0-48 0-49 0-49	49.0	1224.5	23.1	0.122
1500	62.0	1.0	0-36 0-36 0-36	36.0	1666.7	26.9	0.142
1700	70.5	1.0	0-27 0-27 0-27	27.0	2222.2	31.5	0.167
2000	84.0	1.0	0-22 0-22 0-22	22.0	2727.3	32.3	0.172
2200	93.0	1.0	0-18 0-18 0-18	18.0	3333.3	35.8	0.190
2500	108.0	1.0	0-15 0-15 0-15	15.0	4000.0	37.0	0.196

ตารางที่ 2.16 พ.

Type of Drum: FVC. (rough)  
 Condition: WITH OIL  
 Depth of immersion in water: A= 1.0 cm.  
 Depth of immersion in oil: H= 1.0 cm.

Motor Speed (rev/min)	Real Speed (rev/min)	Volume (l)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
300	12.0	0.5			0.0	0.0	0.0
500	20.0	0.5	3-15 3-15 3-15	195.0	153.8	7.7	0.041
700	27.0	0.5	1-26 1-25 1-26	86.0	348.8	12.9	0.068
1000	40.0	1.0	1-15 1-15 1-15	75.0	800.0	20.0	0.106
1300	52.0	1.0	0-47 0-47 0-48	47.0	1276.6	24.5	0.130
1500	61.0	1.0	0-36 0-36 0-36	36.0	1666.7	27.3	0.145
1700	70.0	1.0	0-28 0-28 0-28	28.0	2142.9	30.6	0.162
2000	83.5	1.0	0-22 0-22 0-21	22.0	2727.3	32.7	0.173
2200	94.0	1.0	0-18 0-18 0-19	18.0	3333.3	35.5	0.188
2500	108.5	1.0	0-15 0-15 0-15	15.0	4000.0	36.9	0.195

ตารางที่ 2.17 ผ.

\*\*\*\*\*  
 \* Type of drum : TEAK \*  
 \* Condition : WITH DIL \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 0.5 cm. \*  
 \*\*\*\*\*

* Motor Speed * (rev/mn)	* Real Speed * (rev/mn)	* Total Volume * (l)	* Oil Volume * (l)	* Water Volume * (l)	* Time * (mn)	* Time Average * (s)	* Oil Recovery Flow * (cm <sup>3</sup> /mn)	* Oil Recovery Rate * (cm <sup>3</sup> /rev)	* Oil Film Thickness * (mm)	* Water Recovery Flow * (cm <sup>3</sup> /mn)	* Water Recovery Rate * (cm <sup>3</sup> /rev)	* Water Film Thickness * (mm)
* 500 *	* 12.0 *	* 0.5 *	* *	* *	* *	* *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *
* 500 *	* 19.0 *	* 0.5 *	* 0.28 *	* 0.22 *	* 5-11 *	* 311.0 *	* 54.0 *	* 2.8 *	* 0.015 *	* 42.4 *	* 2.2 *	* 0.012 *
* 700 *	* 28.0 *	* 0.5 *	* 0.255 *	* 0.245 *	* 3-02 *	* 182.0 *	* 84.1 *	* 3.0 *	* 0.016 *	* 80.6 *	* 2.9 *	* 0.015 *
* 1000 *	* 40.0 *	* 1.0 *	* 0.72 *	* 0.28 *	* 1-34 *	* 94.0 *	* 459.6 *	* 11.5 *	* 0.061 *	* 178.7 *	* 4.5 *	* 0.024 *
* 1300 *	* 52.0 *	* 1.0 *	* 0.68 *	* 0.32 *	* 0-59 *	* 59.0 *	* 691.5 *	* 13.3 *	* 0.070 *	* 325.4 *	* 6.3 *	* 0.031 *
* 1500 *	* 61.0 *	* 1.0 *	* 0.67 *	* 0.33 *	* 0-46 *	* 46.0 *	* 873.9 *	* 14.3 *	* 0.076 *	* 430.4 *	* 7.1 *	* 0.037 *
* 1700 *	* 70.0 *	* 1.0 *	* 0.6 *	* 0.4 *	* 0-37 *	* 37.0 *	* 973.0 *	* 13.5 *	* 0.074 *	* 648.6 *	* 9.3 *	* 0.049 *
* 2000 *	* 84.0 *	* 1.0 *	* 0.5 *	* 0.5 *	* 0-30 *	* 30.0 *	* 1000.0 *	* 11.9 *	* 0.063 *	* 1000.0 *	* 11.9 *	* 0.063 *
* 2200 *	* 93.0 *	* 1.0 *	* 0.47 *	* 0.53 *	* 0-26 *	* 26.0 *	* 1084.6 *	* 11.7 *	* 0.062 *	* 1223.1 *	* 13.2 *	* 0.070 *
* 2500 *	* 108.0 *	* 1.0 *	* 0.41 *	* 0.59 *	* 0-22 *	* 22.0 *	* 1118.2 *	* 10.4 *	* 0.055 *	* 1609.1 *	* 14.9 *	* 0.079 *

ตารางที่ 2.18 ผ.

.....  
 \* Type of drum : TEAK \*  
 \* Condition : WITH DIL \*  
 \* Depth of immersion in water: A= 0.5 cm. \*  
 \* Depth of immersion in oil: H= 1.0 cm. \*  
 .....

* Motor Speed * (rev/mn)	* Real Speed * (rev/mn)	* Total Volume * (l)	* Dil Volume * (l)	* Water Volume * (l)	* Time * (mn)	* Time Average * (s)	* Dil Flow * (cm <sup>3</sup> /mn)	* Dil Recovery Rate * (cm <sup>3</sup> /rev)	* Dil Film Thickness * (mm)	* Water Flow * (cm <sup>3</sup> /mn)	* Water Recovery Rate * (cm <sup>3</sup> /rev)	* Water Film Thickness * (mm)
* 300 *	* 12.0 *	* 0.5 *	* *	* *	* *	* *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *
* 500 *	* 19.0 *	* 0.5 *	* 0.405 *	* 0.095 *	* 4-22 *	* 262.0 *	* 92.7 *	* 4.9 *	* 0.026 *	* 21.8 *	* 1.1 *	* 0.006 *
* 700 *	* 28.0 *	* 0.5 *	* 0.47 *	* 0.03 *	* 1-27 *	* 87.0 *	* 324.1 *	* 11.6 *	* 0.061 *	* 20.7 *	* 0.7 *	* 0.004 *
* 1000 *	* 40.0 *	* 1.0 *	* 0.97 *	* 0.03 *	* 1-22 *	* 82.0 *	* 709.8 *	* 17.7 *	* 0.094 *	* 22.0 *	* 0.5 *	* 0.005 *
* 1300 *	* 52.0 *	* 1.0 *	* 0.96 *	* 0.04 *	* 0-52 *	* 52.0 *	* 1107.7 *	* 21.3 *	* 0.113 *	* 46.2 *	* 0.9 *	* 0.005 *
* 1500 *	* 61.0 *	* 1.0 *	* 0.915 *	* 0.085 *	* 0-42 *	* 42.0 *	* 1507.1 *	* 21.4 *	* 0.114 *	* 121.4 *	* 2.0 *	* 0.011 *
* 1700 *	* 70.0 *	* 1.0 *	* 0.885 *	* 0.115 *	* 0-32 *	* 32.0 *	* 1659.4 *	* 23.7 *	* 0.126 *	* 215.6 *	* 3.1 *	* 0.016 *
* 2000 *	* 84.0 *	* 1.0 *	* 0.84 *	* 0.16 *	* 0-27 *	* 27.0 *	* 1866.7 *	* 22.2 *	* 0.118 *	* 355.6 *	* 4.2 *	* 0.022 *
* 2200 *	* 95.0 *	* 1.0 *	* 0.835 *	* 0.165 *	* 0-24 *	* 24.0 *	* 2087.5 *	* 22.4 *	* 0.119 *	* 412.5 *	* 4.4 *	* 0.024 *
* 2500 *	* 108.0 *	* 1.0 *	* 0.795 *	* 0.205 *	* 0-21 *	* 21.0 *	* 2271.4 *	* 21.0 *	* 0.111 *	* 595.7 *	* 5.4 *	* 0.029 *

ตารางที่ 2.19 พ.

.....  
 \* Type of drum : TEAK \*  
 \* Condition : WITH DIL \*  
 \* Depth of immersion in water: A= 1.0 cm. \*  
 \* Depth of immersion in oil: H= 0.5 cm. \*  
 .....

* Motor Speed *	* Real Speed *	* Total Volume *	* Oil Volume *	* Water Volume *	* Time (mn) *	* Time Average (s) *	* Oil Flow (cm <sup>3</sup> /mn) *	* Oil Recovery (cm <sup>3</sup> /rev) *	* Oil Film Thickness (mm) *	* Water Flow (cm <sup>3</sup> /mn) *	* Water Recovery (cm <sup>3</sup> /rev) *	* Water Film Thickness (mm) *
* 300 *	* 12.0 *	* 0.5 *	* *	* *	* *	* *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *	* 0.0 *
* 500 *	* 19.0 *	* 0.5 *	* 0.235 *	* 0.265 *	* 5-18 *	* 318.0 *	* 44.3 *	* 2.3 *	* 0.012 *	* 50.0 *	* 2.6 *	* 0.014 *
* 700 *	* 28.0 *	* 0.5 *	* 0.2 *	* 0.3 *	* 2-10 *	* 130.0 *	* 92.3 *	* 3.3 *	* 0.017 *	* 138.5 *	* 4.9 *	* 0.026 *
* 1000 *	* 40.0 *	* 1.0 *	* 0.67 *	* 0.33 *	* 1-44 *	* 104.0 *	* 386.5 *	* 9.7 *	* 0.051 *	* 190.4 *	* 4.6 *	* 0.025 *
* 1300 *	* 52.0 *	* 1.0 *	* 0.66 *	* 0.34 *	* 1-00 *	* 60.0 *	* 660.0 *	* 12.7 *	* 0.067 *	* 340.0 *	* 6.5 *	* 0.035 *
* 1500 *	* 61.0 *	* 1.0 *	* 0.61 *	* 0.39 *	* 0-47 *	* 47.0 *	* 778.7 *	* 12.8 *	* 0.068 *	* 497.9 *	* 8.2 *	* 0.043 *
* 1700 *	* 70.0 *	* 1.0 *	* 0.55 *	* 0.45 *	* 0-37 *	* 37.0 *	* 891.9 *	* 12.7 *	* 0.068 *	* 729.7 *	* 10.4 *	* 0.055 *
* 2000 *	* 84.0 *	* 1.0 *	* 0.4 *	* 0.6 *	* 0-29 *	* 29.0 *	* 827.6 *	* 9.9 *	* 0.052 *	* 1241.4 *	* 14.8 *	* 0.078 *
* 2200 *	* 93.0 *	* 1.0 *	* 0.35 *	* 0.65 *	* 0-27 *	* 27.0 *	* 777.8 *	* 8.4 *	* 0.044 *	* 1444.4 *	* 15.5 *	* 0.082 *
* 2500 *	* 108.0 *	* 1.0 *	* 0.32 *	* 0.68 *	* 0-22 *	* 22.0 *	* 672.7 *	* 8.1 *	* 0.043 *	* 1854.5 *	* 17.2 *	* 0.091 *

ตารางที่ 2.20 พ.

.....  
 \* Type of drum : TEAK \*  
 \* Condition : WITH DIL \*  
 \* Depth of immersion in water: A= 1.0 cm. \*  
 \* Depth of immersion in oil: H= 1.0 cm. \*  
 .....

Motor Speed (rev/mn)	Real Speed (rev/mn)	Total Volume (l)	Dil Volume (l)	Water Volume (l)	Time (mn)	Time Average (s)	Dil Flow (cm <sup>3</sup> /mn)	Dil Recovery Rate (cm <sup>3</sup> /rev)	Dil Film Thickness (mm)	Water Recovery Flow (cm <sup>3</sup> /mn)	Water Recovery Rate (cm <sup>3</sup> /rev)	Water Film Thickness (mm)
300	12.0	0.5					0.0	0.0	0.0	0.0	0.0	0.0
500	19.0	0.5	0.415	0.085	4-15	255.0	97.6	5.1	0.027	20.0	1.1	0.006
700	28.0	0.5	0.455	0.045	1-30	90.0	305.3	10.8	0.057	30.0	1.1	0.006
1000	40.0	1.0	0.945	0.055	1-20	80.0	708.8	17.7	0.094	41.3	1.0	0.005
1300	52.0	1.0	0.935	0.065	0-49	49.0	1144.9	22.0	0.117	75.6	1.5	0.008
1500	61.0	1.0	0.9	0.1	0-40	40.0	1350.0	22.1	0.117	150.0	2.5	0.015
1700	70.0	1.0	0.85	0.15	0-33	33.0	1545.5	22.1	0.117	272.7	3.9	0.021
2000	84.0	1.0	0.83	0.17	0-28	28.0	1778.6	21.2	0.112	364.3	4.3	0.023
2200	93.0	1.0	0.805	0.195	0-24	24.0	2012.5	21.6	0.115	487.5	5.2	0.028
2500	108.0	1.0	0.78	0.22	0-22	22.0	2127.3	19.7	0.104	600.0	5.6	0.029

ตารางที่ 3.1 น.

Type of Drum .Fluorocarbon  
 Condition .With Oil  
 Depth of immersion in water .A = 1.0 cm.  
 Depth of immersion in oil .H = 2.0 cm.

* Speed 20 rev/min *	* Speed 32 rev/min *	* Speed 40 rev/min *
* Time (min) * Volume(L) *	* Time (min) * Volume(L) *	* Time (min) * Volume(L) *
* 2 * 0.286 *	* 2 * 0.702 *	* 2 * 1.396 *
* 4 * 0.548 *	* 4 * 1.398 *	* 4 * 2.795 *
* 6 * 0.802 *	* 6 * 2.206 *	* 6 * 4.202 *
* 8 * 1.053 *	* 8 * 2.854 *	* 8 * 5.588 *
* 10 * 1.330 *	* 10 * 3.435 *	* 10 * 7.005 *
* 12 * 1.584 *	* 12 * 4.096 *	* 12 * 7.456 *
* 14 * 1.850 *	* 14 * 4.775 *	* 14 * 7.624 *
* 16 * 2.105 *	* 16 * 5.462 *	* 16 * 7.855 *
* 18 * 2.364 *	* 18 * 6.120 *	* 30 * 7.865 *
* 20 * 2.625 *	* 20 * 6.802 *	* * * *
* 24 * 3.150 *	* 22 * 7.410 *	* * * *
* 28 * 3.676 *	* 24 * 7.625 *	* * * *
* 30 * 3.935 *	* 26 * 7.788 *	* * * *
* 32 * 4.195 *	* 30 * 7.860 *	* * * *
* 40 * 5.242 *	* 40 * 7.870 *	* * * *
* 50 * 6.550 *	* * * *	* * * *
* 60 * 7.760 *	* * * *	* * * *
* 70 * 7.792 *	* * * *	* * * *

ตารางที่ 3.2 น.

Type of Drum .Stainless Steel  
 Condition .With Oil  
 Depth of immersion in water .A = 1.0 cm.  
 Depth of immersion in oil .H = 2.0 cm.

* Speed 20 rev/min *	* Speed 32 rev/min *	* Speed 40 rev/min *
* Time (min) * Volume(L) *	* Time (min) * Volume(L) *	* Time (min) * Volume(L) *
* 2 * 0.280 *	* 2 * 0.695 *	* 2 * 1.394 *
* 4 * 0.545 *	* 4 * 1.390 *	* 4 * 2.786 *
* 6 * 0.796 *	* 6 * 2.196 *	* 6 * 4.195 *
* 8 * 1.044 *	* 8 * 2.946 *	* 8 * 5.575 *
* 10 * 1.315 *	* 10 * 3.422 *	* 10 * 6.990 *
* 12 * 1.572 *	* 12 * 4.085 *	* 12 * 7.422 *
* 14 * 1.838 *	* 14 * 4.760 *	* 14 * 7.604 *
* 16 * 2.100 *	* 16 * 5.456 *	* 16 * 7.848 *
* 18 * 2.355 *	* 18 * 6.102 *	* 30 * 7.860 *
* 20 * 2.614 *	* 20 * 6.796 *	* * * *
* 24 * 3.139 *	* 22 * 7.402 *	* * * *
* 28 * 3.665 *	* 24 * 7.604 *	* * * *
* 30 * 3.920 *	* 26 * 7.765 *	* * * *
* 32 * 4.180 *	* 30 * 7.848 *	* * * *
* 40 * 5.232 *	* 40 * 7.858 *	* * * *
* 50 * 6.544 *	* * * *	* * * *
* 60 * 7.712 *	* * * *	* * * *
* 70 * 7.744 *	* * * *	* * * *



ตารางที่ 3.3 น.

Type of Drum .FVC (smooth)  
 Condition .With oil  
 Depth of immersion in water .A = 1.0 cm.  
 Depth of immersion in oil .H = 2.0 cm.

Speed 20 rev/min		Speed 32 rev/min		Speed 40 rev/min	
Time (min)	Volume(L)	Time (min)	Volume(L)	Time (min)	Volume(L)
2	0.278	2	0.696	2	1.375
4	0.544	4	1.395	4	2.732
6	0.792	6	2.198	6	4.190
8	1.035	8	2.844	8	5.571
10	1.312	10	3.426	10	6.934
12	1.579	12	4.092	12	7.414
14	1.840	14	4.762	14	7.596
16	2.102	16	5.460	16	7.840
18	2.350	18	6.100	30	7.848
20	2.612	20	6.804		
24	3.126	22	7.398		
28	3.656	24	7.612		
30	3.922	26	7.775		
32	4.186	30	7.850		
40	5.228	40	7.862		
50	6.540				
60	7.715				
70	7.740				

.....  
 \* Type of Drum : FLUOROCARBON \*  
 \* Condition : WITH OIL \*  
 \* Depth of immersion in water: A= 1.0 cm. \*  
 \* Depth of immersion in oil : H= 0.5 cm. \*  
 \* Motor Speed : 1500 (rev/min) \*  
 \* Real Speed : 61 (rev/min) \*  
 \* Volume of Oil : 1.0 L \*  
 .....

Time Period (mn)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Thickness on Drum (mm)
0.0	0-36	36.0	1666.7	27.3	0.145
15.0	0-36	36.0	1666.7	27.3	0.145
35.0	0-36	36.0	1666.7	27.3	0.145
55.0	0-36	36.0	1666.7	27.3	0.145
75.0	0-37	37.0	1621.6	26.6	0.141
90.0	0-37	37.0	1621.6	26.6	0.141
105.0	0-37	37.0	1621.6	26.6	0.141
120.0	0-38	38.0	1578.9	25.9	0.137
135.0	0-38	38.0	1578.9	25.9	0.137
150.0	0-38	38.0	1578.9	25.9	0.137
165.0	0-39	39.0	1538.5	25.2	0.134
180.0	0-40	40.0	1500.0	24.6	0.130
195.0	0-41	41.0	1463.4	24.0	0.127
210.0	0-40	40.0	1500.0	24.6	0.130
225.0	0-41	41.0	1463.4	24.0	0.127
240.0	0-43	43.0	1395.3	22.9	0.121
255.0	0-45	45.0	1333.3	21.9	0.116
270.0	0-47	47.0	1276.6	20.9	0.111
290.0	0-48	48.0	1250.0	20.5	0.109
315.0	0-51	51.0	1176.5	19.3	0.102
335.0	0-55	55.0	1090.9	17.9	0.095
375.0	0-55	55.0	1090.9	17.9	0.095
395.0	0-59	59.0	1016.9	16.7	0.088
415.0	1-00	60.0	1000.0	16.4	0.087
435.0	1-00	60.0	1000.0	16.4	0.087
455.0	1-00	60.0	1000.0	16.4	0.087
465.0	1-00	60.0	1000.0	16.4	0.087

## ตารางที่ 4.2 พ.

Type of Drum	STAINLESS STEEL
Condition	WITH DIL
Depth of immersion in water	A= 1.0 cm.
Depth of immersion in oil	H= 0.5 cm.
Motor Speed	1500 (rev/min)
Real Speed	61 (rev/min)
Volume of Dil	1.0 L

Time Period (min)	Time (min)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /min)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
0.0	0-37	37.0	1621.6	26.6	0.141
15.0	0-41	41.0	1463.4	24.0	0.127
25.0	0-42	42.0	1428.6	23.4	0.124
40.0	0-44	44.0	1363.6	22.4	0.118
55.0	0-44	44.0	1363.6	22.4	0.119
70.0	0-46	46.0	1304.3	21.4	0.113
85.0	0-47	47.0	1276.6	20.9	0.111
100.0	0-46	46.0	1304.3	21.4	0.113
120.0	0-46	46.0	1304.3	21.4	0.113
145.0	0-48	48.0	1250.0	20.5	0.109
165.0	0-52	52.0	1153.8	18.9	0.100
195.0	0-52	52.0	1153.8	18.9	0.100
220.0	0-52	52.0	1153.8	18.9	0.100
235.0	0-54	54.0	1111.1	18.2	0.097
250.0	0-54	54.0	1111.1	18.2	0.097
265.0	0-52	52.0	1153.8	18.9	0.100
280.0	0-53	53.0	1132.1	18.6	0.098
295.0	0-53	53.0	1132.1	18.6	0.098

## ตารางที่ 4.3 พ.

Time Period (mn)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mi)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
0.0	0-35	35.0	1714.3	28.1	0.149
25.0	0-36	36.0	1666.7	27.3	0.145
50.0	0-35	35.0	1714.3	28.1	0.149
75.0	0-36	36.0	1666.7	27.3	0.145
90.0	0-37	37.0	1621.6	26.6	0.141
105.0	0-39	39.0	1538.5	25.2	0.134
120.0	0-40	40.0	1500.0	24.6	0.130
135.0	0-41	41.0	1463.4	24.0	0.127
150.0	0-42	42.0	1428.6	23.4	0.124
175.0	0-43	43.0	1395.3	22.9	0.121
195.0	0-44	44.0	1363.6	22.4	0.118
210.0	0-45	45.0	1333.3	21.9	0.116
225.0	0-46	46.0	1304.3	21.4	0.113
245.0	0-46	46.0	1304.3	21.4	0.113
265.0	0-46	46.0	1304.3	21.4	0.113
285.0	0-46	46.0	1304.3	21.4	0.113

Time Period (mn)	Time (mn)	Time Average (s)	Recovery Flow (cm <sup>3</sup> /mn)	Recovery Rate (cm <sup>3</sup> /rev)	Film Thickness (mm)
0.0	0-35	35.0	1714.3	28.1	0.149
30.0	0-30	38.0	1578.9	25.9	0.137
45.0	0-40	40.0	1500.0	24.6	0.130
60.0	0-41	41.0	1463.4	24.0	0.127
80.0	0-41	41.0	1363.6	22.4	0.119
100.0	0-42	42.0	1428.6	23.4	0.124
120.0	0-44	44.0	1363.6	22.4	0.118
140.0	0-45	45.0	1333.3	21.9	0.116
160.0	0-46	46.0	1304.3	21.4	0.113
180.0	0-47	47.0	1276.6	20.9	0.111
195.0	0-48	48.0	1250.0	20.5	0.109
215.0	0-48	48.0	1250.0	20.5	0.109
220.0	0-48	48.0	1250.0	20.5	0.109
235.0	0-50	50.0	1200.0	19.7	0.104
250.0	0-51	51.0	1176.5	19.3	0.102
270.0	0-51	51.0	1176.5	19.3	0.102
290.0	0-51	51.0	1176.5	19.3	0.102
310.0	0-51	51.0	1176.5	19.3	0.102

ตารางที่ 4.5 ผ.

Time Period (mn)	Time (mn)	Time (s)	Oil Flow (cm <sup>3</sup> /mn)	Oil Recovery Rate (cm <sup>3</sup> /rev)	Water Flow (cm <sup>3</sup> /mn)	Water Recovery Rate (cm <sup>3</sup> /rev)	Oil Thickness on Drum (mm)	Water Thickness (mm)
0.0	0-55	55.0	1069.1	17.5	21.8	0.4	0.093	0.002
5.0	0-55	53.0	1069.8	17.5	62.3	1.0	0.093	0.005
10.0	0-51	51.0	1117.6	18.3	53.8	1.0	0.097	0.005
15.0	0-55	55.0	1020.0	16.7	70.9	1.2	0.009	0.006
20.0	0-56	56.0	764.3	15.0	107.1	1.8	0.084	0.009
35.0	0-59	59.0	854.2	14.0	162.7	2.7	0.074	0.014
40.0	1-02	62.0	745.2	12.2	222.6	3.6	0.065	0.019
45.0	1-04	64.0	600.0	9.8	337.5	5.5	0.052	0.027
55.0	1-05	65.0	563.1	9.2	360.0	5.9	0.049	0.031
65.0	1-05	65.0	521.5	8.5	401.5	6.6	0.045	0.035
70.0	1-09	69.0	447.8	7.3	421.7	6.9	0.039	0.037
80.0	1-10	70.0	428.6	7.0	428.6	7.0	0.037	0.037
100.0	1-08	68.0	397.1	6.5	485.3	8.0	0.034	0.042
110.0	1-12	72.0	308.3	5.1	525.0	8.6	0.027	0.046
115.0	1-14	74.0	291.9	4.8	518.9	8.5	0.025	0.045
125.0	1-15	75.0	256.0	4.2	544.0	8.9	0.022	0.047
130.0	1-15	75.0	252.0	3.8	560.0	9.3	0.020	0.049
145.0	1-18	78.0	115.4	1.9	653.8	10.7	0.010	0.057
150.0	1-18	70.0	76.9	1.3	672.3	11.3	0.007	0.060
160.0	1-25	85.0	14.1	0.2	691.8	11.3	0.001	0.060
170.0	1-25	85.0	14.1	0.2	691.8	11.3	0.001	0.060

ตารางที่ 5.1 พ.

5.1 G1-

Type of drum: FLUOROCARBON  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 20 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * (s)	* Volume * (ml)	* Water * (ml)	* Oil * (ml)	* Total * (ml)	* Flow * (1/mn)	* Water * (1/mn)	* Oil * (1/mn)	* Total * (1/mn)	* Rate * (ml/r)	* Water * (ml/r)	* Oil * (ml/r)	* Total * (ml/r)	* Film * (mm)	* Water * (mm)	* Oil * (mm)	* Total * (mm)	* % * Water	* Time * (s)
* 17 *	* 920 *	* 0 *	* 920 *	* 920 *	* 3.247 *	* 0.000 *	* 3.247 *	* 3.247 *	* 162.4 *	* 0.00 *	* 162.4 *	* 162.4 *	* 0.860 *	* 0.000 *	* 0.860 *	* 0.860 *	* 0.000 *	* 8.5 *
* 29 *	* 880 *	* 10 *	* 870 *	* 890 *	* 4.400 *	* 0.050 *	* 4.350 *	* 4.350 *	* 220 *	* 2.50 *	* 217.5 *	* 217.5 *	* 1.166 *	* 0.013 *	* 1.153 *	* 1.153 *	* 1.136 *	* 23.0 *
* 57 *	* 860 *	* 15 *	* 845 *	* 875 *	* 1.843 *	* 0.032 *	* 1.811 *	* 1.811 *	* 92.14 *	* 1.61 *	* 90.5 *	* 90.5 *	* 0.488 *	* 0.009 *	* 0.480 *	* 0.480 *	* 1.744 *	* 43.0 *
* 112 *	* 830 *	* 80 *	* 750 *	* 810 *	* 0.905 *	* 0.087 *	* 0.818 *	* 0.818 *	* 45.27 *	* 4.36 *	* 40.9 *	* 40.9 *	* 0.240 *	* 0.023 *	* 0.217 *	* 0.217 *	* 9.639 *	* 84.5 *
* 190 *	* 830 *	* 170 *	* 660 *	* 830 *	* 0.638 *	* 0.131 *	* 0.508 *	* 0.508 *	* 31.92 *	* 6.54 *	* 25.4 *	* 25.4 *	* 0.169 *	* 0.035 *	* 0.135 *	* 0.135 *	* 20.482 *	* 151.0 *
* 340 *	* 770 *	* 520 *	* 250 *	* 770 *	* 0.308 *	* 0.208 *	* 0.100 *	* 0.100 *	* 15.4 *	* 10.40 *	* 5.0 *	* 5.0 *	* 0.082 *	* 0.055 *	* 0.027 *	* 0.027 *	* 67.532 *	* 265.0 *

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 \* CUMULATIVE VALUES \*  
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* Time * (s)	* Volume * (ml)	* Water * (ml)	* Oil * (ml)	* Total * (ml)	* Flow * (1/mn)	* Water * (1/mn)	* Oil * (1/mn)	* Total * (1/mn)	* Rate * (ml/r)	* Water * (ml/r)	* Oil * (ml/r)	* Total * (ml/r)	* Film * (mm)	* Water * (mm)	* Oil * (mm)	* Total * (mm)	* % * Water
* 17 *	* 920 *	* 0 *	* 920 *	* 920 *	* 3.247 *	* 0.000 *	* 3.247 *	* 3.247 *	* 162.4 *	* 0.000 *	* 162.4 *	* 162.4 *	* 0.860 *	* 0.000 *	* 0.860 *	* 0.860 *	* 0.000 *
* 29 *	* 1800 *	* 10 *	* 1790 *	* 1800 *	* 3.724 *	* 0.020 *	* 3.703 *	* 3.703 *	* 186.2 *	* 1.034 *	* 185.1 *	* 185.1 *	* 0.987 *	* 0.005 *	* 0.981 *	* 0.981 *	* 0.556 *
* 57 *	* 2660 *	* 25 *	* 2635 *	* 2660 *	* 2.8 *	* 0.026 *	* 2.773 *	* 2.773 *	* 140 *	* 1.315 *	* 138.6 *	* 138.6 *	* 0.742 *	* 0.007 *	* 0.735 *	* 0.735 *	* 0.940 *
* 112 *	* 3490 *	* 105 *	* 3385 *	* 3490 *	* 1.869 *	* 0.056 *	* 1.813 *	* 1.813 *	* 93.48 *	* 2.812 *	* 90.66 *	* 90.66 *	* 0.495 *	* 0.015 *	* 0.481 *	* 0.481 *	* 3.009 *
* 190 *	* 4320 *	* 275 *	* 4045 *	* 4320 *	* 1.364 *	* 0.086 *	* 1.277 *	* 1.277 *	* 68.21 *	* 4.342 *	* 63.86 *	* 63.86 *	* 0.362 *	* 0.023 *	* 0.339 *	* 0.339 *	* 6.366 *
* 340 *	* 5090 *	* 795 *	* 4295 *	* 5090 *	* 0.898 *	* 0.140 *	* 0.757 *	* 0.757 *	* 44.91 *	* 7.014 *	* 37.89 *	* 37.89 *	* 0.238 *	* 0.037 *	* 0.201 *	* 0.201 *	* 15.619 *

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การวาง 5.2 น.

Type of drum:  
 Condition:  
 Depth of immersion in water:  
 Depth of immersion in oil:  
 Motor Speed:

FLUOROCARBON  
 WASTE N=1  
 A= 1.0 cm  
 H= 1.5 cm  
 S= 40 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * * (s) *	* Total * * (ml) *	* Water * * (ml) *	* Oil * * (ml) *	* Total * * (1/mn) *	* Water * * (1/mn) *	* Oil * * (1/mn) *	* Total * * (ml/r) *	* Water * * (ml/r) *	* Oil * * (ml/r) *	* Total * * (mm) *	* Water * * (mm) *	* Oil * * (mm) *	* % * * Water *	* Time * * (s) *
* 10 *	* 1015 *	* 25 *	* 990 *	* 6.090 *	* 0.150 *	* 5.940 *	* 152.3 *	* 3.75 *	* 148.5 *	* 0.807 *	* 0.020 *	* 0.787 *	* 2.463 *	* 5.0 *
* 18 *	* 980 *	* 70 *	* 910 *	* 7.350 *	* 0.525 *	* 6.825 *	* 183.7 *	* 13.13 *	* 170.6 *	* 0.974 *	* 0.070 *	* 0.904 *	* 7.143 *	* 14.0 *
* 29 *	* 880 *	* 90 *	* 790 *	* 4.800 *	* 0.491 *	* 4.309 *	* 120 *	* 12.27 *	* 107.7 *	* 0.636 *	* 0.065 *	* 0.571 *	* 10.227 *	* 23.5 *
* 46 *	* 890 *	* 210 *	* 680 *	* 3.141 *	* 0.741 *	* 2.400 *	* 78.52 *	* 18.53 *	* 60.0 *	* 0.416 *	* 0.098 *	* 0.318 *	* 23.596 *	* 37.5 *
* 75 *	* 890 *	* 410 *	* 480 *	* 1.841 *	* 0.848 *	* 0.993 *	* 46.03 *	* 21.21 *	* 24.8 *	* 0.244 *	* 0.112 *	* 0.132 *	* 46.067 *	* 60.5 *
* 118 *	* 1025 *	* 520 *	* 505 *	* 1.430 *	* 0.726 *	* 0.705 *	* 35.75 *	* 18.14 *	* 17.6 *	* 0.190 *	* 0.096 *	* 0.093 *	* 50.732 *	* 96.5 *
* 166 *	* 750 *	* 620 *	* 130 *	* 0.938 *	* 0.775 *	* 0.163 *	* 23.43 *	* 19.38 *	* 4.1 *	* 0.124 *	* 0.103 *	* 0.022 *	* 82.667 *	* 142.0 *
* 243 *	* 800 *	* 690 *	* 110 *	* 0.623 *	* 0.538 *	* 0.086 *	* 15.58 *	* 13.44 *	* 2.1 *	* 0.083 *	* 0.071 *	* 0.011 *	* 86.250 *	* 204.5 *
* 276 *	* 710 *	* 660 *	* 50 *	* 1.291 *	* 1.200 *	* 0.091 *	* 32.27 *	* 30.00 *	* 2.3 *	* 0.171 *	* 0.159 *	* 0.012 *	* 92.958 *	* 259.5 *

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 \* CUMULATIVE VALUES \*  
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* Time * * (s) *	* Total * * (ml) *	* Water * * (ml) *	* Oil * * (ml) *	* Total * * (1/mn) *	* Water * * (1/mn) *	* Oil * * (1/mn) *	* Total * * (ml/r) *	* Water * * (ml/r) *	* Oil * * (ml/r) *	* Total * * (mm) *	* Water * * (mm) *	* Oil * * (mm) *	* % * * Water *
* 10 *	* 1015 *	* 25 *	* 990 *	* 6.090 *	* 0.150 *	* 5.940 *	* 152.3 *	* 3.750 *	* 148.5 *	* 0.807 *	* 0.020 *	* 0.787 *	* 2.463 *
* 18 *	* 1995 *	* 95 *	* 1900 *	* 6.65 *	* 0.316 *	* 6.333 *	* 166.2 *	* 7.916 *	* 158.3 *	* 0.881 *	* 0.042 *	* 0.839 *	* 4.762 *
* 29 *	* 2875 *	* 185 *	* 2690 *	* 5.948 *	* 0.382 *	* 5.565 *	* 148.7 *	* 9.568 *	* 139.1 *	* 0.788 *	* 0.051 *	* 0.737 *	* 6.435 *
* 46 *	* 3765 *	* 395 *	* 3370 *	* 4.910 *	* 0.515 *	* 4.395 *	* 122.7 *	* 12.88 *	* 109.8 *	* 0.651 *	* 0.068 *	* 0.582 *	* 10.491 *
* 75 *	* 4655 *	* 805 *	* 3850 *	* 3.724 *	* 0.644 *	* 3.08 *	* 93.1 *	* 16.1 *	* 77 *	* 0.493 *	* 0.085 *	* 0.408 *	* 17.293 *
* 118 *	* 5680 *	* 1325 *	* 4355 *	* 2.888 *	* 0.673 *	* 2.214 *	* 72.20 *	* 16.84 *	* 55.36 *	* 0.383 *	* 0.089 *	* 0.293 *	* 23.327 *
* 166 *	* 6430 *	* 1945 *	* 4485 *	* 2.324 *	* 0.703 *	* 1.621 *	* 58.10 *	* 17.57 *	* 40.52 *	* 0.308 *	* 0.093 *	* 0.215 *	* 30.249 *
* 243 *	* 7230 *	* 2635 *	* 4595 *	* 1.785 *	* 0.650 *	* 1.134 *	* 44.62 *	* 16.26 *	* 28.36 *	* 0.237 *	* 0.086 *	* 0.150 *	* 36.445 *
* 276 *	* 7940 *	* 3295 *	* 4645 *	* 1.726 *	* 0.716 *	* 1.009 *	* 43.15 *	* 17.90 *	* 25.24 *	* 0.229 *	* 0.095 *	* 0.134 *	* 41.499 *

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ตารางที่ 5.3 น.

Type of drum:  
 Conditions:  
 Depth of immersion in water:  
 Depth of immersion in oil:  
 Motor Speed:

FLUOROCARBON  
 --- WASTE N=1  
 A= 1.0 cm  
 H= 1.5 cm  
 S= 61 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
15	1930	360	1570	7.720	1.440	6.280	126.6	23.61	103.0	0.671	0.125	0.546	18.653	7.5
22	730	330	400	6.257	2.829	3.429	102.5	46.37	56.2	0.544	0.246	0.298	45.205	18.5
32	820	360	460	4.920	2.160	2.760	80.65	35.41	45.2	0.427	0.188	0.240	43.902	27.0
47	820	460	360	3.280	1.840	1.440	53.77	30.16	23.6	0.285	0.160	0.125	56.098	39.5
67	820	530	290	2.460	1.590	0.870	40.32	26.07	14.3	0.214	0.138	0.076	64.634	57.0
106	1380	970	410	2.123	1.492	0.631	34.80	24.46	10.3	0.184	0.130	0.055	70.290	86.5
171	1620	1520	100	1.495	1.403	0.092	24.51	23.00	1.5	0.130	0.122	0.008	93.827	138.5
214	1000	970	30	1.395	1.353	0.042	22.87	22.19	0.7	0.121	0.118	0.004	97.000	192.5

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water
15	1930	360	1570	7.720	1.440	6.280	126.6	23.61	103.0	0.671	0.125	0.546	18.653
22	2660	690	1970	7.254	1.881	5.372	118.9	30.84	88.07	0.630	0.164	0.467	25.940
32	3480	1050	2430	6.525	1.968	4.556	106.9	32.27	74.69	0.567	0.171	0.396	30.172
47	4300	1510	2790	5.489	1.927	3.561	89.98	31.60	58.38	0.477	0.167	0.309	35.116
67	5120	2040	3080	4.585	1.826	2.758	75.16	29.94	45.21	0.398	0.159	0.240	39.844
106	6500	3010	3490	3.679	1.703	1.975	60.31	27.93	32.38	0.320	0.148	0.172	46.308
171	8120	4530	3590	2.849	1.589	1.259	46.70	26.05	20.64	0.248	0.138	0.109	55.788
214	9120	5500	3620	2.557	1.542	1.014	41.91	25.27	16.63	0.222	0.134	0.088	60.307



ตารางที่ 5.4 น.

Type of drum: STAINLESS STEEL  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 20 rev/mn

EXPERIMENTAL VALUES

* Time (s)	* Total Volume (ml)	* Water Volume (ml)	* Oil Volume (ml)	* Total Flow (1/mn)	* Water Flow (1/mn)	* Oil Flow (1/mn)	* Total Rate (ml/r)	* Water Rate (ml/r)	* Oil Rate (ml/r)	* Total Film (mm)	* Water Film (mm)	* Oil Film (mm)	* % Water	* Time (s)
18	930	0	930	3.100	0.000	3.100	155.0	0.00	155.0	0.822	0.000	0.822	0.000	9.0
33	820	0	820	3.280	0.000	3.280	164	0.00	164.0	0.869	0.000	0.869	0.000	25.5
78	880	40	840	1.173	0.053	1.120	58.66	2.67	56.0	0.311	0.014	0.297	4.545	55.5
178	810	250	560	0.486	0.150	0.336	24.3	7.50	16.8	0.129	0.040	0.089	30.864	128.0
374	760	570	190	0.233	0.174	0.058	11.63	8.72	2.9	0.062	0.046	0.015	75.000	276.0

CUMULATIVE VALUES

* Time (s)	* Total Volume (ml)	* Water Volume (ml)	* Oil Volume (ml)	* Total Flow (1/mn)	* Water Flow (1/mn)	* Oil Flow (1/mn)	* Total Rate (ml/r)	* Water Rate (ml/r)	* Oil Rate (ml/r)	* Total Film (mm)	* Water Film (mm)	* Oil Film (mm)	* % Water
18	930	0	930	3.100	0.000	3.100	155.0	0.000	155.0	0.822	0.000	0.822	0.000
33	1750	0	1750	3.181	0	3.181	159.0	0	159.0	0.843	0.000	0.843	0.000
78	2630	40	2590	2.023	0.030	1.992	101.1	1.538	99.61	0.536	0.008	0.528	1.521
178	3440	290	3150	1.159	0.097	1.061	57.97	4.887	53.08	0.307	0.026	0.281	8.430
374	4200	860	3340	0.673	0.137	0.535	33.68	6.898	26.79	0.179	0.037	0.142	20.476

ตารางที่ 5.5พ.

Type of drum: STAINLESS STEEL  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 40 rev/mn

EXPERIMENTAL VALUES

* Time (s)	* Total Volume (ml)	* Water Volume (ml)	* Oil Volume (ml)	* Total Flow (l/mn)	* Water Flow (l/mn)	* Oil Flow (l/mn)	* Total Rate (ml/r)	* Water Rate (ml/r)	* Oil Rate (ml/r)	* Total Film (mm)	* Water Film (mm)	* Oil Film (mm)	* % Water	* Time (s)
14.5	1220	65	1155	5.048	0.269	4.779	126.2	6.72	119.5	0.669	0.036	0.633	5.328	7.3
27	890	100	790	4.272	0.480	3.792	106.8	12.00	94.8	0.566	0.064	0.502	11.236	20.8
43	850	140	710	3.188	0.525	2.663	79.68	13.13	66.6	0.422	0.070	0.353	16.471	35.0
70	890	330	560	1.978	0.733	1.244	49.44	18.33	31.1	0.262	0.097	0.165	37.079	56.5
107	860	420	440	1.395	0.681	0.714	34.86	17.03	17.8	0.185	0.090	0.095	48.837	88.5
169	850	750	100	0.823	0.726	0.097	20.56	18.15	2.4	0.109	0.096	0.013	88.235	138.0

CUMULATIVE VALUES

* Time (s)	* Total Volume (ml)	* Water Volume (ml)	* Oil Volume (ml)	* Total Flow (l/mn)	* Water Flow (l/mn)	* Oil Flow (l/mn)	* Total Rate (ml/r)	* Water Rate (ml/r)	* Oil Rate (ml/r)	* Total Film (mm)	* Water Film (mm)	* Oil Film (mm)	* % Water
14.5	1220	65	1155	5.048	0.269	4.779	126.2	6.724	119.5	0.669	0.036	0.633	5.328
27	2110	165	1945	4.688	0.366	4.322	117.2	9.166	108.0	0.621	0.049	0.573	7.820
43	2960	305	2655	4.130	0.425	3.704	103.2	10.63	92.61	0.547	0.056	0.491	10.304
70	3850	635	3215	3.3	0.544	2.755	82.5	13.60	68.89	0.437	0.072	0.365	16.494
107	4710	1055	3655	2.641	0.591	2.049	66.02	14.78	51.23	0.350	0.078	0.272	22.399
169	5560	1805	3755	1.973	0.640	1.333	49.34	16.02	33.32	0.262	0.085	0.177	32.464

ตารางที่ 5.6 น.

Type of drum: STAINLESS STEEL  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 61 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Film (mm)	Film (mm)	Film (mm)	% Water	Time (s)
8	990	150	840	7.425	1.125	6.300	121.7	18.44	103.3	0.645	0.098	0.547	15.152	4.0
14	910	260	650	9.100	2.600	6.500	149.1	42.62	106.6	0.791	0.226	0.565	28.571	11.0
22	900	330	570	6.750	2.475	4.275	110.6	40.57	70.1	0.586	0.215	0.371	36.667	18.0
30	700	310	390	5.250	2.325	2.925	86.06	38.11	48.0	0.456	0.202	0.254	44.286	26.0
40	810	400	410	4.860	2.400	2.460	79.67	39.34	40.3	0.422	0.209	0.214	49.383	35.0
58	980	580	400	3.267	1.933	1.333	53.55	31.69	21.9	0.284	0.168	0.116	59.184	49.0
86	1060	700	360	2.271	1.500	0.771	37.23	24.59	12.6	0.197	0.130	0.067	66.038	72.0
108	860	630	230	2.345	1.718	0.627	38.45	28.17	10.3	0.204	0.149	0.055	73.256	97.0

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Film (mm)	Film (mm)	Film (mm)	% Water
8	990	150	840	7.425	1.125	6.300	121.7	18.44	103.3	0.645	0.098	0.547	15.152
14	1900	410	1490	8.142	1.757	6.385	133.4	28.80	104.6	0.707	0.153	0.555	21.579
22	2800	740	2060	7.636	2.018	5.618	125.1	33.08	92.10	0.663	0.175	0.488	26.429
30	3500	1050	2450	7	2.1	4.9	114.7	34.42	80.32	0.608	0.182	0.426	30.000
40	4310	1450	2860	6.465	2.175	4.29	105.9	35.65	70.32	0.562	0.189	0.373	33.643
58	5290	2030	3260	5.472	2.1	3.372	89.71	34.42	55.28	0.475	0.182	0.293	38.374
86	6350	2730	3620	4.430	1.904	2.525	72.62	31.22	41.40	0.385	0.165	0.219	42.992
108	7210	3360	3850	4.005	1.866	2.138	65.66	30.60	35.06	0.348	0.162	0.186	46.602

ตารางที่ 5.7 น.

Type of drum: PVC smooth  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 20 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * * (s) *	* *Total :Water : Oil * * Volume:Volume:Volume * * (ml) : (ml) : (ml) *	* *Total :Water : Oil * * Flow : Flow : Flow * * (l/mn):(l/mn):(l/mn) *	* *Total :Water : Oil * * Rate : Rate : Rate * * (ml/r):(ml/r):(ml/r) *	* *Total :Water : Oil * * Film * Film * Film * * (mm) * (mm) * (mm) *	* * % * * Water * * (s) *	* Time * * (s) *
* 21 *	* 990 : 0 : 990 *	* 2.829 : 0.000 : 2.829 *	* 141.4 : 0.00 : 141.4 *	* 0.750 * 0.000 * 0.750 *	* 0.000 *	* 10.5 *
* 59 *	* 1080 : 20 : 1060 *	* 1.705 : 0.032 : 1.674 *	* 85.26 : 1.58 : 83.7 *	* 0.452 * 0.008 * 0.444 *	* 1.852 *	* 40.0 *
* 137 *	* 1105 : 235 : 870 *	* 0.850 : 0.181 : 0.669 *	* 42.5 : 9.04 : 33.5 *	* 0.225 * 0.048 * 0.177 *	* 21.267 *	* 98.0 *
* 238 *	* 640 : 430 : 210 *	* 0.380 : 0.255 : 0.125 *	* 19.00 : 12.77 : 6.2 *	* 0.101 * 0.068 * 0.033 *	* 67.188 *	* 187.5 *

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 \* CUMULATIVE VALUES \*  
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* Time * * (s) *	* *Total :Water : Oil * * Volume:Volume:Volume * * (ml) : (ml) : (ml) *	* *Total :Water : Oil * * Flow : Flow : Flow * * (l/mn):(l/mn):(l/mn) *	* *Total :Water : Oil * * Rate : Rate : Rate * * (ml/r):(ml/r):(ml/r) *	* *Oil *Water * Oil * * Film * Film * Film * * (mm) * (mm) * (mm) *	* * % * * Water * * (s) *	* Time * * (s) *
* 21 *	* 990 : 0 : 990 *	* 2.829 : 0.000 : 2.829 *	* 141.4 : 0.000 : 141.4 *	* 0.750 * 0.000 * 0.750 *	* 0.000 *	* 10.5 *
* 59 *	* 2070 : 20 : 2050 *	* 2.105 : 0.020 : 2.084 *	* 105.2 : 1.016 : 104.2 *	* 0.558 * 0.005 * 0.552 *	* 0.966 *	* 40.0 *
* 137 *	* 3175 : 255 : 2920 *	* 1.390 : 0.111 : 1.278 *	* 69.52 : 5.583 : 63.94 *	* 0.368 * 0.030 * 0.339 *	* 8.031 *	* 98.0 *
* 238 *	* 3815 : 685 : 3130 *	* 0.961 : 0.172 : 0.789 *	* 48.08 : 8.634 : 39.45 *	* 0.255 * 0.046 * 0.209 *	* 17.955 *	* 187.5 *

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ตารางที่ 5.8 น.

Type of drum: FVC smooth  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 40 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * * (s) *	* Total * * (ml) *	* Water * * (ml) *	* Oil * * (ml) *	* Total * * (l/mn) *	* Water * * (l/mn) *	* Oil * * (l/mn) *	* Total * * (ml/r) *	* Water * * (ml/r) *	* Oil * * (ml/r) *	* Total * * (mm) *	* Water * * (mm) *	* Oil * * (mm) *	* % * * Water *	* Time * * (s) *
* 12 *	* 920 *	* 70 *	* 850 *	* 4.600 *	* 0.350 *	* 4.250 *	* 115.0 *	* 8.75 *	* 106.3 *	* 0.610 *	* 0.046 *	* 0.563 *	* 7.609 *	* 6.0 *
* 25 *	* 930 *	* 100 *	* 830 *	* 4.292 *	* 0.462 *	* 3.831 *	* 107.3 *	* 11.54 *	* 95.8 *	* 0.569 *	* 0.061 *	* 0.508 *	* 10.753 *	* 18.5 *
* 47 *	* 940 *	* 180 *	* 760 *	* 2.564 *	* 0.491 *	* 2.073 *	* 64.09 *	* 12.27 *	* 51.8 *	* 0.340 *	* 0.065 *	* 0.275 *	* 19.149 *	* 36.0 *
* 79 *	* 970 *	* 390 *	* 580 *	* 1.819 *	* 0.731 *	* 1.088 *	* 45.46 *	* 18.28 *	* 27.2 *	* 0.241 *	* 0.097 *	* 0.144 *	* 40.206 *	* 63.0 *
* 130 *	* 900 *	* 650 *	* 250 *	* 1.059 *	* 0.765 *	* 0.294 *	* 26.47 *	* 19.12 *	* 7.4 *	* 0.140 *	* 0.101 *	* 0.039 *	* 72.222 *	* 104.5 *
* 198 *	* 880 *	* 840 *	* 40 *	* 0.776 *	* 0.741 *	* 0.035 *	* 19.41 *	* 18.53 *	* 0.9 *	* 0.103 *	* 0.098 *	* 0.005 *	* 95.455 *	* 164.0 *

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 \* CUMULATIVE VALUES \*  
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* Time * * (s) *	* Total * * (ml) *	* Water * * (ml) *	* Oil * * (ml) *	* Total * * (l/mn) *	* Water * * (l/mn) *	* Oil * * (l/mn) *	* Total * * (ml/r) *	* Water * * (ml/r) *	* Oil * * (ml/r) *	* Total * * (mm) *	* Water * * (mm) *	* Oil * * (mm) *	* % * * Water *
* 12 *	* 920 *	* 70 *	* 850 *	* 4.600 *	* 0.350 *	* 4.250 *	* 115.0 *	* 8.750 *	* 106.3 *	* 0.610 *	* 0.046 *	* 0.563 *	* 7.609 *
* 25 *	* 1850 *	* 170 *	* 1680 *	* 4.44 *	* 0.408 *	* 4.032 *	* 111 *	* 10.2 *	* 100.8 *	* 0.588 *	* 0.054 *	* 0.534 *	* 9.189 *
* 47 *	* 2790 *	* 350 *	* 2440 *	* 3.561 *	* 0.446 *	* 3.114 *	* 89.04 *	* 11.17 *	* 77.87 *	* 0.472 *	* 0.059 *	* 0.413 *	* 12.545 *
* 79 *	* 3760 *	* 740 *	* 3020 *	* 2.855 *	* 0.562 *	* 2.293 *	* 71.39 *	* 14.05 *	* 57.34 *	* 0.378 *	* 0.074 *	* 0.304 *	* 19.681 *
* 130 *	* 4660 *	* 1390 *	* 3270 *	* 2.150 *	* 0.641 *	* 1.509 *	* 53.76 *	* 16.03 *	* 37.73 *	* 0.285 *	* 0.085 *	* 0.200 *	* 29.828 *
* 198 *	* 5540 *	* 2230 *	* 3310 *	* 1.678 *	* 0.675 *	* 1.003 *	* 41.96 *	* 16.89 *	* 25.07 *	* 0.222 *	* 0.090 *	* 0.133 *	* 40.253 *

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ตารางที่ 5.9 พ.

Type of drum: FVC smooth  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 61 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * * (s) *	* Total * * (ml) *	* Water * * (ml) *	* Oil * * (ml) *	* Total * * (l/mn) *	* Water * * (l/mn) *	* Oil * * (l/mn) *	* Total * * (ml/r) *	* Water * * (ml/r) *	* Oil * * (ml/r) *	* Total * * (mm) *	* Water * * (mm) *	* Oil * * (mm) *	* % * * Water *
* 10 *	* 940 *	* 250 *	* 690 *	* 5.640 *	* 1.500 *	* 4.140 *	* 92.5 *	* 24.59 *	* 67.9 *	* 0.490 *	* 0.130 *	* 0.360 *	* 26.596 *
* 18 *	* 880 *	* 270 *	* 610 *	* 6.600 *	* 2.025 *	* 4.575 *	* 108.1 *	* 33.20 *	* 75.0 *	* 0.573 *	* 0.176 *	* 0.398 *	* 30.682 *
* 27 *	* 890 *	* 330 *	* 560 *	* 5.933 *	* 2.200 *	* 3.733 *	* 97.26 *	* 36.07 *	* 61.2 *	* 0.516 *	* 0.191 *	* 0.324 *	* 37.079 *
* 41 *	* 820 *	* 340 *	* 480 *	* 3.514 *	* 1.457 *	* 2.057 *	* 57.61 *	* 23.89 *	* 33.7 *	* 0.305 *	* 0.127 *	* 0.179 *	* 41.463 *
* 61 *	* 930 *	* 560 *	* 370 *	* 2.790 *	* 1.680 *	* 1.110 *	* 45.73 *	* 27.54 *	* 18.2 *	* 0.242 *	* 0.146 *	* 0.096 *	* 60.215 *
* 89 *	* 1010 *	* 680 *	* 330 *	* 2.164 *	* 1.457 *	* 0.707 *	* 35.48 *	* 23.89 *	* 11.6 *	* 0.188 *	* 0.127 *	* 0.061 *	* 67.327 *
* 116 *	* 750 *	* 680 *	* 70 *	* 1.667 *	* 1.511 *	* 0.156 *	* 27.32 *	* 24.77 *	* 2.6 *	* 0.145 *	* 0.131 *	* 0.014 *	* 90.667 *

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 \* CUMULATIVE VALUES \*  
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* Time * * (s) *	* Total * * (ml) *	* Water * * (ml) *	* Oil * * (ml) *	* Total * * (l/mn) *	* Water * * (l/mn) *	* Oil * * (l/mn) *	* Total * * (ml/r) *	* Water * * (ml/r) *	* Oil * * (ml/r) *	* Total * * (mm) *	* Water * * (mm) *	* Oil * * (mm) *	* % * * Water *
* 10 *	* 940 *	* 250 *	* 690 *	* 5.640 *	* 1.500 *	* 4.140 *	* 92.5 *	* 24.59 *	* 67.9 *	* 0.490 *	* 0.130 *	* 0.360 *	* 26.596 *
* 18 *	* 1820 *	* 520 *	* 1300 *	* 6.066 *	* 1.733 *	* 4.333 *	* 99.45 *	* 28.41 *	* 71.03 *	* 0.527 *	* 0.151 *	* 0.377 *	* 28.571 *
* 27 *	* 2710 *	* 850 *	* 1860 *	* 6.022 *	* 1.888 *	* 4.133 *	* 98.72 *	* 30.96 *	* 67.75 *	* 0.523 *	* 0.164 *	* 0.359 *	* 31.365 *
* 41 *	* 3530 *	* 1190 *	* 2340 *	* 5.165 *	* 1.741 *	* 3.424 *	* 84.68 *	* 28.54 *	* 56.13 *	* 0.449 *	* 0.151 *	* 0.298 *	* 33.711 *
* 61 *	* 4460 *	* 1750 *	* 2710 *	* 4.386 *	* 1.721 *	* 2.665 *	* 71.91 *	* 28.21 *	* 43.69 *	* 0.381 *	* 0.150 *	* 0.232 *	* 39.238 *
* 89 *	* 5470 *	* 2430 *	* 3040 *	* 3.687 *	* 1.638 *	* 2.049 *	* 60.45 *	* 26.85 *	* 33.59 *	* 0.320 *	* 0.142 *	* 0.178 *	* 44.424 *
* 116 *	* 6220 *	* 3110 *	* 3110 *	* 3.217 *	* 1.608 *	* 1.608 *	* 52.74 *	* 26.37 *	* 26.37 *	* 0.280 *	* 0.140 *	* 0.140 *	* 50.000 *

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ตารางที่ 5.10 น.

Type of drum: PVC rough  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 20 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * (s)	* Volume * (ml)	* Water * (ml)	* Oil * (ml)	* Total * (ml)	* Flow * (l/mn)	* Water * (l/mn)	* Oil * (l/mn)	* Total * (l/mn)	* Rate * (ml/r)	* Water * (ml/r)	* Oil * (ml/r)	* Total * (ml/r)	* Film * (mm)	* Water * (mm)	* Oil * (mm)	* Total * (mm)	* % * Water	* Time * (s)
* 18 *	* 1020 *	* 0 *	* 1020 *	* 1020 *	* 3.400 *	* 0.000 *	* 3.400 *	* 3.400 *	* 170.0 *	* 0.00 *	* 170.0 *	* 170.0 *	* 0.901 *	* 0.000 *	* 0.901 *	* 0.901 *	* 0.000 *	* 9.0 *
* 41 *	* 1065 *	* 5 *	* 1060 *	* 1065 *	* 2.778 *	* 0.013 *	* 2.765 *	* 2.791 *	* 138.9 *	* 0.65 *	* 138.3 *	* 139.0 *	* 0.736 *	* 0.003 *	* 0.733 *	* 0.739 *	* 0.469 *	* 29.5 *
* 92 *	* 1030 *	* 10 *	* 1020 *	* 1040 *	* 1.217 *	* 0.012 *	* 1.205 *	* 1.229 *	* 60.58 *	* 0.59 *	* 60.0 *	* 61.17 *	* 0.321 *	* 0.003 *	* 0.318 *	* 0.324 *	* 0.971 *	* 66.5 *
* 246 *	* 1020 *	* 545 *	* 475 *	* 1565 *	* 0.397 *	* 0.212 *	* 0.185 *	* 0.614 *	* 19.87 *	* 10.62 *	* 9.3 *	* 30.79 *	* 0.105 *	* 0.056 *	* 0.049 *	* 0.210 *	* 53.431 *	* 169.0 *

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 \* CUMULATIVE VALUES \*  
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* Time * (s)	* Volume * (ml)	* Water * (ml)	* Oil * (ml)	* Total * (ml)	* Flow * (l/mn)	* Water * (l/mn)	* Oil * (l/mn)	* Total * (l/mn)	* Rate * (ml/r)	* Water * (ml/r)	* Oil * (ml/r)	* Total * (ml/r)	* Film * (mm)	* Water * (mm)	* Oil * (mm)	* Total * (mm)	* % * Water
* 18 *	* 1020 *	* 0 *	* 1020 *	* 1020 *	* 3.400 *	* 0.000 *	* 3.400 *	* 3.400 *	* 170.0 *	* 0.000 *	* 170.0 *	* 170.0 *	* 0.901 *	* 0.000 *	* 0.901 *	* 0.901 *	* 0.000 *
* 41 *	* 2085 *	* 5 *	* 2080 *	* 2085 *	* 3.051 *	* 0.007 *	* 3.043 *	* 3.058 *	* 152.5 *	* 0.365 *	* 152.1 *	* 152.6 *	* 0.809 *	* 0.002 *	* 0.807 *	* 0.811 *	* 0.240 *
* 92 *	* 3115 *	* 15 *	* 3100 *	* 3115 *	* 2.031 *	* 0.009 *	* 2.021 *	* 2.040 *	* 101.5 *	* 0.489 *	* 101.0 *	* 102.0 *	* 0.538 *	* 0.003 *	* 0.536 *	* 0.541 *	* 0.482 *
* 246 *	* 4135 *	* 560 *	* 3575 *	* 4135 *	* 1.008 *	* 0.136 *	* 0.871 *	* 1.144 *	* 50.42 *	* 6.829 *	* 43.59 *	* 94.01 *	* 0.267 *	* 0.036 *	* 0.231 *	* 0.303 *	* 13.543 *

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ตารางที่ 5.11 น.

Type of drum: FVC rough  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm.  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 40 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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 \* \*\*\*\*\* \*  
 \* \*Total :Water : Oil \* \*Total :Water : Oil \* \*Total :Water : Oil \* \*Total :Water : Oil \* \* % \* \*  
 \* Time \* \*Volume:Volume:Volume\* \* Flow : Flow : Flow \* \* Rate : Rate : Rate \* \* Film \* Film \* Film \* \* Water \* \* Time \*  
 \* (s) \* \* (ml) : (ml) : (ml) \* \*(l/mn):(l/mn):(l/mn)\* \*(ml/r):(ml/r):(ml/r)\* \*(mm) \* (mm) \* (mm) \* \* \* \* (s) \*  
 \* \*\*\*\*\* \*  
 \* 15.5 \* \* 1165 : 30 : 1135 \* \*4.510 :0.116 :4.394 \* \*112.7 : 2.90 :109.8 \* \*0.598 \*0.015 \*0.582 \* \* 2.575 \* \* 7.8 \*  
 \* 31 \* \* 1010 : 50 : 960 \* \*3.910 :0.194 :3.716 \* \*97.74 : 4.84 : 92.9 \* \*0.518 \*0.026 \*0.492 \* \* 4.950 \* \* 23.3 \*  
 \* 57.5 \* \* 990 : 170 : 820 \* \*2.242 :0.385 :1.857 \* \*56.03 : 9.62 : 46.4 \* \*0.297 \*0.051 \*0.246 \* \*17.172 \* \* 44.3 \*  
 \* 98 \* \* 1020 : 480 : 540 \* \*1.511 :0.711 :0.800 \* \*37.77 :17.78 : 20.0 \* \*0.200 \*0.094 \*0.106 \* \*47.059 \* \* 77.8 \*  
 \* 163 \* \* 910 : 830 : 80 \* \*0.840 :0.766 :0.074 \* \* 21 :19.15 : 1.8 \* \*0.111 \*0.102 \*0.010 \* \*91.209 \* \*130.5 \*  
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 \* CUMULATIVE VALUES \*  
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 \* \*Total :Water : Oil \* \*Total :Water : Oil \* \*Total :Water : Oil \* \*Oil \*Water \* Oil \* \* % \* \*  
 \* Time \* \*Volume:Volume:Volume\* \* Flow : Flow : Flow \* \* Rate : Rate : Rate \* \* Film \* Film \* Film \* \* Water \* \*  
 \* (s) \* \* (ml) : (ml) : (ml) \* \*(l/mn):(l/mn):(l/mn)\* \*(ml/r):(ml/r):(ml/r)\* \*(mm) \* (mm) \* (mm) \* \* \* \* \*  
 \* \*\*\*\*\* \*  
 \* 15.5 \* \* 1165 : 30 : 1135 \* \*4.510 :0.116 :4.394 \* \*112.7 :2.903 :109.8 \* \*0.598 \*0.015 \*0.582 \* \* 2.575 \* \*  
 \* 31 \* \* 2175 : 80 : 2095 \* \*4.209 :0.154 :4.054 \* \*105.2 :3.870 :101.3 \* \*0.558 \*0.021 \*0.537 \* \* 3.678 \* \*  
 \* 57.5 \* \* 3165 : 250 : 2915 \* \*3.302 :0.260 :3.041 \* \*82.56 :6.521 :76.04 \* \*0.438 \*0.035 \*0.403 \* \* 7.899 \* \*  
 \* 98 \* \* 4185 : 730 : 3455 \* \*2.562 :0.446 :2.115 \* \*64.05 :11.17 :52.88 \* \*0.339 \*0.059 \*0.280 \* \*17.443 \* \*  
 \* 163 \* \* 5095 : 1560 : 3535 \* \*1.875 :0.574 :1.301 \* \*46.88 :14.35 :32.53 \* \*0.248 \*0.076 \*0.172 \* \*30.618 \* \*  
 \* \*\*\*\*\* \*



การจุ่ม 5.12พ.

Type of drum: FVC rough  
 Condition: WASTE N=1  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 61 rev/mn

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 \* EXPERIMENTAL VALUES \*  
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* Time * (s)	* Total * (ml)	* Water * (ml)	* Oil * (ml)	* Total * (l/mn)	* Water * (l/mn)	* Oil * (l/mn)	* Total * (ml/r)	* Water * (ml/r)	* Oil * (ml/r)	* Total * (mm)	* Water * (mm)	* Oil * (mm)	* % * Water	* Time * (s)
11	1075	170	905	5.864	0.927	4.936	96.1	15.20	80.9	0.509	0.081	0.429	15.814	5.5
22	995	200	795	5.427	1.091	4.336	88.97	17.88	71.1	0.472	0.095	0.377	20.101	16.5
36	980	290	690	4.200	1.243	2.957	68.85	20.37	48.5	0.365	0.108	0.257	29.592	29.0
57	1015	555	460	2.900	1.586	1.314	47.54	26.00	21.5	0.252	0.138	0.114	54.680	46.5
90	1030	650	380	1.873	1.182	0.691	30.70	19.37	11.3	0.163	0.103	0.060	63.107	73.5
120	1115	985	130	2.230	1.970	0.260	36.55	32.30	4.3	0.194	0.171	0.023	88.341	105.0

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 \* CUMULATIVE VALUES \*  
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* Time * (s)	* Total * (ml)	* Water * (ml)	* Oil * (ml)	* Total * (l/mn)	* Water * (l/mn)	* Oil * (l/mn)	* Total * (ml/r)	* Water * (ml/r)	* Oil * (ml/r)	* Total * (mm)	* Water * (mm)	* Oil * (mm)	* % * Water
11	1075	170	905	5.864	0.927	4.936	96.1	15.20	80.9	0.509	0.081	0.429	15.814
22	2070	370	1700	5.645	1.009	4.636	92.54	16.54	76.00	0.509	0.081	0.429	15.814
36	3050	660	2390	5.083	1.1	3.983	83.33	18.03	65.30	0.491	0.088	0.403	17.874
57	4065	1215	2850	4.278	1.278	3	70.14	20.96	49.18	0.442	0.096	0.346	21.639
90	5095	1865	3230	3.396	1.243	2.153	55.68	20.38	35.30	0.372	0.111	0.261	29.889
120	6210	2850	3360	3.105	1.425	1.68	50.90	23.36	27.54	0.295	0.108	0.187	36.605
										0.270	0.124	0.146	45.894

การวาง 6.1 W.

Type of drum:  
Condition:  
Depth of immersion in water:  
Depth of immersion in oil:  
Motor Speed:

FLUOROCARBON  
WASTE N=2  
A= 1.0 cm  
H= 1.5 cm  
S= 20 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
33	910	0	910	1.655	0.000	1.655	82.7	0.00	82.7	0.438	0.000	0.438	0.000	16.5
54	950	0	950	2.714	0.000	2.714	135.7	0.00	135.7	0.719	0.000	0.719	0.000	43.5
74	900	0	900	2.700	0.000	2.700	135	0.00	135.0	0.716	0.000	0.716	0.000	64.0
98	1070	0	1070	2.675	0.000	2.675	133.7	0.00	133.8	0.709	0.000	0.709	0.000	86.0
128	980	10	970	1.960	0.020	1.940	98	1.00	97.0	0.519	0.005	0.514	1.020	113.0
191	1020	20	1000	0.971	0.019	0.952	48.57	0.95	47.6	0.257	0.005	0.252	1.961	159.5
387	730	80	650	0.223	0.024	0.199	11.17	1.22	9.9	0.059	0.006	0.053	10.959	289.0
604	180	60	120	0.050	0.017	0.033	2.488	0.83	1.7	0.013	0.004	0.009	33.333	495.5

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water
33	910	0	910	1.655	0.000	1.655	82.7	0.000	82.7	0.438	0.000	0.438	0.000
54	1860	0	1860	2.066	0.000	2.066	103.3	0.000	103.3	0.548	0.000	0.548	0.000
74	2760	0	2760	2.237	0.000	2.237	111.8	0.000	111.8	0.593	0.000	0.593	0.000
98	3830	0	3830	2.344	0.000	2.344	117.2	0.000	117.2	0.621	0.000	0.621	0.000
128	4810	10	4800	2.254	0.004	2.25	112.7	0.234	112.5	0.597	0.001	0.596	0.208
191	5830	30	5800	1.831	0.009	1.821	91.57	0.471	91.09	0.485	0.002	0.483	0.515
387	6560	110	6450	1.017	0.017	1	50.85	0.852	50	0.270	0.005	0.265	1.677
604	6740	170	6570	0.669	0.016	0.652	33.47	0.844	32.63	0.177	0.004	0.173	2.522

การวิจัย 6.2 น.

Type of drum: FLUOROCARBON  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 40 rev/mn

EXPERIMENTAL VALUES

* Time (s)	* Total Volume (ml)	* Water Volume (ml)	* Oil Volume (ml)	* Total Flow (l/mn)	* Water Flow (l/mn)	* Oil Flow (l/mn)	* Total Rate (ml/r)	* Water Rate (ml/r)	* Oil Rate (ml/r)	* Film (mm)	* Water Film (mm)	* Oil Film (mm)	* % Water	* Time (s)
* 12	* 990	* 5	* 985	* 4.950	* 0.025	* 4.925	* 123.8	* 0.63	* 123.1	* 0.656	* 0.003	* 0.653	* 0.505	* 6.0
* 21	* 1000	* 20	* 980	* 6.667	* 0.133	* 6.533	* 166.6	* 3.33	* 163.3	* 0.883	* 0.018	* 0.866	* 2.000	* 16.5
* 26	* 940	* 30	* 910	* 11.28	* 0.360	* 10.92	* 282	* 9.00	* 273.0	* 1.495	* 0.048	* 1.447	* 3.191	* 23.5
* 37	* 1040	* 40	* 1000	* 5.673	* 0.218	* 5.455	* 141.8	* 5.45	* 136.4	* 0.752	* 0.029	* 0.723	* 3.846	* 31.5
* 54	* 1015	* 120	* 895	* 3.582	* 0.424	* 3.159	* 89.55	* 10.59	* 79.0	* 0.475	* 0.056	* 0.419	* 11.823	* 45.5
* 83	* 950	* 190	* 760	* 1.966	* 0.393	* 1.572	* 49.13	* 9.83	* 39.3	* 0.260	* 0.052	* 0.208	* 20.000	* 68.5
* 121	* 805	* 205	* 600	* 1.271	* 0.324	* 0.947	* 31.77	* 8.09	* 23.7	* 0.168	* 0.043	* 0.126	* 25.466	* 102.0
* 173	* 550	* 340	* 210	* 0.635	* 0.392	* 0.242	* 15.86	* 9.81	* 6.1	* 0.084	* 0.052	* 0.032	* 61.818	* 147.0
* 256	* 680	* 480	* 200	* 0.492	* 0.347	* 0.145	* 12.28	* 8.67	* 3.6	* 0.065	* 0.046	* 0.019	* 70.588	* 214.5
* 380	* 820	* 630	* 190	* 0.397	* 0.305	* 0.092	* 9.919	* 7.62	* 2.3	* 0.053	* 0.040	* 0.012	* 76.829	* 318.0
* 487	* 560	* 430	* 130	* 0.314	* 0.241	* 0.073	* 7.850	* 6.03	* 1.8	* 0.042	* 0.032	* 0.010	* 76.786	* 433.5

CUMULATIVE VALUES

* Time (s)	* Total Volume (ml)	* Water Volume (ml)	* Oil Volume (ml)	* Total Flow (l/mn)	* Water Flow (l/mn)	* Oil Flow (l/mn)	* Total Rate (ml/r)	* Water Rate (ml/r)	* Oil Rate (ml/r)	* Oil Film (mm)	* Water Film (mm)	* Oil Film (mm)	* % Water
* 12	* 990	* 5	* 985	* 4.950	* 0.025	* 4.925	* 123.8	* 0.625	* 123.1	* 0.656	* 0.003	* 0.653	* 0.505
* 21	* 1990	* 25	* 1965	* 5.685	* 0.071	* 5.614	* 142.1	* 1.785	* 140.3	* 0.753	* 0.009	* 0.744	* 1.256
* 26	* 2930	* 55	* 2875	* 6.761	* 0.126	* 6.634	* 169.0	* 3.173	* 165.8	* 0.896	* 0.017	* 0.879	* 1.877
* 37	* 3970	* 95	* 3875	* 6.437	* 0.154	* 6.283	* 160.9	* 3.851	* 157.0	* 0.853	* 0.020	* 0.833	* 2.393
* 54	* 4985	* 215	* 4770	* 5.538	* 0.238	* 5.3	* 138.4	* 5.972	* 132.5	* 0.734	* 0.032	* 0.702	* 4.313
* 83	* 5935	* 405	* 5530	* 4.290	* 0.292	* 3.997	* 107.2	* 7.319	* 99.93	* 0.568	* 0.039	* 0.530	* 6.824
* 121	* 6740	* 610	* 6130	* 3.342	* 0.302	* 3.039	* 83.55	* 7.561	* 75.99	* 0.443	* 0.040	* 0.403	* 9.050
* 173	* 7290	* 950	* 6340	* 2.528	* 0.329	* 2.198	* 63.20	* 8.236	* 54.97	* 0.335	* 0.044	* 0.291	* 13.032
* 256	* 7970	* 1430	* 6540	* 1.867	* 0.335	* 1.532	* 46.69	* 8.378	* 38.32	* 0.248	* 0.044	* 0.203	* 17.942
* 380	* 8790	* 2060	* 6730	* 1.387	* 0.325	* 1.062	* 34.69	* 8.131	* 26.56	* 0.184	* 0.043	* 0.141	* 23.436
* 487	* 9350	* 2490	* 6860	* 1.151	* 0.306	* 0.845	* 28.79	* 7.669	* 21.12	* 0.153	* 0.041	* 0.112	* 26.631

ตารางที่ 6.3 น.

Type of drum:  
 Condition:  
 Depth of immersion in water:  
 Depth of immersion in oil:  
 Motor Speed:

FLUOROCARBON  
 WASTE N=2  
 A= 1.0 cm  
 H= 2.5 cm  
 S= 61 rev/min

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Film (mm)	Film (mm)	Film (mm)	% Water	Time (s)
8	900	20	880	6.750	0.150	6.600	110.7	2.46	108.2	0.586	0.013	0.573	2.222	4.0
14	1040	40	1000	10.40	0.400	10.00	170.4	6.56	163.9	0.904	0.035	0.869	3.846	11.0
18	1020	60	960	15.30	0.900	14.40	250.8	14.75	236.1	1.329	0.078	1.251	5.882	16.0
26	1070	160	910	8.025	1.200	6.825	131.5	19.67	111.9	0.697	0.104	0.593	14.953	22.0
37	1150	320	830	6.273	1.745	4.527	102.8	28.61	74.2	0.545	0.152	0.393	27.826	31.5
53	1140	410	730	4.275	1.538	2.738	70.08	25.20	44.9	0.371	0.134	0.238	35.965	45.0
72	870	440	430	2.747	1.389	1.358	45.03	22.78	22.3	0.239	0.121	0.118	50.575	62.5
110	860	470	390	1.358	0.742	0.616	22.26	12.17	10.1	0.118	0.064	0.054	54.651	91.0
164	840	640	200	0.933	0.711	0.222	15.30	11.66	3.6	0.081	0.062	0.019	76.190	137.0
212	730	570	160	0.913	0.713	0.200	14.95	11.68	3.3	0.079	0.062	0.012	82.000	252.5
293	1000	820	180	0.741	0.607	0.133	12.14	9.96	2.2	0.064	0.053	0.012	82.000	338.0
383	980	830	150	0.653	0.553	0.100	10.71	9.07	1.6	0.057	0.048	0.009	84.694	436.5
490	1000	850	150	0.561	0.477	0.084	9.192	7.81	1.4	0.049	0.041	0.007	85.000	530.0
570	800	710	90	0.600	0.533	0.068	9.836	8.73	1.1	0.052	0.046	0.006	88.750	636.5
703	610	510	100	0.275	0.230	0.045	4.511	3.77	0.7	0.024	0.020	0.004	83.607	636.5

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Film (mm)	Film (mm)	Film (mm)	% Water
8	900	20	880	6.750	0.150	6.600	110.7	2.459	108.2	0.586	0.013	0.573	2.222
14	1940	60	1880	8.314	0.257	8.057	136.2	4.215	132.0	0.722	0.022	0.700	3.093
18	2960	120	2840	9.866	0.4	9.466	161.7	6.557	155.1	0.857	0.035	0.823	4.054
26	4030	280	3750	9.3	0.646	8.653	152.4	10.59	141.8	0.808	0.056	0.752	6.948
37	5180	600	4580	8.4	0.972	7.427	137.7	15.95	121.7	0.730	0.085	0.645	11.583
53	6320	1010	5310	7.154	1.143	6.011	117.2	18.74	98.54	0.622	0.099	0.522	15.981
72	7190	1450	5740	5.991	1.208	4.783	98.22	19.80	78.41	0.521	0.105	0.416	20.167
110	8050	1920	6130	4.390	1.047	3.343	71.98	17.16	54.81	0.382	0.091	0.291	23.851
164	8890	2560	6330	3.252	0.936	2.315	53.31	15.35	37.96	0.283	0.081	0.201	28.796
212	9620	3130	6490	2.722	0.885	1.836	44.63	14.52	30.11	0.237	0.077	0.160	32.536
293	10620	3950	6670	2.174	0.808	1.365	35.65	13.26	22.39	0.189	0.070	0.119	37.194
383	11600	4760	6820	1.817	0.748	1.068	29.79	12.27	17.51	0.158	0.065	0.093	41.207
490	12600	5630	6970	1.542	0.689	0.853	25.29	11.30	13.99	0.134	0.060	0.074	44.683
570	13400	6340	7060	1.410	0.667	0.743	23.12	10.94	12.18	0.123	0.058	0.065	47.313
703	14010	6850	7160	1.195	0.584	0.611	19.60	9.584	10.01	0.104	0.051	0.053	48.894



การวัด 6.4 W.

Type of drum: STAINLESS STEEL  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 20 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
30	880	5	875	1.760	0.010	1.750	88.0	0.50	87.5	0.466	0.003	0.464	0.568	15.0
48	840	10	830	2.800	0.033	2.767	140	1.67	138.3	0.742	0.009	0.733	1.190	39.0
68	1060	10	1050	3.180	0.030	3.150	159	1.50	157.5	0.843	0.008	0.835	0.943	58.0
89	930	10	920	2.657	0.029	2.629	132.8	1.43	131.4	0.704	0.008	0.697	1.075	78.5
116	900	15	885	2.000	0.033	1.967	100	1.67	98.3	0.530	0.009	0.521	1.667	102.5
170	930	40	890	1.033	0.044	0.989	51.66	2.22	49.4	0.274	0.012	0.262	4.301	143.0
236	840	120	720	0.764	0.109	0.655	38.18	5.45	32.7	0.202	0.029	0.173	14.286	203.0
346	650	260	390	0.355	0.142	0.213	17.72	7.09	10.6	0.094	0.038	0.056	40.000	291.0
468	420	320	100	0.207	0.157	0.049	10.32	7.87	2.5	0.055	0.042	0.013	76.190	407.0

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water
30	880	5	875	1.760	0.010	1.750	88.0	0.500	87.5	0.466	0.003	0.464	0.568
48	1720	15	1705	2.15	0.018	2.131	107.5	0.937	106.5	0.570	0.005	0.565	0.872
68	2780	25	2755	2.452	0.022	2.430	122.6	1.102	121.5	0.650	0.006	0.644	0.899
89	3710	35	3675	2.501	0.023	2.477	125.0	1.179	123.8	0.663	0.006	0.657	0.943
116	4610	50	4560	2.384	0.025	2.358	119.2	1.293	117.9	0.632	0.007	0.625	1.085
170	5540	90	5450	1.955	0.031	1.923	97.76	1.588	96.17	0.518	0.008	0.510	1.625
236	6380	210	6170	1.622	0.053	1.568	81.10	2.669	78.43	0.430	0.014	0.416	3.292
346	7030	470	6560	1.219	0.081	1.137	60.95	4.075	56.87	0.323	0.022	0.301	6.686
468	7450	790	6660	0.955	0.101	0.853	47.75	5.064	42.69	0.253	0.027	0.226	10.604

ตารางที่ 6.5พ.

Type of drum: STAINLESS STEEL  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 40 rev/mn

EXPERIMENTAL VALUES

* Time * (s)	* Total * Volume * (ml)	* Water * Volume * (ml)	* Oil * Volume * (ml)	* Total * Flow * (1/mn)	* Water * Flow * (1/mn)	* Oil * Flow * (1/mn)	* Total * Rate * (ml/r)	* Water * Rate * (ml/r)	* Oil * Rate * (ml/r)	* Total * Film * (mm)	* Water * Film * (mm)	* Oil * Film * (mm)	* % * Water	* Time * (s)
13	900	10	890	4.154	0.046	4.108	103.8	1.15	102.7	0.550	0.006	0.544	1.111	6.5
25	860	100	760	4.300	0.500	3.800	107.5	12.50	95.0	0.570	0.066	0.504	11.628	19.0
52	850	210	640	1.889	0.467	1.422	47.22	11.67	35.6	0.250	0.062	0.188	24.706	38.5
91	850	320	530	1.308	0.492	0.815	32.69	12.31	20.4	0.173	0.065	0.108	37.647	71.5
149	750	550	200	0.776	0.569	0.207	19.39	14.22	5.2	0.103	0.075	0.027	73.333	120.0
227	890	700	190	0.685	0.538	0.146	17.11	13.46	3.7	0.091	0.071	0.019	78.652	188.0
311	920	730	190	0.657	0.521	0.136	16.42	13.04	3.4	0.087	0.069	0.018	79.348	269.0
395	840	710	130	0.600	0.507	0.093	15	12.68	2.3	0.080	0.067	0.012	84.524	353.0
481	860	720	140	0.600	0.502	0.098	15	12.56	2.4	0.080	0.067	0.013	83.721	438.0
566	870	720	150	0.614	0.508	0.106	15.35	12.71	2.6	0.081	0.067	0.014	82.759	523.5

CUMULATIVE VALUES

* Time * (s)	* Total * Volume * (ml)	* Water * Volume * (ml)	* Oil * Volume * (ml)	* Total * Flow * (1/mn)	* Water * Flow * (1/mn)	* Oil * Flow * (1/mn)	* Total * Rate * (ml/r)	* Water * Rate * (ml/r)	* Oil * Rate * (ml/r)	* Total * Film * (mm)	* Water * Film * (mm)	* Oil * Film * (mm)	* % * Water
13	900	10	890	4.154	0.046	4.108	103.8	1.154	102.7	0.550	0.006	0.544	1.111
25	1760	110	1650	4.224	0.264	3.96	105.6	6.6	99	0.560	0.035	0.525	6.250
52	2610	320	2290	3.011	0.369	2.642	75.28	9.230	66.05	0.399	0.049	0.350	12.261
91	3460	640	2820	2.281	0.421	1.859	57.03	10.54	46.48	0.302	0.056	0.246	18.497
149	4210	1190	3020	1.695	0.479	1.216	42.38	11.97	30.40	0.225	0.063	0.161	28.266
227	5100	1890	3210	1.348	0.499	0.848	33.70	12.48	21.21	0.179	0.066	0.112	37.059
311	6020	2620	3400	1.161	0.505	0.655	29.03	12.63	16.39	0.154	0.067	0.087	43.522
395	6860	3330	3530	1.042	0.505	0.536	26.05	12.64	13.40	0.138	0.067	0.071	48.542
481	7720	4050	3670	0.962	0.505	0.457	24.07	12.62	11.44	0.128	0.067	0.061	52.461
566	8590	4770	3820	0.910	0.505	0.404	22.76	12.64	10.12	0.121	0.067	0.054	55.530

ตารางที่ 6.6 น.

Type of drum : STAINLESS STEEL  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 61 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
8	930	50	880	6.975	0.375	6.600	114.3	6.15	108.2	0.606	0.033	0.573	5.376	4.0
13	800	60	740	9.600	0.720	8.880	157.3	11.80	145.6	0.834	0.063	0.772	7.500	10.5
17	990	80	910	14.85	1.200	13.65	243.4	19.67	223.8	1.290	0.104	1.186	8.081	15.0
25	1050	200	850	7.875	1.500	6.375	129.0	24.59	104.5	0.684	0.130	0.554	19.048	21.0
33	980	230	750	7.350	1.725	5.625	120.4	28.28	92.2	0.639	0.150	0.489	23.469	29.0
48	1190	420	680	4.400	1.680	2.720	72.13	27.54	44.6	0.382	0.146	0.236	38.182	40.5
61	910	380	530	4.200	1.754	2.446	68.85	28.75	40.1	0.365	0.152	0.213	41.758	54.5
87	1040	520	520	2.400	1.200	1.200	39.34	19.67	19.7	0.209	0.104	0.104	50.000	74.0
112	830	500	330	1.992	1.200	0.792	32.65	19.67	13.0	0.173	0.104	0.069	60.241	99.5
144	640	670	170	1.575	1.256	0.319	25.81	20.59	5.2	0.137	0.109	0.028	79.762	128.0
174	780	630	150	1.560	1.260	0.300	25.57	20.66	4.9	0.136	0.109	0.026	80.769	159.0
215	980	830	150	1.434	1.215	0.220	23.51	19.91	3.6	0.125	0.106	0.019	84.694	194.5
250	880	700	180	1.509	1.200	0.309	24.73	19.67	5.1	0.131	0.104	0.027	79.545	232.5
285	890	740	150	1.526	1.269	0.257	25.01	20.80	4.2	0.133	0.110	0.022	83.146	267.5
323	920	770	150	1.453	1.216	0.237	23.81	19.93	3.9	0.126	0.106	0.021	83.696	304.0
357	820	710	110	1.447	1.253	0.194	23.72	20.54	3.2	0.126	0.109	0.017	86.585	340.0
394	870	750	120	1.411	1.216	0.195	23.12	19.94	3.2	0.123	0.106	0.017	86.207	375.5
467	690	500	190	0.567	0.411	0.156	9.297	6.74	2.6	0.049	0.036	0.014	72.464	430.5

ตารางที่ 6.7 น.

Type of drum: FVC smooth  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 20 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
31	860	0	860	1.665	0.000	1.665	83.2	0.00	83.2	0.441	0.000	0.441	0.000	15.5
51	850	5	845	2.550	0.015	2.535	127.5	0.75	126.8	0.676	0.004	0.672	0.588	41.0
81	860	10	850	1.720	0.020	1.700	86	1.00	85.0	0.456	0.005	0.451	1.163	66.0
134	910	20	890	1.030	0.023	1.008	51.50	1.13	50.4	0.273	0.006	0.267	2.198	107.5
210	720	40	680	0.568	0.032	0.537	28.42	1.58	26.8	0.151	0.008	0.142	5.556	172.0
315	520	170	350	0.297	0.097	0.200	14.85	4.86	10.0	0.079	0.026	0.053	32.692	262.5
447	390	240	150	0.177	0.109	0.068	8.863	5.45	3.4	0.047	0.029	0.018	61.538	381.0

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water
31	860	0	860	1.665	0.000	1.665	83.2	0.000	83.2	0.441	0.000	0.441	0.000
51	1710	5	1705	2.011	0.005	2.005	100.5	0.294	100.2	0.533	0.002	0.532	0.292
81	2570	15	2555	1.903	0.011	1.892	95.18	0.555	94.62	0.504	0.003	0.502	0.584
134	3480	35	3445	1.558	0.015	1.542	77.91	0.783	77.12	0.413	0.004	0.409	1.006
210	4200	75	4125	1.2	0.021	1.178	60	1.071	58.92	0.318	0.006	0.312	1.786
315	4720	245	4475	0.899	0.046	0.852	44.95	2.333	42.61	0.238	0.012	0.226	5.191
447	5110	485	4625	0.685	0.065	0.620	34.29	3.255	31.04	0.182	0.017	0.165	9.491



การวาง 6.8 น.

Type of drum:  
Condition:  
Depth of immersion in water:  
Depth of immersion in oil:  
Motor Speed:

FVC smooth  
WASTE N=2  
A= 1.0 cm  
H= 2.5 cm  
S= 40 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
11	920	5	915	5.018	0.027	4.991	125.5	0.68	124.8	0.665	0.004	0.661	0.543	5.5
19	900	20	880	6.750	0.150	6.600	168.7	3.75	165.0	0.894	0.020	0.875	2.222	15.0
27	940	30	910	7.050	0.225	6.825	176.2	5.63	170.6	0.934	0.030	0.904	3.191	23.0
44	1030	90	940	3.635	0.318	3.318	90.88	7.94	82.9	0.482	0.042	0.440	8.738	35.5
73	800	190	610	1.655	0.393	1.262	41.37	9.83	31.6	0.219	0.052	0.167	23.750	58.5
118	810	340	470	1.080	0.453	0.627	27	11.33	15.7	0.143	0.060	0.083	41.975	95.5
196	920	640	280	0.708	0.492	0.215	17.69	12.31	5.4	0.094	0.065	0.029	69.565	157.0
270	840	610	230	0.681	0.495	0.186	17.02	12.36	4.7	0.090	0.066	0.025	72.619	233.0
341	730	560	170	0.617	0.473	0.144	15.42	11.83	3.6	0.082	0.063	0.019	76.712	305.5
428	810	620	190	0.559	0.428	0.131	13.96	10.69	3.3	0.074	0.057	0.017	76.543	384.5
532	880	710	170	0.508	0.410	0.098	12.69	10.24	2.5	0.067	0.054	0.013	80.682	480.0
645	870	720	150	0.462	0.382	0.080	11.54	9.56	2.0	0.061	0.051	0.011	82.759	588.5

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water
11	920	5	915	5.018	0.027	4.991	125.5	0.682	124.8	0.665	0.004	0.661	0.543
19	1820	25	1795	5.747	0.078	5.668	143.6	1.973	141.7	0.762	0.010	0.751	1.374
27	2760	55	2705	6.133	0.122	6.011	153.3	3.055	150.2	0.813	0.016	0.796	1.993
44	3790	145	3645	5.168	0.197	4.970	129.2	4.943	124.2	0.685	0.026	0.659	3.826
73	4590	335	4255	3.772	0.275	3.497	94.31	6.883	87.43	0.500	0.036	0.463	7.298
118	5400	675	4725	2.745	0.343	2.402	68.64	8.580	60.06	0.364	0.045	0.318	12.500
196	6320	1315	5005	1.934	0.402	1.532	48.36	10.06	38.30	0.256	0.053	0.203	20.807
270	7160	1925	5235	1.591	0.427	1.163	39.77	10.69	29.08	0.211	0.057	0.154	26.885
341	7890	2485	5405	1.388	0.437	0.951	34.70	10.93	23.77	0.184	0.058	0.126	31.496
428	8700	3105	5595	1.219	0.435	0.784	30.49	10.88	19.60	0.162	0.056	0.104	35.690
532	9580	3815	5765	1.080	0.430	0.650	27.01	10.75	16.25	0.143	0.057	0.086	39.823
645	10450	4535	5915	0.972	0.421	0.550	24.30	10.54	13.75	0.129	0.056	0.073	43.397

ตารางที่ 6.9 ผ.

Type of drum:  
 Conditions:  
 Depth of immersion in water:  
 Depth of immersion in oil:  
 Motor Speed:

PVC smooth  
 WASTE N=2  
 A= 1.0 cm  
 H= 2.5 cm  
 S= 61 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
8	860	40	820	6.450	0.300	6.150	105.7	4.92	100.8	0.560	0.026	0.534	4.651	4.0
14	950	50	900	9.500	0.500	9.000	155.7	8.20	147.5	0.825	0.043	0.782	5.263	11.0
18	1050	90	960	15.75	1.350	14.40	258.1	22.13	236.1	1.368	0.117	1.251	8.571	16.0
28	1290	220	1070	7.740	1.320	6.420	126.8	21.64	105.2	0.672	0.115	0.558	17.054	23.0
39	1020	310	710	5.564	1.691	3.873	91.20	27.72	63.5	0.483	0.147	0.336	30.392	33.5
55	1020	390	630	3.825	1.463	2.363	62.70	23.98	38.7	0.332	0.127	0.205	38.235	47.0
81	940	550	390	2.169	1.269	0.900	35.56	20.81	14.8	0.188	0.110	0.078	58.511	68.0
124	980	800	180	1.367	1.116	0.251	22.41	18.30	4.1	0.119	0.097	0.022	81.633	102.5
224	850	710	140	0.510	0.426	0.084	8.360	6.98	1.4	0.044	0.037	0.007	83.529	174.0
282	1040	900	140	1.076	0.931	0.145	17.83	15.26	2.4	0.093	0.081	0.013	86.538	253.0
329	850	730	120	1.085	0.932	0.153	17.78	15.28	2.5	0.094	0.081	0.013	85.882	305.5
382	1000	850	150	1.132	0.962	0.170	18.55	15.77	2.8	0.098	0.084	0.015	85.000	355.5
453	890	750	140	0.752	0.634	0.118	12.32	10.39	1.9	0.065	0.055	0.010	84.270	417.5
517	290	210	80	0.272	0.197	0.075	4.456	3.23	1.2	0.024	0.017	0.007	72.414	485.0
652	130	80	50	0.058	0.036	0.022	0.947	0.58	0.4	0.005	0.003	0.002	61.538	584.5

ตารางที่ 6.10ผ.

Type of drum: PVC rough  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 20 rev/mn

EXPERIMENTAL VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water	Time (s)
37	940	0	940	1.524	0.000	1.524	76.2	0.00	76.2	0.404	0.000	0.404	0.000	18.5
60	840	10	830	2.191	0.026	2.165	109.5	1.30	108.3	0.581	0.007	0.574	1.190	48.5
85	910	10	900	2.184	0.024	2.160	109.2	1.20	108.0	0.579	0.006	0.572	1.099	72.5
108	950	10	940	2.478	0.026	2.452	123.9	1.30	122.6	0.657	0.007	0.650	1.053	96.5
153	960	20	940	1.280	0.027	1.253	64	1.33	62.7	0.339	0.007	0.332	2.083	130.5
223	850	50	800	0.729	0.043	0.686	36.42	2.14	34.3	0.193	0.011	0.182	5.882	188.0
293	700	60	640	0.600	0.051	0.549	30	2.57	27.4	0.159	0.014	0.145	8.571	258.0
482	710	350	360	0.225	0.111	0.114	11.26	5.56	5.7	0.060	0.029	0.030	49.296	387.5

CUMULATIVE VALUES

Time (s)	Total Volume (ml)	Water Volume (ml)	Oil Volume (ml)	Total Flow (1/mn)	Water Flow (1/mn)	Oil Flow (1/mn)	Total Rate (ml/r)	Water Rate (ml/r)	Oil Rate (ml/r)	Total Film (mm)	Water Film (mm)	Oil Film (mm)	% Water
37	940	0	940	1.524	0.000	1.524	76.2	0.000	76.2	0.404	0.000	0.404	0.000
60	1780	10	1770	1.78	0.01	1.77	89	0.5	88.5	0.472	0.003	0.469	0.562
85	2690	20	2670	1.898	0.014	1.884	94.94	0.705	94.23	0.503	0.004	0.499	0.743
108	3640	30	3610	2.022	0.016	2.005	101.1	0.833	100.2	0.536	0.004	0.531	0.824
153	4600	50	4550	1.803	0.019	1.784	90.19	0.980	89.21	0.478	0.005	0.473	1.087
223	5450	100	5350	1.466	0.026	1.439	73.31	1.345	71.97	0.389	0.007	0.381	1.835
293	6150	160	5990	1.259	0.032	1.226	62.96	1.638	61.33	0.334	0.009	0.325	2.602
482	6860	510	6350	0.853	0.063	0.790	42.69	3.174	39.52	0.226	0.017	0.209	7.434

ตารางที่ 6.11 น.

Type of drums: PVC rough  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 1.5 cm  
 Motor Speed: S= 40 rev/mn

EXPERIMENTAL VALUES												
Time (s)	Volume (ml)	Water (ml)	Oil (ml)	Total (ml)	Flow (1/mn)	Water (1/mn)	Oil (1/mn)	Total (1/mn)	Rate (ml/r)	Water (ml/r)	Oil (ml/r)	Total (ml/r)
12	950	5	945	4.750	0.025	4.725	118.8	0.63	118.1	0.629	0.003	0.626
20	980	30	950	7.350	0.225	7.125	183.7	5.63	178.1	0.974	0.030	0.944
28	980	40	940	7.350	0.300	7.050	183.7	7.50	176.2	0.974	0.040	0.934
44	1090	85	1005	4.087	0.319	3.768	102.1	7.97	94.2	0.542	0.042	0.499
72	900	230	670	1.929	0.493	1.436	48.21	12.32	35.9	0.256	0.065	0.190
105	900	390	510	1.636	0.709	0.927	40.90	17.73	23.2	0.217	0.094	0.123
140	870	430	440	1.491	0.737	0.754	37.28	18.43	18.9	0.198	0.098	0.100
214	1240	870	370	1.005	0.705	0.300	25.13	17.64	7.5	0.133	0.093	0.040
284	800	660	140	0.686	0.566	0.120	17.14	14.14	3.0	0.091	0.075	0.016
333	970	800	170	1.188	0.960	0.208	29.69	24.49	5.2	0.157	0.150	0.028
399	870	740	130	0.791	0.673	0.118	19.77	16.82	3.0	0.105	0.089	0.016
467	920	800	120	0.812	0.706	0.106	20.29	17.65	2.6	0.108	0.094	0.014
536	880	800	80	0.765	0.696	0.070	19.13	17.39	1.7	0.101	0.092	0.009
594	820	710	110	0.848	0.734	0.114	21.20	18.36	2.8	0.112	0.097	0.015
651	870	620	250	0.916	0.653	0.263	22.89	16.32	6.0	0.121	0.086	0.035
752	470	330	140	0.279	0.196	0.083	6.980	4.90	2.1	0.037	0.026	0.011

ตารางที่ 6.12 พ.

Type of drum: FVC rough  
 Condition: WASTE N=2  
 Depth of immersion in water: A= 1.0 cm  
 Depth of immersion in oil: H= 2.5 cm  
 Motor Speed: S= 61 rev/mn

EXPERIMENTAL VALUES

* Time (s) *	* Total Volume (ml) *	* Water Volume (ml) *	* Oil Volume (ml) *	* Total Flow (1/mn) *	* Water Flow (1/mn) *	* Oil Flow (1/mn) *	* Total Rate (ml/r) *	* Water Rate (ml/r) *	* Oil Rate (ml/r) *	* Total Film (mm) *	* Water Film (mm) *	* Oil Film (mm) *	* % Water *	* Time (s) *
9	890	10	880	5.933	0.067	5.867	97.3	1.09	96.2	0.516	0.006	0.510	1.124	4.5
14	970	40	930	11.64	0.480	11.16	190.8	7.87	183.0	1.011	0.042	0.970	4.124	11.5
19	1050	70	980	12.60	0.840	11.76	206.5	13.77	192.8	1.095	0.073	1.022	6.667	16.5
28	1290	220	1070	8.600	1.467	7.133	140.9	24.04	116.9	0.747	0.127	0.620	17.054	23.5
38	940	370	570	5.640	2.220	3.420	92.45	36.39	56.1	0.490	0.193	0.297	39.362	33.0
54	1010	540	470	3.786	2.025	1.763	62.09	33.20	28.9	0.329	0.176	0.153	53.465	46.0
79	900	610	290	2.160	1.464	0.696	35.40	24.00	11.4	0.188	0.127	0.060	67.778	66.5
107	840	690	150	1.800	1.479	0.321	29.50	24.24	5.3	0.156	0.128	0.028	82.143	93.0
138	910	760	150	1.761	1.471	0.290	28.87	24.11	4.8	0.153	0.128	0.025	83.516	122.5
180	1040	870	170	1.486	1.243	0.243	24.35	20.37	4.0	0.129	0.108	0.021	83.654	159.0
204	660	550	110	1.650	1.375	0.275	27.04	22.54	4.5	0.143	0.119	0.024	83.333	192.0
247	990	850	140	1.381	1.186	0.195	22.64	19.44	3.2	0.120	0.103	0.017	85.659	225.5
284	920	800	120	1.492	1.297	0.195	24.45	21.27	3.2	0.130	0.113	0.017	86.957	265.5
317	880	740	140	1.600	1.345	0.255	26.22	22.06	4.2	0.139	0.117	0.022	84.091	300.5
365	780	540	240	0.975	0.675	0.300	15.98	11.07	4.9	0.085	0.059	0.026	69.231	341.0
458	270	160	110	0.174	0.103	0.071	2.855	1.69	1.2	0.015	0.009	0.006	59.259	411.5

ภาคผนวก ข.

Linear, Power, Exponential, and Logarithmic Curve Fit

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10 CLS:PRINT"P904 COMPUTES THE LINEAR, POWER, EXPONENTIAL,"
20 PRINT"LOGARITHMIC CURVE FIT."
30 PRINT:PRINT"THE INPUT:"
40 PRINT"SINGLE PRECISION ONLY."
50 PRINT"IF PRINTER NOT USED Q2=0, IF USED Q2>0."
60 DEFINT I=0:INPUT"Q2";Q2:CLS
70 PRINT"NUMBER OF PAIRS X(I),Y(I) IN A SAMPLE: N"
80 INPUT"N";N:CLS
90 IF Q2=0 THEN GOTO 110
100 LPRINT "P904: Q2=";Q2;"N=";N
110 DIM X(N),Y(N)
120 PRINT"INPUT OF DATA:"
130 FOR I=1 TO N
140 PRINT "I=";I
150 INPUT"X(I)";X(I):INPUT"Y(I)";Y(I)
160 NEXT I
170 CLS:PRINT "CHECK THE INPUT:"
180 FOR I=1 TO N
190 PRINT "I=";I;"X(I)=";X(I);"Y(I)=";Y(I)
200 PRINT"IF NO ERROR IN X(I) INPUT 0"
210 PRINT"IF ERROR INPUT ANY NUMBER>0 AND THEN THE CORRECT X(I)"
220 INPUT"ERROR";K
230 IF K<0 THEN INPUT"X(I)";X(I)
240 PRINT:PRINT"IF NO ERROR IN Y(I) INPUT 0"
250 PRINT"IF ERROR INPUT ANY NUMBER>0 AND THEN THE CORRECT Y(I)"
260 INPUT"ERROR";K
270 IF K<0 THEN INPUT"Y(I)";Y(I)
280 CLS:NEXT I
290 IF Q2=0 THEN GOTO 350
300 LPRINT "THE INPUT:"
310 FOR I=1 TO N
320 LPRINT "I=";I;"X(I)=";X(I);"Y(I)=";Y(I)
330 NEXT I
340 LPRINT
350 CLS:PRINT"Q3 IS AN INTEGER VARIABLE DETERMINING THE CURVE FIT"
360 PRINT"SEVERAL OR ALL CURVE FITS MAY BE RUN TO FIND THE BEST"
370 PRINT"CURVE FIT FOR THE GIVEN DATA.":PRINT
380 PRINT "LINEAR CURVE FIT: Q3=1"
390 PRINT "POWER CURVE FIT: Q3=3"
400 PRINT "EXPONENTIAL CURVE FIT: Q3=4"
410 PRINT "LOGARITHMIC CURVE FIT: Q3=2"
420 INPUT"Q3";Q3
430 IF Q3<1 THEN GOTO 460
440 IF Q3>4 THEN GOTO 460
450 CLS:GOTO 480
460 PRINT"ERROR IN Q3":GOTO 420
470 REM COMPUTATION OF REGRESSION AND DETERMINATION COEFFICIENTS
480 LET X0=0
490 LET Y0=0
500 LET X2=0
510 LET X3=0
520 LET Y2=0
530 FOR I=1 TO N
540 ON Q3 GOTO 550 ,580 ,610 ,640
550 LET C=X(I)
560 LET D=Y(I)
570 GOTO 660
580 LET C=LOG(X(I))
590 LET D=Y(I)
600 GOTO 660
610 LET C=LOG(X(I))
620 LET D=LOG(Y(I))

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630 GOTO 660
640 LET C=X(1)
650 LET D=LOG(Y(1))
660 LET X0=X0+C
670 LET Y0=Y0+D
680 LET X2=X2+C*C
690 LET X3=X3+C*D
700 LET Y2=Y2+D*D
710 NEXT I
720 LET X0=X0/N
730 LET Y0=Y0/N
740 LET R=(X3-N*X0*Y0)/(X2-N*X0*X0)
750 LET A=Y0-B*X0
760 IF Q3<3 THEN GOTO 780
770 LET A=EXP(A)
780 LET R2=B*B*(X2-N*X0*X0)/(Y2-N*Y0*Y0)
790 REM COMPUTATION OF THE SUM OF SQUARES OF RESIDUALS
800 LET S=0
810 FOR I=1 TO N
820 ON Q3 GOTO 830 ,850 ,870 ,890
830 LET S0=A+B*X(I)-Y(I)
840 GOTO 900
850 LET S0=A+B*LOG(X(I))-Y(I)
860 GOTO 900
870 LET S0=A*(X(I)[B])-Y(I)
880 GOTO 900
890 LET S0=A*EXP(B*X(I))-Y(I)
900 LET S=S+S0*S0
910 NEXT I
920 PRINT"REGRESSION COEFFICIENTS: A,B"
930 PRINT"COEFFICIENT OF DETERMINATION: R2"
940 PRINT"IF R2=1 THE CURVE FIT IS PERFECT."
950 PRINT"SUM OF SQUARES OF RESIDUALS: S"
960 PRINT"IF S=0 THE CURVE GOES THROUGH ALL THE GIVEN POINTS."
970 PRINT
980 PRINT "Q3=";Q3;"A=";A;"B=";B;"R2=";R2;"S=";S
990 IF Q2=0 THEN GOTO 1070
1000 IF Q3=1 THEN LPRINT "LINEAR CURVE FIT:"
1010 IF Q3=3 THEN LPRINT "POWER CURVE FIT:"
1020 IF Q3=4 THEN LPRINT "EXPONENTIAL CURVE FIT:"
1030 IF Q3=2 THEN LPRINT "LOGARITHMIC CURVE FIT:"
1040 LPRINT "REGRESSION COEFFICIENTS: A=";A;"B=";B
1050 LPRINT "DETERMINATION COEFFICIENT R2=";R2
1060 LPRINT "SUM OF SQUARES OF RESIDUALS=";S
1070 PRINT"THE VALUES Y ON THE REGRESSION CURVE ARE COMPUTED"
1080 PRINT"FOR ANY NUMBER OF VALUES OF THE VARIABLE X."
1090 INPUT"X";X1
1100 ON Q3 GOTO 1110,1130,1150,1170
1110 LET Y1=A+B*X1
1120 GOTO 1180
1130 LET Y1=A+B*LOG(X1)
1140 GOTO 1180
1150 LET Y1=A*(X1[B])
1160 GOTO 1180
1170 LET Y1=A*EXP(B*X1)
1180 PRINT "Q3=";Q3;"X=";X1;"Y=";Y1
1190 IF Q2>0 THEN LPRINT "Q3=";Q3;"X=";X1;"Y=";Y1
1200 PRINT:PRINT"IF THE SAME CURVE FIT Q4=0, IF ANOTHER Q4>0."
1210 PRINT"TO STOP PRESS BREAK"
1220 INPUT"Q4";Q4
1230 IF Q4=0 THEN GOTO 1090
1240 IF Q2>0 THEN LPRINT
1250 GOTO 350
1260 END

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ประวัติผู้วิจัย

ชื่อผู้วิจัย : นายอำพล รัตนแสงค์ชัย

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