

REFERENCE

1. Shelt, B.B., Baudelin, F.J. and Shangraw, R.F., "Compressed Tablets", Pharmaceutical Dosage Forms Tablets Volume 1, 109-185, 1980.
2. Cook, E.F. and Martin, E.W., "The Manufacturing of Tablets", Remington's Practice of Pharmacy 1286-1298, 1948.
3. Davies, W.L. and Gloor, Jr.W.T., "Batch Production of Pharmaceutical Granulations in a Fluid Bed II: Effect of Various Binders and Their Concentration of Granulations and Compressed Tablets", J.Pharm.Sci., 6(14), 618-622, 1972.
4. Wurster, D.E., "Particle Coating Method", Pharmaceutical Dosage Forms Tablets Volume 3, 119-148, 1982.
5. Fonner, D.E., Banker, G.S. and Anderson, N.R., "Granulation and Tablet Characteristics", Pharmaceutical Dosage Forms Tablets Volume 2, 185-267, 1981.
6. Chalmers, A.A. and Elworthy, P.H., "Oxytetracycline Tablet Formulation :The Influence of Excipients and The Method of Granulation", J.Pharm.Pharmacol., 28, 234-238, 1976.
7. *ibid*, "Oxytetracycline Tablet Formulations:The effect of Wet Mixing Time, Particle Size and Batch

- Variation on Granule and Tablet Properties",
J.Pharm.Pharmacol., 28, 239-243, 1975.
8. Davies, W.L. and Gloor, W.T., "Batch Production of Pharmaceutical Granulation in a Fluidized Bed I: Effect of Process Variables on Physical Properties of final Granulation",
J.Pharm.Sci., 6(12), 1869-1874, 1971.
 9. *ibid*, 62(1), 170-171, 1973.
 10. Fonner, D.E., Banker, G.S. and Swarbrick, I., "Micromeritics of Granular Pharmaceutical Solid I: Physical Properties of Particles Prepared by Fine Different Granulation Methods", J.Pharm.Sci., 55, 181-186, 1966.
 11. Danish, F.Q. and Parrott, E.L., "Flow Rate of Solid Particulate Pharmaceutical", J.Pharm.Sci., 60(4), 548-553, 1971.
 12. Henry, J.M., Ibrahim, M.J. and William, E.S., "Tablet Granulations Composed of Spherical-shaped Particles", J.Pharm.Sci., 61(9), 1466-1468, 1972.
 13. Marks, A.M. and Sciarra, J.J., "Effect of Size on Other Physical Properties of Granules and Their Corresponding Tablets", J.Pharm.Sci., 57(3), 497-504, 1968.
 14. Arambulo, A.S. and Deardorff, D.L., "Compressed Tablets-Average Weight", J.Am.Pharm.Assoc. Sci., 42, 690-691, 1953.
 15. *ibid*, 42, 692-694, 1953.



16. Farlano, A.J. and Chavkin, L., "The Effect of Granule Size", J.Am.Pharm.Assoc.Sci.Ed., 49, 67-69, 1960.
17. Riddfo, A.S., Thomphins, L., Bechtol, L.D. and Cormichel, R.H., "Benoxaprofen, A New Anti-Inflammatory Agent: Particle-Size Effect on Dissolution Rate and Oral Absorption in Humans", J.Pharm.Sci., 68(7), 850-852, 1979.
18. Das, S. and Jarowski, C.I., "Effect of Granulating Method on particle Size Distribution of granules and Disintegrated Tablets I ", Drug.Delv.Ind.Pharm., 5(51), 479-488, 1979.
19. Pilpel, N., "The Flow properties of Magnesia", J. Pharm.Pharmacol., 16, 705-716, 1964.
20. Jordan, R.P. and Rhodes, C.T., "Recording Powder Flow Meters and Their Used in Pharmaceutical Technology", Drug.Devel.Ind.Pharm., 5(2), 151-167,
21. Harwood, C.F. and Pilpel, N., "Granulation of Griseofulvin", J.Pharm.Sci., 57, 478-481, 1968.
22. Gold, G., Duvall, R.N., Palermo, B.T. and Slater, J.G., "Powder Flow Studies III Factors affecting The Flow of Lactose Granules", J.Pharm.Sci., 57(9), 667-671, 1968.
23. Summer, E.D., Thompson, H.O., Poole, W.K. and Grizzle, J.E., "Particle Size Distribution and Hopper Flow Rate", J.Pharm.Sci., 55(2), 1441-

1446.

24. Pilpel, N., "Cohesive Pharmaceutical Powders, "Advance in Pharmaceutical Sciences, vol 3 (H.S. Bean, A.H. Beckett and J.E. Carless, eds.), Academic Press, New York, 173-219, 1971.
25. Alan, A.S. and Parrott, E.L., "Effect of Dissolution media on Disintegration and dissolution of Hydrochlorothiazide Tablets", J.Pharm.Sci., 60(5), 795-797, 1971.
26. Ridgway, K. and Williams, I.E., "The Effect of Particle Shape and Size Distribution on Granulation Bulk Density and Tablet Weight Variation", J.Pharm. Pharmacol., 29, 57, 1977.
27. Ho, T. and Hersey, J.A., "Compatibility of Granule Prepared by a Novel Method of Granulation and Their Dissolution", J.Pharm.Pharmacol., 32, 160-166, 1980.
28. Kassem, A.A., Sahr, A.M. and Mesiha, M.S., "Effect of Granule Size on Physical Standard of Tablets", Mfg.Chem.and Aerosol Nenes, 43, 24-27, 1972.
29. Smith, F.D. and Groseh,D., US Patent 2, 041:869, 1936.
30. Albrecht, R., US Patent 2, 645-936, 1953.
31. Michel, F., US Patent 2, 975-936, 1953.
32. Brook, D.B. and Marshall, K., "Crushing Strength of Compressed Tablets I Comparison of Testers", J.Pharm.Sci., 57(3), 481-484, 1968.
33. Goodhart, F.W., Droper, J.R., Doucz, D. and Ninger,

- F.C., "Evaluation of Tablet Breaking Strength Testers," *J.Pharm.Sci.*, 62(2), 297-304, 1973.
34. Shah, A.C. and Mlodozenice, A.B., "Mechanism of Surface Lubrication Influence of Duration of Lubricant-Excepiant Mixing on Processing Characteristic of Powder and Preoperties of Compressed Tablets", *J.Pharm.Sci.*, 66(10), 1377-1382, 1977.
35. Chowhan, Z.T., "Moisture, Hardness, Disintegration and Dissolution Interrelationship in Compressed Tablets Prepared by The Wet Granulation Precess", *Drug.Delv.Ind.Pharm.*, 5(1), 41-62, 1979.
36. Lerk, C.F., Lagas, M., Fell, J. and Nauta, P., "Effect of Hydrophilization of Hydrophobic Drugs and Releasee Ratee from Capsules", *J.Pharm.Sci.*, 67(7), 935-939, 1978.
37. Finhalt, P., "Influence of Formulation of Dissolution Rates in Dissolution Technology", Leeson, L.J, and Carterson, J.T., eds., *Acad of Pharm.Asso.*, 106, 1974.
38. Ginsel, W.C, and Kanig, J.L., "The Theory & Practice of Industrial Pharmacy, 2ed., Lea and Febiger, Philadelphia, 321-359, 1976.
39. King, R.E., "Tablets, Capsules and Pills", *Remington Pharmaceutical Science*, 1576-1607, 1975.
40. Prescott, E.F., Steel, R.F. and Ferrier, W.R., "Thee Effect of Particlee Sizee of Thee Absorption

- of Phenacetin in Man: A Correlation between Plasma Concentration on Phenacetin and Effect of the Central Nervous System", *Clin.Pharmacol.Ther.*, 11(4), 496-504, 1970.
41. Sudeb, D. and Jarowski, C.I., "Effect of Granulation Method of Particles Size Distribution Granule and Disintegrated Tablet I", *Drug.Delv.Ind. Pharm.*, 5(5), 479-488, 1979.
42. Gibaldi, M., "Biopharmaceutics", *The Theory & Practicce of Industrial Pharmacy*, L., Lachan, H.A., Lieberman and J.L., Kanig eds, 78-140, 1976.
43. Hoener, B. and Benet, L.Z., "Factor Influencing Drug Absorption and Drug Availability", *Modern Pharmaceutic*, G.S., Barker and C.T., Rhodes eds, 143-182, 1979.
44. Chalmers, A.A. and Elworthy, P.H., "Oxytetracycline Tablet Formulations Effect of Variation in Binder Concentration and Volume of Granule and Tablet Properties", *J.Pharm.Pharmacol.*, 28, 228-233, 1976.
45. Levy, G., "Comparison of Dissolution and Absorption Rate of Different Commercial Aspirin Tablets", *J.Pharm.Sci.*, 50(5), 388-392, 1961.
46. Khan, K.A., "Application of Techniques for Improving Efficacy of Solid Dosagee Forms", *Drug.Delv. Ind.Pharm.*, 7(4), 421-438, 1981.
47. Marlow, E. and Shangraw, R.F., "Dissolution of Sodium

- Salicylate from Tablet Matrice Prepared by Wet Granulation and Direct Compression", J.Pharm.Sci., 56(4), 498-504, 1967.
48. MacDonald, A., Michaelis, A.F. and Senkowski, B.Z., "Diazepam", Analytical Profile, 79-99, 1972.
49. Yliruusi, J.K., Sothenon, A.G., Laine, R.H., Rajasilta, R.A. and Kristaffersson, E.R., "Sorptions Loss of Diazepam and Nitroglycerline from Solution to Three Type of Containers", Am.J.Hosp.Pharm., 39, 1018-1021, 1982.
50. Metha, A. Adams, K. Zoglio, M.A. and Carstensen, J.T., "Influence of Granulation Liquid Flow Rate on Particle Size Distribution in Spray Granulated Products", J.Pharm.Sci., 6(10), 1462-1464, 1977.





ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Table 40 Size-weight distribution of diazepam granules prepared by manual method using sieve number 12.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	10.19	10.19
149-177	2.43	12.62
177-250	3.45	16.07
250-420	7.18	23.25
420-840	18.09	41.34
840-1680	58.66	100.00

Table 41 Size-weight distribution of diazepam granules prepared by manual method using sieve number 16.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	12.03	12.03
149-177	3.15	15.18
177-250	4.26	19.44
250-420	8.78	28.22
420-840	22.53	50.76
840-1680	49.25	100.00

Table 42 Size-weight distribution of diazepam granules prepared by manual method using sieve number 20.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	16.09	16.09
149-177	3.73	19.82
177-250	6.12	25.94
250-420	11.61	37.55
420-840	28.55	66.10
840-1680	33.90	100.00

Table 43 Size-weight distribution of diazepam granules prepared by manual method using sieve number 25.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	17.10	17.10
149-177	3.94	21.04
177-250	6.54	27.58
250-420	13.20	40.78
420-840	56.41	97.19
840-1680	2.81	100.00

Table 44 Size-weight distribution of diazepam granules prepared by manual method using sieve number 30.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	20.59	20.59
149-177	4.53	25.12
177-250	7.84	32.96
250-420	16.51	49.47
420-840	50.40	99.87
840-1680	0.15	100.00

Table 45 Size-weight distribution of diazepam granules prepared by oscillating method using sieve number 12.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	4.27	4.27
149-177	2.48	6.75
177-250	6.64	13.39
250-420	18.96	32.35
420-840	35.54	67.89
840-1680	32.10	100.00

Table 46 Size-weight distribution of diazepam granules prepared by oscillating method using sieve number 16.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	5.97	5.97
149-177	3.01	8.98
177-250	6.91	15.89
250-420	17.32	33.21
420-840	35.93	69.14
840-1680	30.89	100.00

Table 47 Size-weight distribution of diazepam granules prepared by oscillating method using sieve number 20.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	6.93	6.93
149-177	3.36	10.29
177-250	7.32	17.61
250-420	19.63	37.24
420-840	46.29	83.53
840-1680	16.49	100.00

Table 48 Size-weight distribution of diazepam granules prepared by oscillating method using sieve number 25.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	8.59	8.59
149-177	4.94	13.53
177-250	11.60	25.13
250-420	29.40	54.53
420-840	44.19	98.72
840-1680	1.28	100.00

Table 49 Size-weight distribution of diazepam granules prepared by oscillating method using sieve number 30.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	17.08	17.08
149-177	5.90	22.98
177-250	12.12	35.10
250-420	24.60	59.70
420-840	40.19	99.89
840-1680	0.11	100.00

Table 50 Size-weight distribution of diazepam granules prepared by air suspension method using 15 mg/tab of PVP as granulating agent.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	12.21	12.21
149-177	14.65	26.86
177-250	27.37	54.23
250-420	29.69	83.92
420-840	15.99	99.91
840-1680	0.08	100.00

Table 51 Size-weight distribution of diazepam granules prepared by air suspension method using 12 mg/tab of PVP as granulating agent.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	28.55	28.55
149-177	16.52	45.07
177-250	19.43	64.50
250-420	21.20	85.70
420-840	14.22	99.92
840-1680	0.08	100.00

Table 52 Size-weight distribution of diazepam granules prepared by air suspension method using 9 mg/tab of PVP as granulating agent.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	72.81	72.81
149-177	11.22	84.03
177-250	9.30	93.33
250-420	5.45	98.78
420-840	1.13	99.91
840-1680	0.08	100.00

Table 53 Size-weight distribution of diazepam granules prepared by air suspension method using 6 mg/tab of PVP as granulating agent.

Size (um)	% Frequency Distribution by Weight	Cumulative % by Weight Less Than Stated Size
0-149	91.50	91.50
149-177	4.59	96.09
177-250	2.71	98.80
250-420	0.86	99.86
420-840	0.31	99.97
840-1680	0.03	100.00

**VITA**

Mr. Chaiyot Titiratsanon was born on March 25, 1958. He got his degree in Bachelor of Pharmacy in 1985 from Faculty of Pharmacy, San Carlos University, Philippines.



ศูนย์วิทยุทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย