BAB 5
SIMPULAN

5.1. Simpulan

Berdasarkan data penelitian yang telah diinterpretasikan, dapat ditarik kesimpulan, teknik likuisolid untuk membuat tablet lepas lambat Klorfeniramin maleat dengan menggunakan polimer hidrofilik *xanthan gum* dan PEG 400 sebagai pelarut *non volatile* dapat menurunkan laju disolusi tablet lepas lambat Klorfeniramin maleat. Jumlah PEG 400, konsentrasi *xanthan gum* serta interaksi keduanya berpengaruh signifikan terhadap kekerasan tablet, kerapuhan tablet dan nilai konstanta laju disolusi tetapi tidak berpengaruh signifikan terhadap *Hausner Ratio* dan *Carr's Index*. Pelepasan tablet likuisolid Klorfeniramin maleat untuk semua formula mengikuti persamaan Orde Nol. Untuk mekanisme difusi mengikuti *non Fickian* (*anomalous diffusion)* yang merupakan hasil dari difusi dan erosi polimer dengan laju keduanya yang sebanding. Formula optimum tablet Klorfeniramin maleat dapat diperoleh dengan menggunakan jumlah pelarut *non volatile* PEG 400 sejumlah 28 mg dan konsentrasi polimer hidrofilik *xanthan gum* 35 % dari bobot tablet (500 mg) dengan hasil teoritis *Hausner Ratio* sebesar 1,2467; *Carr's Index* sebesar 20,1333 %; kekerasan tablet sebesar 10,05 Kp; kerapuhan tablet sebesar 0,1233 %; dan nilai konstanta laju disolusi sebesar 0,0140 mg/menit.

5.2. Alur Penelitian Selanjutnya

Dapat dilakukan penelitian lebih lanjut mengenai tablet lepas lambat likuisolid dengan mencari dan membuktikan formula optimum terpilih, kemudian dibandingkan dengan hasil yang secara teoritis.

DAFTAR PUSTAKA

Agoes, G., 2008, **Seri Farmasi Industri 3: Sistem Penghantaran Obat Pelepasan Terkendali**, Penerbit ITB, 32-33.

Anonim, 2013, http://en.wikipedia.org/wiki/Chlorphenamine.

Anonim, 2013, http://en.wikipedia.org/wiki/Xanthan_gum.

Anonim, 2012, http://en.wikipedia.org/wiki/PEG_400.

Anonim, 2011, http://wellspringchem.com/html_products/Microcrystaline-Cellulose-PH102-126.html.

Anonim, 2009, **Petunjuk Operasional Penerapan Cara Pembuatan Obat Yang Baik 2006**, Badan Pengawasan Obat dan Makanan RI, Jakarta, 585.

Anonim, 2007, **US Pharmacopeia XXX**, US Pharmacopeial Convention Inc., Rockville.

Anonim, 1995, **Farmakope Indonesia**, ed. IV, Departemen Kesehatan RI, Jakarta, 4-6, 210-211, 611-613, 999-1000, 1083-1085.

Anonim, 1997, **AHFS**, Drug Information AMERICAN Society of Health System Pharmacist, Inc., Bethesda, 13-15.

Anonim, 1979, **Farmakope Indonesia**, ed. III, Departemen Kesehatan RI, Jakarta, 6-8.

Association of Official Analytical Chemist (AOAC), 1975, **Infra Red and Ultraviolet Spectra of Some Compounds Pharmaceutical Interest**, Washington, D. C., 246.

Banakar, U.V., 1992, **Pharmaceutical Disolution Testing**, Marcel Dekker Inc., New York, 19-25.

Banker, G.S. and N.R. Anderson, 1986, Tablet, in: **The Theory and Practice of Industrial Pharmacy: Tablet**, L. Lachman, H.A. Lieberman, and J.L. Kanig (Eds.), 3rd ed., Lea and Febiger, Philadelphia, 259, 299, 316 – 329.

Costa, p. and J. M. Sousa Lobo, 2000, Modelling and Comparison of Dissolution Profiles, **Journal of Pharmaceutical Science**, European, 123-133.

Davies, P., 2001, Oral Solid Dosage Forms, in: **Pharmaceutical Preformulation and Formulation: A Practical Guide from Candidate Drug Selection to Commercial Dosage Form**, M. Gibson (Ed.), vol. 199, 2nd ed., Informa Healthcare USA, Inc., New York, 373.

Forner, D.E., N.R. Anderson, G.S. Banker, T.W. Rosanske, and R.E. Gordon, 1990, Granulation and Tablet Characteristic, In: **Pharmaceutical Dosage Form**, L. Lachman, H.A. Lieberman, and J.B. Schwartz (Eds.), vol. 2, 2nd ed., Marcel Dekker Inc., New York, 248-338.

Gonjari, I. D., A. B. Karmarkar, and A. H. Hosmani, 2009, Evaluation of in vitro Dissolution Profile Comparison Methods of Sustained Release Tramadol Hydrochloride Liquisolid Compact Formulation With Marketed Sustained Release Tablets, **Digest Journal of Nanomaterials and Biostructures,** vol 4, no 4, 651-661.

Green, J. M., 1996, **A Practical Guide to Analytical Method Validation**, Analytical Chemistry, 68, 305-309

Gubbi, S. and R. Jarag, 2009, Liquisolid Technique for Enhancement of Dissolution Properties of Bromhexine Hydrochloride, **J. Pharm**, 2(2), 382 – 386.

Gunawan, S. G., Setiabudy, R., Nafrialdi, dan Elysabeth, 2009, **Farmakologi dan Terapi**, ed V, Balai Penerbit FKUI, Jakarta, 273-287.

Hadisoewignyo, L., 2012, Likuisolid: Teknik Pembuatan Tablet untuk Bahan Obat Tidak Larut Air, **Medicinus**, 25(2), 32-38.

Hadisoewignyo, L. dan A. Fudholi, 2007, Studi Pelepasan *in vitro* Ibuprofen dari Matriks Xanthan Gum yang Dikombinasikan dengan Suatu *Crosslinking* Agent, **Majalah Farmasi Indonesia**, 18(3), 133-240.

Hentzschel, C. M., 2011, Optimization of the Liquisolid Technology – Identification of Highly Effective Tableting Excipients for Liquisolid adsorption, **Dissertation, Universitat Hamburg**, 2-5, 18-20.

Hartono, 2004, **Statistik untuk Penelitian**, Lembaga Studi Filsafat, Kemasyarakatan, Kependidikan, dan Perempuan ($LSFK_2P$) bekerja sama dengan pustaka pelajar, Yogyakarta, 236.

Javadzadeh, Y., H. Shariati, E. Movahhed-Danesh, and A. Nokhodichi, 2009, Effect of some Commercial Grades of Microcrystalline Cellulose on Flowability, Compressibility, and Dissolution Profile of Piroxicam Liquisolid Compacts, Drug Development and Industrial Pharmacy, 35, 243-251.

Javadzadeh, Y., B. J. Navimipour, and A. Nokhodchi, 2007, Liquidsolid Technique for Dissolution Rate Enhancement of a High Dose Water Insoluble Drug (Carbamazepine), **International Journal of Pharmaceutical**, 341, 26-34.

Kang, K. S., and D. J. Pettit, 1993, Xanthan, Gellan, Wellan, and Rhamsan. In: Whistler, R. L., BeMiller J. N., ed. **Industrial Gum**, Academic Press, New York, 342-398.

Kar, R., Mohapatra, S., Bhanja, S., Das, D., and Barik, B., 2010, Formulation and *In Vitro* Characterization of Xanthan Gum-Based Sustained Release Matrix Tablet of Isosorbide-5-Mononitrate, **Iranian Journal of Pharmaceutical Research**, 9(1), 13-19.

Khan, K.A., 1975, The Concept of Dissolution Efficiency, **J. Pharm**, 27(1), 48-49.

Kibbe, A. H., 2000, **Handbook of Pharmaceutical Excipients**, 3rd ed. The Pharmaceutical Press, London, 103-106, 143-145, 305-307, 416-419, 501-504.

Maier, H., M. Anderson, C. Karl, and K. Majauson, 1993, Guar, locust bean, tara, and fenugreek gums In: **Industrial Gums : Polysaccharides and Their Derivaties**, R. L. Whistler and J. N. Bemiller (Eds), 3rd ed., Academic Press, Inc., San Diego, 145-175.

Martin, A., J. Swarbrick, and A. Cammarata, 1983, **Physical Pharmacy**, 3rd ed., Lea & Febiger, Philadelpia, 845-850.

Mollet, H. and Grubenmann, A., 2001, **Formulation Technology: Emulsions, Suspensions, Solid Forms**, Wiley-VCH, Jerman, 364-365.

Ohwoavworhua, F. O., T. A. Adelakun, and A. O. Okhamafe, 2009, Processing Pharmaceutical Grade Microcrystalline Cellulose from Groundnut Husk: Extraction Methods and Characterization, **International Journal of Green Pharmacy**, 3(2), 97-104.

Parrott, E.L., 1971, **Pharmaceutical Technology Fundamental Pharmaceutics**, 3rd ed., Burgess Publishing Company, Minneapolis, 17-19, 82, 160-162.

Reynolds, J. E. F., 1982, **Martindale: The Extra Pharmacopoeia**, 28th ed., The Pharmaceutical Press, London, 1299.

Rosen, M. J., 1978, *Surfaktan and Interfacial Phenomena*, 83-85, 100-119, 125-130, John Willey and Rowe, R. C., P. J. Sheskey, and M. E. Quinn, 2009, **Handbook of Pharmaceuticals Excipient**, 6th ed., The Pharmaceutical Press, London, 283, 581.

Rowe, R. C., P. J. Sheskey, and M. E. Quinn, 2009, **Handbook of Pharmaceuticals Excipient**, 6th ed., The Pharmaceutical Press, London, 283, 581, 519.

Shargel, L. and A. B. C. Yu, 1999, **Applied Biopharmaceutics and Pharmacokinetics**, 4th ed. McGraw – Hill. New York, 8, 132, 169-200.

Shervington, L.A. and A. Shervington, 1998, Guaifenesin, In: **Analytical Profiles of Drug Substances and Exipients**, H.G. Brittain (Ed.), vol. 25, Academic Press, London, 152.

Siregar, C. J. P., 2010, **Teknologi Farmasi Sediaan Tablet: Dasar-Dasar Praktis**, EGC, Jakarta, vii, 1-12, 34-35, 53-121, 137-191, 235-265, 423-500.

Siregar, C. J. P.,1992, **Proses Validasi Manufaktur Sediaan Tablet**, Institut Teknologi Bandung, Bandung, 29-31.

Spireas, S., 2002, Liquisolid System and Methods of Preparation Same, **Pharmaceutical Research**, vol 9, 1-6.

Voigt, R., 1995, **Buku Pelajaran Teknologi Farmasi**, Terjemahan S. Noerono dan M. S. Reksohardiprojo, Gadjah Mada University Press, Yogyakarta, 163-210.

Walpole, R. E., 1995, **Pengantar Statistika Edisi 3**, PT Gramedia Pustaka Utama, Jakarta.

Wells, J.T., 1988, **Pharmaceutical Formulation: The Physicochemical Properties of Drug Substance**, Ellis Howard, Ltd., Chester, 209-211.

Wagner, J.G., 1971, **Biopharmaceutics and Relevant Pharmacokinetics**, 1st ed., Drug Intelligence Publications, Illinois, 64-11.

Yadav, V. B. and A. V. Yadav, 2009, Improvement of Solubility and Dissolution of Indomethacin by Liquisolid and Compaction Granulation Technique, **Journal of Pharmaceutical Sciences and Research**, I(2), 44-51.

LAMPIRAN A

HASIL UJI MUTU FISIK MASSA TABLET

Uji Mutu Fisik	Replikasi	Formula Tablet Likuisolid Klorfeniramin Maleat				Persyaratan
		A	B	C	D	
Hausner Ratio	I	1,25	1,25	1,25	1,24	≤ 1,25 (Wells, 1988)
	II	1,25	1,25	1,25	1,25	
	III	1,24	1,25	1,25	1,25	
	Rata-Rata	1,25	1,25	1,25	1,25	
	SD	0,01	0,00	0,00	0,01	
Carr's Index (%)	I	20,12	20,10	20,20	20,14	18 – 21% = cukup baik (Wells, 1988)
	II	20,09	20,00	20,05	20,11	
	III	20,19	20,15	20,13	20,15	
	Rata-Rata	20,13	20,08	20,13	20,13	
	SD	0,05	0,08	0,08	0,02	

LAMPIRAN B

HASIL UJI KESERAGAMAN BOBOT TABLET LIKUISOLID KLORFENIRAMIN MALEAT

Hasil Uji Keseragaman Bobot Tablet Formulasi A

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	500	100,03	500	98,11	500	98,10
2	500	100,03	500	98,11	500	98,10
3	490	98,03	500	98,11	500	98,10
4	490	98,03	500	98,11	500	98,10
5	500	100,03	500	98,11	500	98,10
6	500	100,03	490	96,15	500	98,10
7	510	102,03	510	100,07	490	96,14
8	510	102,03	500	98,11	490	96,14
9	490	98,03	510	100,07	510	100,06
10	500	100,03	490	96,15	490	96,14
11	500	100,03	510	100,07	510	100,06
12	500	100,03	510	100,07	510	100,06
13	500	100,03	490	96,15	490	96,14
14	510	102,03	510	100,07	510	100,06
15	500	100,03	500	98,11	500	98,10
16	500	100,03	490	96,15	490	96,14
17	490	98,03	500	98,11	500	98,10
18	500	100,03	490	96,15	490	96,14
19	510	102,03	500	98,11	500	98,10
20	500	100,03	510	100,07	510	100,06
Rata-Rata	500	100,03	500,5	98,22	499,5	97,99
Kadar Rata-Rata (%)	100,03		98,22		97,99	
SD	1,30		1,49		1,49	
KV (%)	1,30		1,52		1,52	

Hasil Uji Keseragaman Bobot Tablet Formulasi B

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	**Y (%)**	**Bobot Tablet (mg)**	**Y (%)**	**Bobot Tablet (mg)**	**Y (%)**
1	500	97,99	490	98,11	500	98,11
2	500	97,99	500	100,11	500	98,11
3	490	96,03	500	100,11	500	98,11
4	510	99,95	490	98,11	510	100,07
5	510	99,95	510	102,11	490	96,15
6	500	97,99	490	98,11	500	98,11
7	500	97,99	500	100,11	510	100,07
8	500	97,99	510	102,11	500	98,11
9	490	96,03	500	100,11	500	98,11
10	500	97,99	500	100,11	490	96,15
11	500	97,99	510	102,11	510	100,07
12	510	99,95	500	100,11	510	100,07
13	500	97,99	500	100,11	500	98,11
14	500	97,99	500	100,11	500	98,11
15	500	97,99	490	98,11	500	98,11
16	510	99,95	510	102,11	490	96,15
17	500	97,99	500	100,11	500	98,11
18	490	96,03	500	100,11	490	96,15
19	500	97,99	500	100,11	500	98,11
20	490	96,03	500	100,11	510	100,07
Rata-Rata	500	97,99	500	100,22	500,5	98,22
Kadar Rata-Rata (%)	97,99		100,22		98,22	
SD	1,27		1,30		1,35	
KV (%)	1,30		1,30		1,37	

Hasil Uji Keseragaman Bobot Tablet Formulasi C

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	**Y (%)**	**Bobot Tablet (mg)**	**Y (%)**	**Bobot Tablet (mg)**	**Y (%)**
1	500	97,22	510	100,27	480	94,37
2	500	97,22	510	100,27	500	98,31
3	490	95,27	500	98,31	490	96,34
4	520	101,11	510	100,27	500	98,31
5	510	99,16	500	98,31	500	98,31
6	500	97,22	500	98,31	490	96,34
7	500	97,22	510	100,27	500	98,31
8	490	95,27	510	100,27	510	100,27
9	520	101,11	510	100,27	500	98,31
10	500	97,22	500	98,31	490	96,34
11	500	97,22	500	98,31	500	98,31
12	500	97,22	510	100,27	510	100,27
13	510	99,16	510	100,27	500	98,31
14	490	95,27	510	100,27	500	98,31
15	500	97,22	500	98,31	510	100,27
16	500	97,22	490	96,34	500	98,31
17	500	97,22	500	98,31	500	98,31
18	500	97,22	490	96,34	490	96,34
19	500	97,22	490	96,34	500	98,31
20	500	97,22	490	96,34	510	100,27
Rata-Rata	501,5	97,51	502,5	98,72	499	98,31
Kadar Rata-Rata (%)	97,51		98,72		98,31	
SD	1,58		1,55		1,55	
KV (%)	1,62		1,57		1,58	

Hasil Uji Keseragaman Bobot Tablet Formulasi D

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	**Y (%)**	**Bobot Tablet (mg)**	**Y (%)**	**Bobot Tablet (mg)**	**Y (%)**
1	500	98,44	490	95,33	500	98,11
2	500	98,44	490	95,33	500	98,11
3	500	98,44	510	99,23	500	98,11
4	490	96,47	500	97,28	490	96,15
5	490	96,47	500	97,28	500	98,11
6	500	98,44	490	95,33	490	96,15
7	500	98,44	500	97,28	500	98,11
8	490	96,47	510	99,23	510	100,07
9	500	98,44	510	99,23	510	100,07
10	510	100,41	510	99,23	510	100,07
11	500	98,44	510	99,23	500	98,11
12	490	96,47	500	97,28	490	96,15
13	500	98,44	490	95,33	500	98,11
14	490	96,47	500	97,28	500	98,11
15	510	100,41	490	95,33	500	98,11
16	510	100,41	510	99,23	490	96,15
17	500	98,44	500	97,28	500	98,11
18	500	98,44	500	97,28	490	96,15
19	500	98,44	500	97,28	510	100,07
20	500	98,44	490	95,33	510	100,07
Rata-Rata	499	98,24	500	97,38	500	98,11
Kadar Rata-Rata (%)	98,24		97,38		98,11	
SD	1,26		1,55		1,42	
KV (%)	1,28		1,59		1,45	

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN C

HASIL UJI KESERAGAMAN KANDUNGAN TABLET LIKUISOLID KLORFENIRAMIN MALEAT

Hasil Uji Keseragaman Kandungan Formula A Replikasi I

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
A	500,3	0,171	11,76	12,01	97,94
	500,8	0,174	11,96	12,02	99,51
	501,4	0,17	11,69	12,03	97,17
	501,8	0,172	11,83	12,04	98,20
	501,4	0,178	12,23	12,03	101,60
	498,4	0,175	12,03	11,96	100,54
	502,6	0,174	11,96	12,06	99,15
	502,5	0,173	11,89	12,06	98,62
	501,8	0,176	12,09	12,04	100,42
	501,1	0,175	12,03	12,03	100,00
	Rata-Rata				99,32
	SD				1,36
	KV				1,37

Hasil Uji Keseragaman Kandungan Formula A Replikasi II

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
A	500,5	0,175	12,03	12,01	100,12
	499,7	0,173	11,89	11,99	99,17
	493,8	0,172	11,83	11,85	99,79
	499,8	0,176	12,09	12,00	100,82
	503,3	0,177	12,16	12,08	100,67
	511,2	0,179	12,29	12,27	100,20
	499,6	0,17	11,69	11,99	97,52
	500,1	0,176	12,09	12,00	100,76
	498,2	0,17	11,69	11,96	97,80
	508,3	0,176	12,09	12,20	99,13
	Rata-Rata				99,60
	SD				1,18
	KV				1,19

Hasil Uji Keseragaman Kandungan Formula A Replikasi III

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
A	500,3	0,174	11,96	12,01	99,61
	500,8	0,175	12,03	12,02	100,06
	510,4	0,178	12,23	12,25	99,81
	510,8	0,172	11,83	12,26	96,47
	510,4	0,173	11,89	12,25	97,09
	499,4	0,176	12,09	11,99	100,90
	510,3	0,173	11,89	12,25	97,11
	503,4	0,173	11,89	12,08	98,44
	498,1	0,175	12,03	11,95	100,60
	500,2	0,176	12,09	12,00	100,74
	Rata-Rata				99,08
	SD				1,67
	KV				1,69

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

Hasil Uji Keseragaman Kandungan Formula B Replikasi I

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
B	499,5	0,17	11,69	11,99	97,54
	500,4	0,173	11,89	12,01	99,03
	502,8	0,173	11,89	12,07	98,56
	500,1	0,178	12,23	12,00	101,87
	509,4	0,177	12,16	12,23	99,46
	498,3	0,174	11,96	11,96	100,01
	498,7	0,177	12,16	11,97	101,60
	501,8	0,174	11,96	12,04	99,31
	499,3	0,176	12,09	11,98	100,92
	502,3	0,172	11,83	12,06	98,10
	Rata-Rata				99,64
	SD				1,45
	KV				1,46

Hasil Uji Keseragaman Kandungan Formula B Replikasi II

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
B	497,3	0,171	11,76	11,94	98,53
	508,8	0,176	12,09	12,21	99,03
	498,3	0,176	12,09	11,96	101,12
	505,3	0,174	11,96	12,13	98,62
	507,9	0,175	12,03	12,19	98,66
	511,3	0,178	12,23	12,27	99,64
	508,6	0,172	11,83	12,21	96,89
	504	0,175	12,03	12,10	99,43
	504,8	0,18	12,36	12,12	102,02
	499,4	0,172	11,83	11,99	98,67
	Rata-Rata				99,26
	SD				1,44
	KV				1,45

Hasil Uji Keseragaman Kandungan Formula B Replikasi III

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
B	499,5	0,173	11,89	11,99	99,21
	500,4	0,173	11,89	12,01	99,03
	512,8	0,176	12,09	12,31	98,26
	500,1	0,175	12,03	12,00	100,20
	509,4	0,169	11,63	12,23	95,10
	499,8	0,17	11,69	12,00	97,48
	503,3	0,172	11,83	12,08	97,91
	511,2	0,173	11,89	12,27	96,94
	499,6	0,174	11,96	11,99	99,75
	500,1	0,17	11,69	12,00	97,42
	Rata-Rata				98,13
	SD				1,51
	KV				1,54

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

Hasil Uji Keseragaman Kandungan Formula C Replikasi I

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
C	498,8	0,178	12,23	11,97	102,13
	498,1	0,177	12,16	11,95	101,72
	499,6	0,177	12,16	11,99	101,41
	500,8	0,178	12,23	12,02	101,73
	504,2	0,176	12,09	12,10	99,94
	499,7	0,178	12,23	11,99	101,95
	501,1	0,173	11,89	12,03	98,89
	505,8	0,175	12,03	12,14	99,07
	499	0,176	12,09	11,98	100,98
	508,8	0,176	12,09	12,21	99,03
	Rata-Rata				100,69
	SD				1,31
	KV				1,31

Hasil Uji Keseragaman Kandungan Formula C Replikasi II

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
C	512,1	0,179	12,29	12,29	100,02
	511,2	0,177	12,16	12,27	99,11
	496,2	0,175	12,03	11,91	100,99
	500,8	0,173	11,89	12,02	98,95
	497,8	0,173	11,89	11,95	99,55
	509,6	0,182	12,49	12,23	102,15
	504,1	0,18	12,36	12,10	102,16
	500,5	0,169	11,63	12,01	96,79
	512,7	0,176	12,09	12,30	98,28
	510	0,177	12,16	12,24	99,35
	Rata-Rata				99,74
	SD				1,68
	KV				1,68

Hasil Uji Keseragaman Kandungan Formula C Replikasi III

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
C	499,6	0,175	12,03	11,99	100,30
	500,8	0,174	11,96	12,02	99,51
	504,2	0,173	11,89	12,10	98,29
	497,9	0,173	11,89	11,95	99,53
	501,1	0,177	12,16	12,03	101,11
	508,8	0,179	12,29	12,21	100,67
	488,3	0,174	11,96	11,72	102,05
	505,3	0,174	11,96	12,13	98,62
	509,7	0,179	12,29	12,23	100,49
	511,3	0,176	12,09	12,27	98,55
	Rata-Rata				99,91
	SD				1,23
	KV				1,23

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

Hasil Uji Keseragaman Kandungan Formula D Replikasi I

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
D	501,3	0,175	12,03	12,03	99,96
	500,8	0,174	11,96	12,02	99,51
	501,1	0,176	12,09	12,03	100,56
	499,7	0,174	11,96	11,99	99,73
	500,9	0,173	11,89	12,02	98,93
	498,9	0,178	12,23	11,97	102,11
	508,8	0,176	12,09	12,21	99,03
	497,2	0,177	12,16	11,93	101,90
	500,6	0,175	12,03	12,01	100,10
	501,2	0,178	12,23	12,03	101,64
	Rata-Rata				100,35
	SD				1,17
	KV				1,16

Hasil Uji Keseragaman Kandungan Formula D Replikasi II

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
D	499,4	0,172	11,83	11,99	98,67
	503,1	0,175	12,03	12,07	99,60
	503,4	0,175	12,03	12,08	99,55
	498,1	0,171	11,76	11,95	98,37
	500,2	0,173	11,89	12,00	99,07
	501,9	0,177	12,16	12,05	100,95
	502,5	0,171	11,76	12,06	97,51
	507,8	0,179	12,29	12,19	100,87
	502,1	0,179	12,29	12,05	102,02
	506,7	0,181	12,43	12,16	102,19
	Rata-Rata				99,88
	SD				1,57
	KV				1,57

Hasil Uji Keseragaman Kandungan Formula D Replikasi III

	Berat Tablet (mg)	Abs	Konsentrasi Sampel (mg)	Konsentrasi Teoritis (mg)	Kadar (%)
D	500,8	0,175	12,03	12,02	100,06
	479,8	0,175	12,03	11,52	104,44
	509,6	0,179	12,29	12,23	100,51
	514,3	0,178	12,23	12,34	99,06
	500,5	0,178	12,23	12,01	101,79
	501,1	0,178	12,23	12,03	101,67
	499,7	0,174	11,96	11,99	99,73
	509,5	0,175	12,03	12,23	98,35
	498	0,175	12,03	11,95	100,62
	508,8	0,179	12,29	12,21	100,67
	Rata-Rata				100,69
	SD				1,69
	KV				1,68

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN D

HASIL UJI KEKERASAN TABLET LIKUISOLID KLORFENIRAMIN MALEAT

Replikasi I

No	Kekerasan Tablet Likuisolid Ibuprofen (Kp)			
	A	**B**	**C**	**D**
1	13,6	7,7	15,7	10,1
2	13,2	7,5	16,2	10,3
3	13,5	7,4	16,1	10,3
4	13,6	8,1	15,8	9,8
5	13,7	7,5	16	9,9
6	13,5	7,6	15,6	10
7	13,8	7,8	16,2	10,1
8	12,9	7,9	15,8	10,2
9	13,6	7,8	15,7	10
10	13,3	8	15,9	10,1
Rata-rata	13,47	7,73	15,9	10,08
SD	0,27	0,23	0,22	0,16
KV	1,98	2,99	1,36	1,61

Replikasi II

No	Kekerasan Tablet Likuisolid Ibuprofen (Kp)			
	A	**B**	**C**	**D**
1	12,9	7,6	15,4	10,1
2	13,3	8,2	15,2	10,2
3	13,4	7,9	15,1	10,4
4	13,6	7,4	14,9	9,9
5	13,8	8	14,9	9,6
6	13,7	7,5	15,2	10
7	12,8	7,9	15,2	9,7
8	13,7	7,7	15,3	10,2
9	13,7	7,6	15,7	10
10	13,6	8	15,2	10,2
Rata-rata	13,45	7,78	15,21	10,03
SD	0,35	0,26	0,23	0,25
KV	2,61	3,31	1,53	2,44

Replikasi III

No	Kekerasan Tablet Likuisolid Ibuprofen (Kp)			
	A	**B**	**C**	**D**
1	12,9	7,9	16,4	9,7
2	13,2	7,6	15,7	9,7
3	13,2	8	16,1	9,8
4	13,4	7,8	15,8	10,1
5	13,3	8	16	10,4
6	13,5	7,7	16,2	9,8
7	13,2	7,9	16,2	10,4
8	13,4	8,2	15,8	10,2
9	12,7	7,6	15,7	9,9
10	13,3	8	16,2	10,4
Rata-rata	13,21	7,87	16,01	10,04
SD	0,24	0,19	0,25	0,30
KV	1,84	2,47	1,54	2,94

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN E

HASIL UJI KERAPUHAN TABLET LIKUISOLID KLORFENIRAMIN MALEAT

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata	SD	KV
A	I	9,88	9,88	0,05	0,06	0,01721	0,26605
	II	10,02	10,01	0,08			
	III	10,07	10,07	0,06			
B	I	9,46	9,46	0,02	0,04	0,01659	0,40175
	II	9,58	9,57	0,05			
	III	9,70	9,70	0,05			
C	I	9,56	9,56	0,01	0,04	0,02499	0,64778
	II	9,66	9,66	0,04			
	III	10,04	10,03	0,06			
D	I	10,37	10,36	0,13	0,12	0,01173	0,09651
	II	9,97	9,95	0,13			
	III	9,7167	9,7062	0,11			

Keterangan:

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN F

HASIL KLORFENIRAMIN MALEAT TERLARUT DALAM AKUADES SELAMA 24 JAM

Abs	Konsentrasi (µg/mL)	FP	Kons. teoritis (µg/mL)	Rata-rata ± SD	Kelarutan
0,075	5,13	4000	205,216	211,782 ± 0,18	1 : 5
0,080	5,48	4000	219,286		
0,077	5,27	4000	210,844		

HASIL KLORFENIRAMIN MALEAT TERLARUT DALAM PEG 400 SELAMA 24 JAM

Abs	Konsentrasi (µg/mL)	FP	Kons. teoritis (µg/mL)	Rata-rata ± SD	Kelarutan
0,273	19,06	6666,67	127,062	126,281 ± 0,11	1 : 8
0,270	18,85	6666,67	125,655		
0,271	18,92	6666,67	126,124		

LAMPIRAN G

HASIL UJI AKURASI DAN PRESISI UNTUK PENETAPAN KADAR TABLET LIKUISOLID KLORFENIRAMIN MALEAT FORMULA D

Rep.	Kons.	Timbang (mg)	Abs.	Kons. (µg/mL)	Teoritis (µg/mL)	Perolehan Kembali (%)	Rata-rata	SD	KV (%)
I	80%	500,70	0,138	9,56	9,61	99,51			
II	80%	500,00	0,139	9,63	9,61	100,16	99,74	0,36	0,36
III	80%	500,60	0,138	9,56	9,60	99,56			
I	100%	500,30	0,173	11,89	12,01	99,04			
II	100%	500,40	0,175	12,03	12,01	100,10	99,60	0,53	0,53
III	100%	500,30	0,174	11,96	12,00	99,65			
I	120%	500,30	0,210	14	14,41	99,65			
II	120%	500,50	0,213	14,56	14,42	100,99	100,27	0,67	0,67
III	120%	500,60	0,211	14,43	14,40	100,17			

Keterangan:

Rep = Replikasi

Kons = Konsentrasi Bahan Aktif

Timbang = Berat Penimbangan Bahan Tambahan + Bahan Aktif

Abs = Absorbansi

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN H

HASIL PENETAPAN KADAR TABLET LIKUISOLID KLORFENIRAMIN MALEAT

FORMULA A

Replikasi	W (mg)	Abs	C Sampel	C Teoritis	Kadar (%)	Rata2	SD	KV
1	500,3	0,175	12,03	12,01	100,16	100,17	0,53	0,52
2	500,4	0,176	12,09	12,01	100,70			
3	500,1	0,174	11,96	12,00	99,65			

FORMULA B

Replikasi	W (mg)	Abs	C Sampel	C Teoritis	Kadar (%)	Rata2	SD	KV
1	500	0,174	11,96	12,00	99,67	99,63	0,55	0,55
2	500,2	0,173	11,89	12,00	99,07			
3	500,3	0,175	12,03	12,01	100,16			

FORMULA C

Replikasi	W (mg)	Abs	C Sampel	C Teoritis	Kadar (%)	Rata2	SD	KV
1	500,2	0,175	12,03	12,00	100,18			
2	500,5	0,175	12,03	12,01	100,12	99,59	0,97	0,97
3	500,4	0,172	11,83	12,01	98,48			

FORMULA D

Replikasi	W (mg)	Abs	C Sampel	C Teoritis	Kadar (%)	Rata2	SD	KV
1	500,2	0,174	11,96	12,00	99,63			
2	500,2	0,175	12,03	12,00	100,18	99,61	0,59	0,59
3	500,5	0,173	11,89	12,01	99,01			

Keterangan:

W = Berat Penimbangan Serbuk

Abs = Absorbansi Terbaca

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN I

HASIL UJI AKURASI DAN PRESISI UNTUK UJI DISOLUSI TABLET LIKUISOLID KLORFENIRAMIN MALEAT FORMULA D

Rep	Kons.	Timbang (mg)	Abs.	Kons, (µg/mL)	Teoritis (µg/mL)	Perolehan Kembali (%)	Rata-rata	SD	KV (%)
I	20%	278,10	0,033	2,56	2,60	98,39			
II	20%	277,90	0,034	2,63	2,60	100,90	100,10	1,48	1,48
III	20%	277,70	0,034	2,63	2,60	101,01			
I	40%	277,80	0,076	5,43	5,40	100,42			
II	40%	277,80	0,075	5,36	5,41	99,14	100,01	0,76	0,76
III	40%	277,50	0,076	5,43	5,40	100,47			
I	60%	277,60	0,115	8,03	8,01	100,26			
II	60%	277,90	0,113	7,89	8,01	98,55	99,71	1,00	1,01
III	60%	278,00	0,115	8,03	8,00	100,31			
I	80%	277,60	0,157	10,83	10,81	100,18			
II	80%	277,40	0,158	10,89	10,81	100,74	99,97	0,89	0,89
III	80%	277,70	0,155	10,69	10,80	98,99			
I	100%	278,40	0,195	13,36	13,41	99,63			
II	100%	278,00	0,197	13,49	13,42	100,58	100,13	0,47	0,47
III	100%	277,50	0,196	13,43	13,40	100,18			

Keterangan:

Rep = Replikasi

Kons = Konsentrasi Bahan Aktif

Timbang = Berat Penimbangan Bahan Tambahan + Bahan Aktif

Abs = Absorbansi Terbaca

SD = Standart Deviasi

KV = Koefisien Variasi

LAMPIRAN J

HASIL UJI DISOLUSI TABLET LIKUISOLID KLORFENIRAMIN MALEAT

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula A Replikasi I

t	A	C Sampel	Wt	%obat terlepas
0	0	0	0	0,00
45	0,025	2,03	1,82	15,18
60	0,031	2,43	2,18	18,17
120	0,038	2,89	2,60	21,67
180	0,048	3,56	3,20	26,66
240	0,062	4,49	4,04	33,65
300	0,092	6,49	5,84	48,62
360	0,102	7,16	6,44	53,61
420	0,108	7,56	6,80	56,61
480	0,109	7,63	6,86	57,11
540	0,129	8,96	8,06	67,09
600	0,133	9,23	8,30	69,09
660	0,155	10,69	9,62	80,07
720	0,163	11,23	10,10	84,07

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula A Replikasi II

t	A	C Sampel	Wt	%obat terlepas
0	0	0	0	0,00
45	0,021	1,76	1,58	13,11
60	0,028	2,23	2,00	16,58
120	0,044	3,29	2,96	24,53
180	0,053	3,89	3,50	29,00
240	0,065	4,69	4,22	34,96
300	0,089	6,29	5,66	46,87
360	0,104	7,29	6,56	54,32
420	0,113	7,89	7,10	58,79
480	0,125	8,69	7,82	64,75
540	0,129	8,96	8,06	66,73
600	0,132	9,16	8,24	68,22
660	0,157	10,83	9,74	80,64
720	0,161	11,09	9,98	82,62

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula A Replikasi III

t	A	C Sampel	Wt	%obat terlepas
0	0	0	0	0,00
45	0,023	1,89	1,70	14,25
60	0,034	2,63	2,36	19,77
120	0,041	3,09	2,78	23,28
180	0,05	3,69	3,32	27,80
240	0,065	4,69	4,22	35,32
300	0,09	6,36	5,72	47,87
360	0,103	7,23	6,50	54,39
420	0,11	7,69	6,92	57,90
480	0,125	8,69	7,82	65,43
540	0,133	9,23	8,30	69,44
600	0,145	10,03	9,02	75,46
660	0,16	11,03	9,92	82,99
720	0,164	11,29	10,16	85,00

Keterangan:

t = Waktu Pengambilan Sampel

A = Absorbansi

C Sampel = Konsentrasi Sampel

Wt = Berat Klorfeniramin Maleat Terlarut

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula B Replikasi I

t	A	C Sampel	Wt	%obat terlepas
0	0	0,00	0,00	0,00
45	0,039	2,96	2,66	22,27
60	0,044	3,29	2,96	24,78
120	0,068	4,89	4,40	36,82
180	0,069	4,96	4,46	37,32
240	0,087	6,16	5,54	46,35
300	0,099	6,96	6,26	52,37
360	0,114	7,96	7,16	59,90
420	0,128	8,89	8,00	66,92
480	0,147	10,16	9,14	76,45
540	0,159	10,96	9,86	82,47
600	0,168	11,56	10,40	86,99
660	0,171	11,76	10,58	88,49
720	0,193	13,23	11,90	99,53

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula B Replikasi II

t	A	C Sampel	Wt	%obat terlepas
0	0	0,00	0,00	0,00
45	0,039	2,96	2,66	22,41
60	0,044	3,29	2,96	24,93
120	0,069	4,96	4,46	37,55
180	0,078	5,56	5,00	42,09
240	0,086	6,09	5,48	46,13
300	0,092	6,49	5,84	49,16
360	0,114	7,96	7,16	60,26
420	0,132	9,16	8,24	69,34
480	0,146	10,09	9,08	76,41
540	0,168	11,56	10,40	87,51
600	0,179	12,29	11,06	93,07
660	0,189	12,96	11,66	98,11
720	0,192	13,16	11,84	99,63

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula B Replikasi III

t	A	C Sampel	Wt	%obat terlepas
0	0	0	0	0,00
45	0,037	2,83	2,54	21,17
60	0,047	3,49	3,14	26,16
120	0,057	4,16	3,74	31,15
180	0,069	4,96	4,46	37,14
240	0,089	6,29	5,66	47,12
300	0,097	6,83	6,14	51,12
360	0,114	7,96	7,16	59,60
420	0,13	9,03	8,12	67,59
480	0,145	10,03	9,02	75,08
540	0,161	11,09	9,98	83,07
600	0,177	12,16	10,94	91,05
660	0,187	12,83	11,54	96,05
720	0,194	13,29	11,96	99,54

Keterangan:

t = Waktu Pengambilan Sampel

A = Absorbansi

C Sampel = Konsentrasi Sampel

Wt = Berat Klorfeniramin Maleat Terlarut

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula C Replikasi I

t	A	C Sampel	Wt	%obat terlepas
0	0	0,00	0,00	0,00
45	0,016	1,43	1,28	10,68
60	0,027	2,16	1,94	16,17
120	0,037	2,83	2,54	21,16
180	0,039	2,96	2,66	22,16
240	0,047	3,49	3,14	26,15
300	0,057	4,16	3,74	31,14
360	0,066	4,76	4,28	35,64
420	0,075	5,36	4,82	40,13
480	0,088	6,23	5,60	46,62
540	0,115	8,03	7,22	60,09
600	0,121	8,43	7,58	63,09
660	0,138	9,56	8,60	71,57
720	0,151	10,43	9,38	78,06

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula C Replikasi II

t	A	C Sampel	Wt	%obat terlepas
0	0	0,00	0,00	0,00
45	0,015	1,36	1,22	10,19
60	0,029	2,29	2,06	17,18
120	0,033	2,56	2,30	19,18
180	0,033	2,56	2,30	19,18
240	0,053	3,89	3,50	29,17
300	0,058	4,23	3,80	31,66
360	0,061	4,43	3,98	33,16
420	0,077	5,49	4,94	41,15
480	0,091	6,43	5,78	48,14
540	0,118	8,23	7,40	61,63
600	0,122	8,49	7,64	63,62
660	0,137	9,49	8,54	71,11
720	0,152	10,49	9,44	78,61

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula C Replikasi III

t	A	C Sampel	Wt	%obat terlepas
0	0	0	0	0,00
45	0,016	1,43	1,28	10,87
60	0,022	1,83	1,64	13,91
120	0,029	2,29	2,06	17,47
180	0,033	2,56	2,30	19,50
240	0,049	3,63	3,26	27,62
300	0,061	4,43	3,98	33,71
360	0,066	4,76	4,28	36,25
420	0,081	5,76	5,18	43,87
480	0,092	6,49	5,84	49,45
540	0,111	7,76	6,98	59,10
600	0,121	8,43	7,58	64,18
660	0,14	9,69	8,72	73,82
720	0,149	10,29	9,26	78,39

Keterangan:

t = Waktu Pengambilan Sampel

A = Absorbansi

C Sampel = Konsentrasi Sampel

Wt = Berat Klorfeniramin Maleat Terlarut

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula D Replikasi I

t	A	C Sampel	Wt	%obat terlepas
0	0	0,00	0,00	0,00
45	0,02	1,69	1,52	12,75
60	0,031	2,43	2,18	18,27
120	0,042	3,16	2,84	23,79
180	0,059	4,29	3,86	32,32
240	0,078	5,56	5,00	41,85
300	0,089	6,29	5,66	47,38
360	0,101	7,09	6,38	53,40
420	0,116	8,09	7,28	60,93
480	0,132	9,16	8,24	68,96
540	0,155	10,69	9,62	80,50
600	0,159	10,96	9,86	82,51
660	0,163	11,23	10,10	84,51
720	0,173	11,89	10,70	89,53

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula D Replikasi II

t	A	C Sampel	Wt	%obat terlepas
0	0	0,00	0,00	0,00
45	0,02	1,69	1,52	12,68
60	0,034	2,63	2,36	19,66
120	0,049	3,63	3,26	27,15
180	0,061	4,43	3,98	33,14
240	0,075	5,36	4,82	40,13
300	0,093	6,56	5,90	49,11
360	0,106	7,43	6,68	55,60
420	0,11	7,69	6,92	57,60
480	0,129	8,96	8,06	67,08
540	0,144	9,96	8,96	74,57
600	0,159	10,96	9,86	82,05
660	0,164	11,29	10,16	84,55
720	0,178	12,23	11,00	91,54

Hasil Uji Disolusi Tablet Likuisolid Klorfeniramin Maleat Formula D Replikasi III

t	A	C Sampel	Wt	%obat terlepas
0	0	0	0	0,00
45	0,015	1,36	1,22	10,30
60	0,03	2,36	2,12	17,88
120	0,04	3,03	2,72	22,93
180	0,057	4,16	3,74	31,51
240	0,078	5,56	5,00	42,12
300	0,09	6,36	5,72	48,18
360	0,101	7,09	6,38	53,73
420	0,115	8,03	7,22	60,80
480	0,13	9,03	8,12	68,38
540	0,148	10,23	9,20	77,47
600	0,161	11,09	9,98	84,03
660	0,169	11,63	10,46	88,07
720	0,178	12,23	11,00	92,62

Keterangan:

t = Waktu Pengambilan Sampel

A = Absorbansi

C Sampel = Konsentrasi Sampel

Wt = Berat Klorfeniramin Maleat Terlarut

LAMPIRAN K

CONTOH PERHITUNGAN

Contoh perhitungan Carr's Index dan *Hausner Ratio*:

Formula A :

Berat gelas = 125,2205 g (W_1)

Berat gelas + granul = 158,8323 g (W_2)

V_1 = 100 mL

V_2 = 80 mL

Bj nyata = $\frac{(W_2 - W_1)}{V_1} = \frac{(158,8323\text{-}125,2205)}{100} = 0,34$

Bj mampat $= \frac{(W_2 - W_1)}{V_2} = \frac{(158,8323\text{-}125,2205)}{80} = 0,42$

% kompresibilitas = $\left(1 - \frac{Bj.nyata}{Bj.mampat}\right) x100\% = 19,04\%$

Formula A:

Hausner Ratio = $\frac{\text{Bj mampat}}{\text{Bj nyata}} = 1,23$

Contoh perhitungan Akurasi & Presisi:

%	Bahan aktif + matrik (mg)	Vol. akhir (mL)	Pipet (mL)	Vol. akhir (mL)	Konsentrasi (ppm)
100	500,3	100	1,0	10	12,01

Absorbansi = 0,173 → y = 0,015x + 0,0054

Konsentrasi sebenarnya = 11,89 ppm

Konsentrasi teoritis = 12,01 ppm

% perolehan kembali = (konsentrasi sebenarnya/konsentrasi teoritis) x 100%

= (11,89 /12,01) x 100%

= 99,04%

Untuk menghitung % KV = $\frac{SD}{\overline{X}} x100\%$

$$= \frac{0,52}{99,60} x100\,\%$$

= 0,53 %

Contoh perhitungan % obat terlepas:

$$\% \text{ obat terlepas} = \frac{Wt}{\frac{PK}{100} \times dosis} \times 100\%$$

Formula A replikasi 1 pada t = 45 menit

$$\% \text{ obat terlepas} = \frac{1,82}{\frac{100,16}{100} \times 12} \times 100\% = 15,18\%$$

Contoh Perhitungan Jumlah Klorfeniramin Maleat terlarut dalam PEG 400:

Replikasi I:

Absorbansi	Konsentrasi (μg/mL)	FP	Konsentrasi teoritis (μg/mL)	Kelarutan
0,273	19,0594	6666,67	127.062	1:8

Absorbansi = 0,273 → y = 0,0142x + 0,0021

Konsentrasi = 19,06 μg/mL

CTM berlebih dalam PEG 400 25 mL → pipet 25μL ad, 50 mL → pipet 3 mL ad, 10 mL

Faktor pengenceran (FP) = (10/3) x (50/0,025) = 6666,67

Konsentrasi sesungguhnya = konsentrasi x FP

= 19,06 x 6666,67 = 127,062 μg/mL

Kelarutan = 1000000/127.062 μg/mL = 1 gram dalam 8 mL

Contoh Perhitungan konversi dari Nilai Sesungguhnya Menjadi Bentuk yang Berada dalam Rentang Angka Baku:

Misal: tingkat *xanthan gum* = 1,0 , tingkat rendah= 30, tingkat tinggi= 35

$$X' = \frac{X - \text{rata} - \text{rata 2 level}}{1/2 x perbedaan level} \rightarrow 1{,}0 = \frac{X - (30+35)/2}{1/2 x (35-30)} \rightarrow X = 35\%$$

Contoh Perhitungan Hasil teoritis:

Missal : respon *Hausner Ratio* pada formula A

$Y = 1{,}25 - 1{,}667.10^{-3} X_A X_B$

$Y = 1{,}25 - 1{,}667.10^{-3} X_A X_B$

$= 1{,}25 - 1{,}667.10^{-3} (-1)(-1) \rightarrow Y = 1{,}2483$

LAMPIRAN L

HASIL UJI F KURVA BAKU

REPLIKASI I

x (ppm)	y (abs)	x2	y2	xy
1,01	0,011	1,012	0,000	0,011
2,01	0,023	4,048	0,001	0,046
4,02	0,058	16,193	0,003	0,233
6,04	0,075	36,433	0,006	0,453
9,05	0,132	81,975	0,017	1,195
12,07	0,176	145,733	0,031	2,125
15,09	0,218	227,708	0,048	3,290
49,29	**0,693**	**513,102**	**0,106**	**7,353**

Persamaan regresi replikasi I → Y = 0,0149X - 0,0059

$r_{hitung} : r_{tabel}$ = 0,9984 : 0,754

REPLIKASI II

x (ppm)	y (abs)	x2	y2	xy
1,01	0,010	1,014	0,000	0,010
2,01	0,029	4,056	0,001	0,058
4,03	0,055	16,225	0,003	0,222
6,04	0,081	36,506	0,007	0,489
9,06	0,128	82,138	0,016	1,160
12,08	0,188	146,023	0,035	2,272
15,11	0,220	228,161	0,048	3,323
49,343	**0,711**	**514,123**	**0,111**	**7,534**

Persamaan regresi replikasi II → Y = 0,0152X - 0,0053

$r_{hitung} : r_{tabel}$ = 0,9977 : 0,754

REPLIKASI III

x (ppm)	y (abs)	x2	y2	xy
1,00	0,010	1,002	0,000	0,010
2,00	0,025	4,008	0,001	0,050
4,00	0,056	16,032	0,003	0,224
6,01	0,083	36,072	0,007	0,498
9,01	0,127	81,162	0,016	1,144
12,01	0,174	144,288	0,030	2,090
15,02	0,221	225,450	0,049	3,318
49,049	**0,696**	**508,015**	**0,106**	**7,335**

Persamaan regresi replikasi III → Y = 0,0150X - 0,0054

$r_{hitung} : r_{tabel}$ = 0,9998 : 0,754

	Σx2	Σxy	Σy2	n	Residual SS	Residual DF
baku 1	513,102	7,353	0,106	7	0,000195187	5
baku 2	514,123	7,534	0,111	7	0,0002401 6	5
baku 3	508,015	7,335	0,106	7	7,96607E-05	5
pooled regression				21	0,000515008	15
common regression	1535,2396	22,2226	0,3222		0,000543041	15

F hitung < F tabel $_{0,05\,(2,15)}$ = 0,2041 < 3,68.

Karena F hitung lebih kecil dari F tabel maka tidak ada perbedaan bermakna antar persamaan regresi.

LAMPIRAN M

SERTIFIKAT ANALISIS

KLORFENIRAMIN MALEAT

JAKARTA

SUPRIYA LIFESCIENCE LTD.
(Formerly known as **Supriya Chemicals**)

QCA-F-02
Rev. No. 01

CERTIFICATE OF ANALYSIS

Name	:	**Chlorpheniramine Maleate USP**			
Manufacture	:	**Supriya Lifescience Ltd.**	A.R.Number	:	SLL/QC/FP/11/0074
Batch No.	:	SLL/C/0111016	Drug License No.	:	KD-129
Batch Size	:	1000.0 kgs	Date of Sampling	:	29/01/2011
Date of Manufacturing	:	Jan-2011	Date of Release	:	30/01/2011
Date of Expiry	:	Dec-2015	Sampled By	:	SUN
Quantity Sampled	:	60 gms			

Tests	Specification & Limits	Results
Description	White, odourless, crystalline powder	White, odourless,Crystalline powder
Solublity	Freely soluble in water, soluble in alcohol ,and in chloroform ,slightly soluble in ether , and in benzene	Freely soluble in water, soluble in alcohol, and in chloroform, slightly soluble in ether, and in benzene
Identification: IR Absorption	The infra red absorption spectrum should be concordant with the reference spectrum of chlorpheniramine maleate	The infra red absorption spectrum is concordant with the reference spectrum of chlorpheniramine maleate
Melting Range	130°C to 135°C	133-134°C
Loss on Drying	Not more than 0.5%	0.22%
Residue on Ignition	Not more than 0.2%	0.05%
Related Compounds	Total impurity not more than 2.0%	0.52%
Assay (on dried basis)	NLT 98.0% and NMT 100.5%	99.72%
Residual Solvents		
Isopropanol	Not more than 5000ppm	438ppm
O-xylene	Not more than 2170ppm	Not detected
Methanol	Not more than 3000ppm	Not detected

REMARKS: Chlorpheniramine maleate complies / ~~does not comply~~ with respect to above mentioned test as per **USP 32** Specification

Analysed By	Checked By	Quality Control Manager

Corporate office : 207/208, Udyog Bhavan, Sonawala Road, Goregaon (East), Mumbai - 400 063. Maharashtra, India.
Tel: +91 22 40332727 / 66942507 Fax : +91 22 26860011
E-mail: supriya@supriyalifescience.com Website: www.supriyalifescience.com

Factory : A 5/2, Lote Parshuram Industrial Area, M.I.D.C., Tal.- Khed, Dist.- Ratnagiri, 415 722, Maharashtra, India.
Tel: +91 2356 272299 Fax : +91 2356 272178
E-mail: factory@supriyalifescience.com
GOVT. RECOGNISED EXPORT HOUSE

AVICEL PH-102

AsahiKASEI
ASAHI KASEI CHEMICALS

Date: 26-SEP-2012
Issued by manufacturer

1-105 Kanda Jinbocho, Chiyoda-ku, TOKYO 101-8101, JAPAN
TEL +81-(0)3-3296-3361 FAX +81-(0)3-3296-3467
Manufacturing site: 304, Mizushiri-machi, Nobeoka-city, Miyazaki 882-0015, Japan

3035/BB/XI/12
3031/BB/XI/12

YOUR NO.: B7ME-12-5298-0089

CERTIFICATE OF ANALYSIS

Compendial name: Microcrystalline Cellulose, NF, Ph. Eur., JP

Trade name : CEOLUS®

Grade : PH-102 **Lot No. 2291 (320bags)**

Manufacturing Date: 05-SEP-2012
Re-evaluation Date: 05-SEP-2015

Organic Solvent: not used in our process

Compendial Standards	Specifications	Lot Analysis
Description	Passes	Passes
Identification	Passes	Passes
Degree of polymerization	100 - 300	Passes
Loss on drying (%)	2.0 - 5.0	4.0
Water-soluble substances (mg)	NMT 12.5	6.2
Ether-soluble substances (mg)	NMT 5.0	0.6
Conductivity (μS/cm)	NMT 75	24
Heavy metals (ppm)	NMT 10	NMT 10
Solubility	Passes	Passes
Residue on ignition (%)	NMT 0.1	0.00
Bulk density (g/cm^3)	0.28 - 0.33	0.303
pH	5.0 - 7.5	6.2
Total aerobic microbial count (cfu/g)	NMT 1000	Passes
Total combined molds and yeasts count (cfu/g)	NMT 100	Passes
Escherichia coli	None Present	None Present
Salmonella species	None Present	None Present
Pseudomonas Aeruginosa	None Present	None Present
Staphylococcus Aureus	None Present	None Present
ASAHI Standards		
Particle size, wt. % >250μm (60 mesh)	LT 8.0	0.8
Particle size, wt. % >150μm (100 mesh)	20 - 40	33

NMT –Not More Than; LT –Less Than
We certify that the product complies with the standards of the NF, Ph. Eur., JP.
Storage conditions: Store at ambient conditions. Keep containers sealed; material is hygroscopic.

P.T. WARIS
JAKARTA

Re-evaluation Date: Three years after manufacturing, if stored as recommended.
Asahi Kasei Chemicals recommends that the customer's quality control unit may re-evaluate the quality of this material at the given time e.g. for loss on drying and extend the shelf life of this lot on its own responsibility.

Shuji OMISHI
Manager
Quality Assurance Section
CEOLUS Production Department

Donda Siregar, S. Farm., Apt.
SP. No. KP. 01.03.1.3.0661
Apoteker Penanggung Jawab

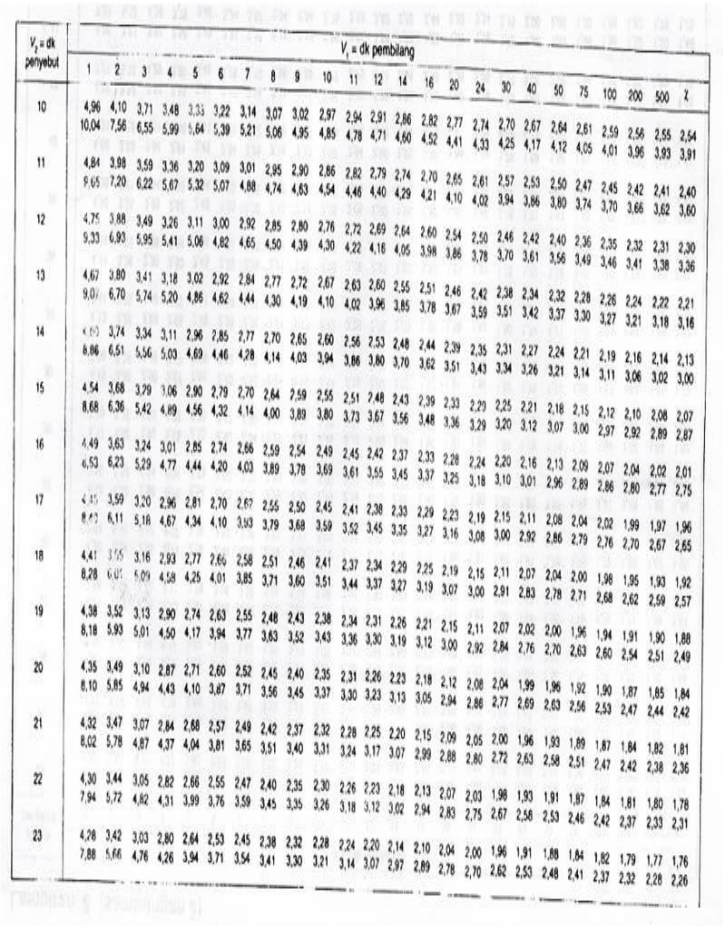
LAMPIRAN N

TABEL UJI F

TABEL DISTRIBUSI F UNTUK 5% DAN 1%

Baris atas untuk taraf signifikan 5%
Baris bawah untuk taraf signifikan 1%

V_2 = dk penyebut	V_1 = dk pembilang																						
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
1	161	200	216	225	230	234	237	239	241	242	243	244	245	246	248	249	250	251	252	253	253	254	254	254
	4052	4999	5403	5625	5764	5859	5928	5961	6022	6056	6082	6106	6142	61,69	6208	6234	6258	6286	6302	6323	6334	6352	6361	6366
2	18,51	19,00	19,16	19,25	19,30	19,33	19,36	19,37	19,38	19,39	19,40	19,41	19,42	19,43	19,44	19,45	19,46	19,47	19,47	19,48	19,49	19,49	19,50	19,50
	98,49	99,01	99,17	99,25	99,30	99,33	99,34	99,36	97,38	99,40	99,41	99,42	99,43	99,44	99,45	99,46	99,47	99,48	99,48	99,49	99,49	99,49	99,50	99,50
3	10,13	9,55	9,28	9,12	9,01	8,94	8,88	8,84	8,81	8,78	8,76	8,74	8,71	8,69	8,66	8,64	8,62	8,60	8,58	8,57	8,56	8,54	8,54	8,53
	34,12	30,81	29,46	28,71	28,24	27,91	27,67	27,49	27,34	27,23	27,13	27,05	26,92	26,83	26,69	26,60	26,50	26,41	26,30	26,27	26,23	26,18	26,14	26,12
4	7,71	6,94	6,59	6,39	6,26	6,16	6,09	6,04	6,00	5,96	5,93	5,91	5,87	5,84	5,80	5,77	5,74	5,71	5,70	5,68	5,66	5,65	5,64	5,53
	21,20	18,00	16,69	15,98	15,52	15,21	14,98	14,80	14,66	14,54	14,45	14,37	14,24	14,15	14,02	13,93	13,83	13,74	13,69	13,61	13,57	13,52	13,48	13,46
5	6,61	5,79	5,41	5,19	5,05	4,95	4,88	4,82	4,78	4,74	4,70	4,68	4,64	4,60	4,56	4,53	4,50	4,46	4,44	4,42	4,40	4,38	4,37	4,36
	16,26	13,27	12,06	11,39	10,97	10,67	10,45	10,27	10,15	10,05	9,96	9,89	9,77	9,68	9,55	9,47	9,38	9,29	9,24	9,17	9,13	9,07	9,04	9,02
6	5,99	5,14	4,76	4,53	4,39	4,28	4,21	4,15	4,10	4,06	4,03	4,00	3,96	3,92	3,87	3,84	3,81	3,77	3,75	3,72	3,71	3,69	3,68	3,67
	13,74	10,92	9,78	9,15	8,75	8,47	8,26	8,10	7,98	7,87	7,79	7,72	7,60	7,52	7,39	7,31	7,23	7,14	7,09	7,02	6,99	6,94	6,90	6,88
7	5,59	4,74	4,35	4,12	3,97	3,87	3,79	3,73	3,68	3,63	3,60	3,57	3,52	3,49	3,44	3,41	3,38	3,34	3,32	3,29	3,28	3,25	3,24	3,23
	12,25	9,55	8,45	7,85	7,46	7,19	7,00	6,84	6,71	6,62	6,54	6,47	6,35	6,27	6,15	6,07	5,98	5,90	5,85	5,78	5,75	5,70	5,67	5,65
8	5,32	4,46	4,07	3,84	3,69	3,58	3,50	3,44	3,39	3,34	3,31	3,28	3,23	3,20	3,15	3,12	3,08	3,05	3,03	3,00	2,98	2,96	2,94	2,93
	11,26	8,65	7,59	7,01	6,63	6,37	6,19	6,03	5,91	5,82	5,74	5,67	5,56	5,48	5,36	5,28	5,20	5,11	5,06	5,00	4,96	4,91	4,88	4,86
9	5,12	4,26	3,86	3,63	3,48	3,37	3,29	3,23	3,18	3,13	3,10	3,07	3,02	2,98	2,93	2,90	2,86	2,82	2,80	2,77	2,76	2,73	2,72	2,71
	10,56	8,02	6,99	6,42	6,06	5,80	5,62	5,47	5,35	5,26	5,18	5,11	5,00	4,92	4,80	4,73	4,61	4,56	4,51	4,45	4,41	4,36	4,33	4,34



V_2 = dk penyebut	V_1 = dk pembilang																				
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
10	4,96	4,10	3,71	3,48	3,33	3,22	3,14	3,07	3,02	2,97	2,94	2,91	2,86	2,82	2,77	2,74	2,70	2,67	2,64	2,61	2,59	2,56	2,55	2,54
	10,04	7,56	6,55	5,99	5,64	5,39	5,21	5,06	4,95	4,85	4,78	4,71	4,60	4,52	4,41	4,33	4,25	4,17	4,12	4,05	4,01	3,96	3,93	3,91
11	4,84	3,98	3,59	3,36	3,20	3,09	3,01	2,95	2,90	2,86	2,82	2,79	2,74	2,70	2,65	2,61	2,57	2,53	2,50	2,47	2,45	2,42	2,41	2,40
	9,65	7,20	6,22	5,67	5,32	5,07	4,88	4,74	4,63	4,54	4,46	4,40	4,29	4,21	4,10	4,02	3,94	3,86	3,80	3,74	3,70	3,66	3,62	3,60
12	4,75	3,88	3,49	3,26	3,11	3,00	2,92	2,85	2,80	2,76	2,72	2,69	2,64	2,60	2,54	2,50	2,46	2,42	2,40	2,36	2,35	2,32	2,31	2,30
	9,33	6,93	5,95	5,41	5,06	4,82	4,65	4,50	4,39	4,30	4,22	4,16	4,05	3,98	3,86	3,78	3,70	3,61	3,56	3,49	3,46	3,41	3,38	3,36
13	4,67	3,80	3,41	3,18	3,02	2,92	2,84	2,77	2,72	2,67	2,63	2,60	2,55	2,51	2,46	2,42	2,38	2,34	2,32	2,28	2,26	2,24	2,22	2,21
	9,07	6,70	5,74	5,20	4,86	4,62	4,44	4,30	4,19	4,10	4,02	3,96	3,85	3,78	3,67	3,59	3,51	3,42	3,37	3,30	3,27	3,21	3,18	3,16
14	4,60	3,74	3,34	3,11	2,96	2,85	2,77	2,70	2,65	2,60	2,56	2,53	2,48	2,44	2,39	2,35	2,31	2,27	2,24	2,21	2,19	2,16	2,14	2,13
	8,86	6,51	5,56	5,03	4,69	4,46	4,28	4,14	4,03	3,94	3,86	3,80	3,70	3,62	3,51	3,43	3,34	3,26	3,21	3,14	3,11	3,06	3,02	3,00
15	4,54	3,68	3,29	3,06	2,90	2,79	2,70	2,64	2,59	2,55	2,51	2,48	2,43	2,39	2,33	2,29	2,25	2,21	2,18	2,15	2,12	2,10	2,08	2,07
	8,68	6,36	5,42	4,89	4,56	4,32	4,14	4,00	3,89	3,80	3,73	3,67	3,56	3,48	3,36	3,29	3,20	3,12	3,07	3,00	2,97	2,92	2,89	2,87
16	4,49	3,63	3,24	3,01	2,85	2,74	2,66	2,59	2,54	2,49	2,45	2,42	2,37	2,33	2,28	2,24	2,20	2,16	2,13	2,09	2,07	2,04	2,02	2,01
	8,53	6,23	5,29	4,77	4,44	4,20	4,03	3,89	3,78	3,69	3,61	3,55	3,45	3,37	3,25	3,18	3,10	3,01	2,96	2,89	2,86	2,80	2,77	2,75
17	4,45	3,59	3,20	2,96	2,81	2,70	2,62	2,55	2,50	2,45	2,41	2,38	2,33	2,29	2,23	2,19	2,15	2,11	2,08	2,04	2,02	1,99	1,97	1,96
	8,40	6,11	5,18	4,67	4,34	4,10	3,93	3,79	3,68	3,59	3,52	3,45	3,35	3,27	3,16	3,08	3,00	2,92	2,86	2,79	2,76	2,70	2,67	2,65
18	4,41	3,55	3,16	2,93	2,77	2,66	2,58	2,51	2,46	2,41	2,37	2,34	2,29	2,25	2,19	2,15	2,11	2,07	2,04	2,00	1,98	1,95	1,93	1,92
	8,28	6,01	5,09	4,58	4,25	4,01	3,85	3,71	3,60	3,51	3,44	3,37	3,27	3,19	3,07	3,00	2,91	2,83	2,78	2,71	2,68	2,62	2,59	2,57
19	4,38	3,52	3,13	2,90	2,74	2,63	2,55	2,48	2,43	2,38	2,34	2,31	2,26	2,21	2,15	2,11	2,07	2,02	2,00	1,96	1,94	1,91	1,90	1,88
	8,18	5,93	5,01	4,50	4,17	3,94	3,77	3,63	3,52	3,43	3,36	3,30	3,19	3,12	3,00	2,92	2,84	2,76	2,70	2,63	2,60	2,54	2,51	2,49
20	4,35	3,49	3,10	2,87	2,71	2,60	2,52	2,45	2,40	2,35	2,31	2,28	2,23	2,18	2,12	2,08	2,04	1,99	1,96	1,92	1,90	1,87	1,85	1,84
	8,10	5,85	4,94	4,43	4,10	3,87	3,71	3,56	3,45	3,37	3,30	3,23	3,13	3,05	2,94	2,86	2,77	2,69	2,63	2,56	2,53	2,47	2,44	2,42
21	4,32	3,47	3,07	2,84	2,68	2,57	2,49	2,42	2,37	2,32	2,28	2,25	2,20	2,15	2,09	2,05	2,00	1,96	1,93	1,89	1,87	1,84	1,82	1,81
	8,02	5,78	4,87	4,37	4,04	3,81	3,65	3,51	3,40	3,31	3,24	3,17	3,07	2,99	2,88	2,80	2,72	2,63	2,58	2,51	2,47	2,42	2,38	2,36
22	4,30	3,44	3,05	2,82	2,66	2,55	2,47	2,40	2,35	2,30	2,26	2,23	2,18	2,13	2,07	2,03	1,98	1,93	1,91	1,87	1,84	1,81	1,80	1,78
	7,94	5,72	4,82	4,31	3,99	3,76	3,59	3,45	3,35	3,26	3,18	3,12	3,02	2,94	2,83	2,75	2,67	2,58	2,53	2,46	2,42	2,37	2,33	2,31
23	4,28	3,42	3,03	2,80	2,64	2,53	2,45	2,38	2,32	2,28	2,24	2,20	2,14	2,10	2,04	2,00	1,96	1,91	1,88	1,84	1,82	1,79	1,77	1,76
	7,88	5,66	4,76	4,26	3,94	3,71	3,54	3,41	3,30	3,21	3,14	3,07	2,97	2,89	2,78	2,70	2,62	2,53	2,48	2,41	2,37	2,32	2,28	2,26

Sumber: Hartono, 2004

LAMPIRAN O

TABEL UJI R

DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT	DEGREES OF FREEDOM (DF)	5 PERCENT	1 PERCENT
1	.997	1.000	24	.388	.496
2	.950	.990	25	.381	.487
3	.878	.959	26	.374	.478
4	.811	.917	27	.367	.470
5	.754	.874	28	.361	.463
6	.707	.834	29	.355	.456
7	.666	.798	30	.349	.449
8	.632	.765	35	.325	.418
9	.602	.735	40	.304	.393
10	.576	.708	48	.288	.372
11	.553	.684	50	.273	.354
12	.532	.661	60	.250	.325
13	.514	.641	70	.232	.302
14	.497	.623	80	.217	.283
15	.482	.606	90	.205	.267
16	.468	.590	100	.195	.254
17	.456	.575	125	.174	.228
18	.444	.561	150	.159	.208
19	.433	.549	200	.138	.181
20	.423	.537	300	.113	.148
21	.413	.526	400	.098	.128
22	.404	.515	500	.088	.115
23	.396	.505	1000	.062	.081

Sumber: Hartono, 2004

LAMPIRAN P

TABEL UJI T

v	α				
	0.10	0.05	0.025	0.01	0.005
1	3.078	6.314	12.706	31.821	63.657
2	1.886	2.920	4.303	6.965	9.925
3	1.638	2.353	3.182	4.451	5.841
4	1.533	2.132	2.776	3.747	4.604
5	1.476	2.015	2.561	3.365	4.012
6	1.440	1.943	2.447	3.143	3.707
7	1.415	1.895	2.365	2.998	3.499
8	1.397	1.860	2.306	2.896	3.355
9	1.383	1.833	2.262	2.821	3.250
10	1.372	1.812	2.228	2.764	3.169
11	1.363	1.796	2.201	2.718	3.106
12	1.356	1.782	2.179	2.681	3.055
13	1.350	1.771	2.160	2.650	3.012
14	1.345	1.761	2.145	2.624	2.977
15	1.341	1.753	2.131	2.602	2.947
16	1.337	1.746	2.120	2.583	2.921
17	1.333	1.740	2.110	2.567	2.898
18	1.330	1.734	2.101	2.552	2.878
19	1.328	1.729	2.093	2.539	2.861
20	1.325	1.725	2.086	2.528	2.845
21	1.323	1.721	2.080	2.518	2.831
22	1.321	1.717	2.074	2.508	2.819
23	1.319	1.714	2.069	2.500	2.807
24	1.318	1.711	2.064	2.492	2.797
25	1.316	1.708	2.060	2.485	2.787
26	1.315	1.706	2.056	2.479	2.779
27	1.314	1.703	2.052	2.473	2.771
28	1.313	1.701	2.048	2.467	2.763
29	1.311	1.699	2.045	2.462	2.756
inf.	1.282	1.645	1.960	2.326	2.576

Sumber : Ronald E. Walpole (1995) : Pengantar Statistika.

LAMPIRAN Q

HASIL UJI STATISTIK *HAUSNER RATIO* TABLET LIKUISOLID KLORFENIRAMIN MALEAT ANTAR FORMULA

Descriptives

Hausner_Ratio

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	1.2467	.00577	.00333	1.2323	1.2610	1.24	1.25
B	3	1.2500	.00000	.00000	1.2500	1.2500	1.25	1.25
C	3	1.2500	.00000	.00000	1.2500	1.2500	1.25	1.25
D	3	1.2467	.00577	.00333	1.2323	1.2610	1.24	1.25
Total	12	1.2483	.00389	.00112	1.2459	1.2508	1.24	1.25

Test of Homogeneity of Variances

Hausner_Ratio

Levene Statistic	df1	df2	Sig.
10.667	3	8	.004

ANOVA

Hausner_Ratio

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	3	.000	.667	.596
Within Groups	.000	8	.000		
Total	.000	11			

Karena $F_{hitung} < F_{tabel\ 0,05\ (3,8)} = 0,667 < 4,07$; maka H_0 diterima dan tidak ada perbedaan bermakna antar formula

LAMPIRAN R

HASIL UJI STATISTIK *CARR'S INDEX* TABLET LIKUISOLID KLORFENIRAMIN MALEAT ANTAR FORMULA

Descriptives

Carr_index

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	20.1333	.05132	.02963	20.0059	20.2608	20.09	20.19
B	3	20.0833	.07638	.04410	19.8936	20.2731	20.00	20.15
C	3	20.1267	.07506	.04333	19.9402	20.3131	20.05	20.20
D	3	20.1333	.02082	.01202	20.0816	20.1850	20.11	20.15
Total	12	20.1192	.05583	.01612	20.0837	20.1546	20.00	20.20

Test of Homogeneity of Variances

Carr_index

Levene Statistic	df1	df2	Sig.
1.112	3	8	.400

ANOVA

Carr_index

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.005	3	.002	.479	.706
Within Groups	.029	8	.004		
Total	.034	11			

Karena $F_{hitung} < F_{tabel\ 0,05\ (3,8)} = 0,479 < 4,07$; maka H_0 diterima dan tidak ada perbedaan bermakna antar formula

LAMPIRAN S

HASIL UJI STATISTIK KERAPUHAN TABLET LIKUISOLID KLORFENIRAMIN MALEAT ANTAR FORMULA

Descriptives

Kerapuhan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	.0633	.01528	.00882	.0254	.1013	.05	.08
B	3	.0400	.01732	.01000	-.0030	.0830	.02	.05
C	3	.0367	.02517	.01453	-.0258	.0992	.01	.06
D	3	.1233	.01155	.00667	.0946	.1520	.11	.13
Total	12	.0658	.03942	.01138	.0408	.0909	.01	.13

Test of Homogeneity of Variances

Kerapuhan

Levene Statistic	df1	df2	Sig.
.676	3	8	.591

ANOVA

Kerapuhan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.014	3	.005	14.863	.001
Within Groups	.003	8	.000		
Total	.017	11			

Karena $F_{hitung} > F_{tabel\ 0,05\ (3,8)} = 14,863 > 4,07$ sehingga H_0 ditolak dan ada perbedaan bermakna pada kerapuhan antar formula

Multiple Comparisons

Kerapuhan

LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	.02333	.01472	.152	-.0106	.0573
	C	.02667	.01472	.108	-.0073	.0606
	D	-.06000*	.01472	.004	-.0939	-.0261
B	A	-.02333	.01472	.152	-.0573	.0106
	C	.00333	.01472	.827	-.0306	.0373
	D	-.08333*	.01472	.000	-.1173	-.0494
C	A	-.02667	.01472	.108	-.0606	.0073
	B	-.00333	.01472	.827	-.0373	.0306
	D	-.08667*	.01472	.000	-.1206	-.0527
D	A	.06000*	.01472	.004	.0261	.0939
	B	.08333*	.01472	.000	.0494	.1173
	C	.08667*	.01472	.000	.0527	.1206

*. The mean difference is significant at the 0.05 level.

Keterangan:

Hasil uji LSD dari keempat formula. diperoleh nilai sig. < 0.05 sehingga Ho ditolak (*). berarti rata-rata kerapuhan tablet dari keempat formula menunjukkan bahwa ada perbedaan yang signifikan antar formula yaitu

formula A menunjukkan perbedaan yang signifikan terhadap formula D; formula B menunjukkan perbedaan yang signifikan terhadap formula D. formula C menunjukkan perbedaan yang signifikan terhadap formula D. sedangkan untuk formula D menunjukkan perbedaan yang signifikan terhadap semua formula.

LAMPIRAN T

HASIL UJI STATISTIK KEKERASAN TABLET LIKUISOLID KLORFENIRAMIN MALEAT ANTAR FORMULA

Descriptives

Kekerasan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	13.3767	.14468	.08353	13.0173	13.7361	13.21	13.47
B	3	7.7933	.07095	.04096	7.6171	7.9696	7.73	7.87
C	3	15.7067	.43363	.25036	14.6295	16.7839	15.21	16.01
D	3	10.0500	.02646	.01528	9.9843	10.1157	10.03	10.08
Total	12	11.7317	3.17611	.91687	9.7137	13.7497	7.73	16.01

Test of Homogeneity of Variances

Kekerasan

Levene Statistic	df1	df2	Sig.
8.690	3	8	.007

ANOVA

Kekerasan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	110.535	3	36.845	686.448	.000
Within Groups	.429	8	.054		
Total	110.965	11			

Karena $F_{hitung} > F_{tabel\ 0,05\ (3,8)}$ = 686,448 > 4,07 sehingga H_0 ditolak dan ada perbedaan bermakna pada kekerasan antar formula

Multiple Comparisons

Kekerasan

LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	5.58333*	.18916	.000	5.1471	6.0195
	C	-2.33000*	.18916	.000	-2.7662	-1.8938
	D	3.32667*	.18916	.000	2.8905	3.7629
B	A	-5.58333*	.18916	.000	-6.0195	-5.1471
	C	-7.91333*	.18916	.000	-8.3495	-7.4771
	D	-2.25667*	.18916	.000	-2.6929	-1.8205
C	A	2.33000*	.18916	.000	1.8938	2.7662
	B	7.91333*	.18916	.000	7.4771	8.3495
	D	5.65667*	.18916	.000	5.2205	6.0929
D	A	-3.32667*	.18916	.000	-3.7629	-2.8905
	B	2.25667*	.18916	.000	1.8205	2.6929
	C	-5.65667*	.18916	.000	-6.0929	-5.2205

*. The mean difference is significant at the 0.05 level.

Keterangan:

Hasil uji LSD dari keempat formula. diperoleh nilai sig. < 0.05 sehingga Ho ditolak (*). berarti rata-rata kekerasan tablet dari keempat formula

menunjukkan bahwa ada perbedaan yang signifikan antar formula dimana semua formula menunjukan perbedaan yang signifikan satu sama lainnya.

LAMPIRAN U

HASIL UJI STATISTIK KONSTANTA LAJU DISOLUSI TABLET LIKUISOLID KLORFENIRAMIN MALEAT ANTAR FORMULA

Descriptives

K_Disolusi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	.012500	.0002646	.0001528	.011843	.013157	.0123	.0128
B	3	.013933	.0004726	.0002728	.012759	.015107	.0134	.0143
C	3	.011633	.0002082	.0001202	.011116	.012150	.0114	.0118
D	3	.013967	.0004041	.0002333	.012963	.014971	.0136	.0144
Total	12	.013008	.0010774	.0003110	.012324	.013693	.0114	.0144

Test of Homogeneity of Variances

K_Disolusi

Levene Statistic	df1	df2	Sig.
1.083	3	8	.410

ANOVA

K_Disolusi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.000	3	.000	31.384	.000
Within Groups	.000	8	.000		
Total	.000	11			

Karena $F_{hitung} > F_{(3,8)}$, = 31,384 > 4,07 sehingga H_0 ditolak dan ada perbedaan yang bermakna pada konstanta laju disolusi antar formula

Multiple Comparisons

K_Disolusi

LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	-.0014333*	.0002887	.001	-.002099	-.000768
	C	.0008667*	.0002887	.017	.000201	.001532
	D	-.0014667*	.0002887	.001	-.002132	-.000801
B	A	.0014333*	.0002887	.001	.000768	.002099
	C	.0023000*	.0002887	.000	.001634	.002966
	D	-.0000333	.0002887	.911	-.000699	.000632
C	A	-.0008667*	.0002887	.017	-.001532	-.000201
	B	-.0023000*	.0002887	.000	-.002966	-.001634
	D	-.0023333*	.0002887	.000	-.002999	-.001668
D	A	.0014667*	.0002887	.001	.000801	.002132
	B	.0000333	.0002887	.911	-.000632	.000699
	C	.0023333*	.0002887	.000	.001668	.002999

*. The mean difference is significant at the 0.05 level.

Keterangan:

Hasil uji LSD dari keempat formula. diperoleh nilai sig. < 0.05 sehingga Ho ditolak (*). berarti rata-rata konstanta laju disolusi tablet dari keempat formula menunjukkan bahwa ada perbedaan yang signifikan antar formula

yaitu formula A menunjukkan perbedaan yang signifikan terhadap formula B dan D; formula B menunjukkan perbedaan yang signifikan terhadap formula A dan C. formula C menunjukkan perbedaan yang signifikan terhadap formula B dan D. sedangkan untuk formula D menunjukkan perbedaan yang signifikan terhadap formula A dan C.

LAMPIRAN V

HASIL UJI ANOVA *HAUSNER RATIO* KLORFENIRAMIN MALEAT DENGAN *DESIGN EXPERT*

Response 1 Hausner Ratio

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	3.333E-005	3	1.111E-005	0.67	0.5957	
not significant						
A-Jumlah PEG 400	*0.000*	*1*	*0.000*	*0.000*	*1.0000*	
B-Konsentrasi XG	*-2.711E-020*	*1*	*-2.711E-020*	*-1.626E-015*	*1.0000*	
AB3.333E-005	*1*	*3.333E-005*	*2.00*	*0.1950*		
Pure Error	1.333E-004	8	1.667E-005			
Cor Total	1.667E-004	11				

The "Model F-value" of 0.67 implies the model is not significant relative to the noise. There is a 59.57 % chance that a "Model F-value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case there are no significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	4.082E-003		R-Squared	0.2000
Mean1.25		Adj R-Squared	-0.1000	
C.V. %	0.33		Pred R-Squared	-0.8000
PRESS	3.000E-004		Adeq Precision	1.414

A negative "Pred R-Squared" implies that the overall mean is a better predictor of your response than the current model.

"Adeq Precision" measures the signal to noise ratio. A ratio of 1.41 indicates an inadequate signal and we should not use this model to navigate the design space.

Coefficient Factor	Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	1.25	1	1.179E-003	1.25	1.25	
A-Jumlah PEG 400	0.000	1	1.179E-003	-2.718E-003	2.718E-003	1.00
B-Konsentrasi XG	0.000	1	1.179E-003	-2.718E-003	2.718E-003	1.00
AB-1.667E-003	1	1.179E-003	-4.384E-003	1.051E-003	1.00	

Final Equation in Terms of Coded Factors:

Hausner Ratio	=
+1.25	
+0.000	* A
+0.000	* B
-1.667E-003	* A * B

Final Equation in Terms of Actual Factors:

Hausner Ratio	=
+1.19417	
+2.70833E-003	* Jumlah PEG 400
+1.66667E-003	* Konsentrasi XG
-8.33333E-005	* Jumlah PEG 400 * Konsentrasi XG

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.

3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN W

HASIL UJI ANOVA *CARR'S INDEX* KLORFENIRAMIN MALEAT DENGAN *DESIGN EXPERT*

Response 2 Carr's Index

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	5.225E-003	3	1.742E-003	0.48	0.7055	
not significant						
A-Jumlah PEG 400	*1.408E-003*	*1*	*1.408E-003*	*0.39*	*0.5509*	
B-Konsentrasi XG	*1.408E-003*	*1*	*1.408E-003*	*0.39*	*0.5509*	
AB2.408E-003	*1*	*2.408E-003*	*0.66*	*0.4391*		
Pure Error	0.029	8	3.633E-003			
Cor Total	0.034	11				

The "Model F-value" of 0.48 implies the model is not significant relative to the noise. There is a 70.55 % chance that a "Model F-value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case there are no significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.060		R-Squared	0.1524
Mean20.12		Adj R-Squared	-0.1655	
C.V. %	0.30		Pred R-Squared	-0.9072
PRESS	0.065		Adeq Precision	1.437

A negative "Pred R-Squared" implies that the overall mean is a better predictor of your response than the current model.

"Adeq Precision" measures the signal to noise ratio. A ratio of 1.44 indicates an inadequate signal and we should not use this model to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	20.12	1	0.017	20.08	20.16	
A-Jumlah PEG 400	-0.011	1	0.017	-0.051	0.029	1.00
B-Konsentrasi XG	0.011	1	0.017	-0.029	0.051	1.00
AB0.014	1	0.017	-0.026	0.054	1.00	

Final Equation in Terms of Coded Factors:

Carr's Index	=
+20.12	
-0.011	* A
+0.011	* B
+0.014	* A * B

Final Equation in Terms of Actual Factors:

Carr's Index	=
+20.46583	
-0.024375	* Jumlah PEG 400
-9.83333E-003	* Konsentrasi XG
+7.08333E-004	* Jumlah PEG 400 * Konsentrasi XG

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.

3) Externally Studentized Residuals to look for outliers, i.e., influential values.
4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN X

HASIL UJI ANOVA KERAPUHAN KLORFENIRAMIN MALEAT DENGAN *DESIGN EXPERT*

Response 3 Kerapuhan

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	0.014	3	4.831E-003	14.86	0.0012	
significant						
A-Jumlah PEG 400	*3.008E-003*	*1*	*3.008E-003*	*9.26*	*0.0160*	
B-Konsentrasi XG	*2.408E-003*	*1*	*2.408E-003*	*7.41*	*0.0262*	
AB9.075E-003	*1*	*9.075E-003*	*27.92*	*0.0007*		
Pure Error	2.600E-003	8	3.250E-004			
Cor Total	0.017	11				

The Model F-value of 14.86 implies the model is significant. There is only a 0.12% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B, AB are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.018		R-Squared	0.8479
Mean0.066		Adj R-Squared	0.7908	
C.V. %	27.38		Pred R-Squared	0.6577
PRESS	5.850E-003		Adeq Precision	8.327

The "Pred R-Squared" of 0.6577 is in reasonable agreement with the "Adj R-Squared" of 0.7908.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 8.327 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	0.066	1	5.204E-003	0.054	0.078	
A-Jumlah PEG 400	0.016	1	5.204E-003	3.833E-003	0.028	1.00
B-Konsentrasi XG	0.014	1	5.204E-003	2.166E-003	0.026	1.00
AB	0.028	1	5.204E-003	0.015	0.040	1.00

Final Equation in Terms of Coded Factors:

Kerapuhan =
+0.066
+0.016 * A
+0.014 * B
+0.028 * A * B

Final Equation in Terms of Actual Factors:

Kerapuhan =
+0.73583
-0.042708 * Jumlah PEG 400
-0.021833 * Konsentrasi XG
+1.37500E-003 * Jumlah PEG 400 * Konsentrasi XG

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
In the Diagnostics Node, Select Case Statistics from the View Menu.

Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
1) Normal probability plot of the studentized residuals to check for normality of residuals.
2) Studentized residuals versus predicted values to check for constant error.
3) Externally Studentized Residuals to look for outliers, i.e., influential values.

4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN Y

HASIL UJI ANOVA KEKERASAN KLORFENIRAMIN MALEAT DENGAN *DESIGN EXPERT*

Response 4 Kekerasan

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	110.54	3	36.85	686.45	< 0.0001	
significant						
A-Jumlah PEG 400	*94.75*	*1*	*94.75*	*1765.31*	*< 0.0001*	
B-Konsentrasi XG	*15.78*	*1*	*15.78*	*293.96*	*< 0.0001*	
AB4.033E-003	*1*	*4.033E-003*	*0.075*	*0.7909*		
Pure Error	0.43	8	0.054			
Cor Total	110.96	11				

The Model F-value of 686.45 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A, B are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.23		R-Squared	0.9961
Mean11.73		Adj R-Squared	0.9947	
C.V. %	1.97		Pred R-Squared	0.9913
PRESS	0.97		Adeq Precision	59.161

The "Pred R-Squared" of 0.9913 is in reasonable agreement with the "Adj R-Squared" of 0.9947.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 59.161 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	11.73	1	0.067	11.58	11.89	
A-Jumlah PEG 400	-2.81	1	0.067	-2.96	-2.66	1.00
B-Konsentrasi XG	1.15	1	0.067	0.99	1.30	1.00
AB-0.018	1	0.067	-0.17	0.14	1.00	

Final Equation in Terms of Coded Factors:

Kekerasan =
+11.73
-2.81 * A
+1.15 * B
-0.018 * A * B

Final Equation in Terms of Actual Factors:

Kekerasan =
+3.25417
-0.32146 * Jumlah PEG 400
+0.47700 * Konsentrasi XG
-9.16667E-004 * Jumlah PEG 400 * Konsentrasi XG

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
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Proceed to Diagnostic Plots (the next icon in progression). Be sure to look at the:
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3) Externally Studentized Residuals to look for outliers, i.e., influential values.

4) Box-Cox plot for power transformations.

If all the model statistics and diagnostic plots are OK, finish up with the Model Graphs icon.

LAMPIRAN Z

HASIL UJI ANOVA KONSTANTA LAJU DISOLUSI KLORFENIRAMIN MALEAT DENGAN *DESIGN EXPERT*

Response 5 K Disolusi

ANOVA for selected factorial model

Analysis of variance table [Partial sum of squares - Type III]

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	1.177E-005	3	3.923E-006	31.38	< 0.0001	
significant						
A-Jumlah PEG 400	*1.064E-005*	*1*	*1.064E-005*	*85.13*	*< 0.0001*	
B-Konsentrasi XG	*5.208E-007*	*1*	*5.208E-007*	*4.17*	*0.0755*	
AB6.075E-007	*1*	*6.075E-007*	*4.86*	*0.0586*		
Pure Error	1.000E-006	8	1.250E-007			
Cor Total	1.277E-005	11				

The Model F-value of 31.38 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.
In this case A are significant model terms.
Values greater than 0.1000 indicate the model terms are not significant.
If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	3.536E-004		R-Squared	0.9217
Mean0.013		Adj R-Squared	0.8923	
C.V. %	2.72		Pred R-Squared	0.8238
PRESS	2.250E-006		Adeq Precision	11.431

The "Pred R-Squared" of 0.8238 is in reasonable agreement with the "Adj R-Squared" of 0.8923.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 11.431 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	0.013	1	1.021E-004	0.013	0.013	
A-Jumlah PEG 400	9.417E-004	1	1.021E-004	7.063E-004	1.177E-003	1.00
B-Konsentrasi XG	-2.083E-004	1	1.021E-004	-4.437E-004	2.702E-005	1.00
AB2.250E-004	1	1.021E-004	-1.036E-005	4.604E-004	1.00	

Final Equation in Terms of Coded Factors:

K Disolusi =
+0.013
+9.417E-004 * A
-2.083E-004 * B
+2.250E-004 * A * B

Final Equation in Terms of Actual Factors:

K Disolusi =
+0.020675
-2.47917E-004 * Jumlah PEG 400
-3.08333E-004 * Konsentrasi XG
+1.12500E-005 * Jumlah PEG 400 * Konsentrasi XG

The Diagnostics Case Statistics Report has been moved to the Diagnostics Node.
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LAMPIRAN AA

HASIL UJI STATISTIK ANTARA HASIL PERCOBAAN DENGAN HASIL TEORITIS PADA UJI *HAUSNER RATIO* KLORFENIRAMIN MALEAT

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	P_Hausner	1.2500	4	.00000	.00000
	T_Hausner	1.250000	4	.0019630	.0009815

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	P_Hausner & T_Hausner	4	.	.

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	P_Hausner - T_Hausner	.0000000	.0019630	.0009815	-.0031236	.0031236	.000	3	1.000

Hipotesa Pengujian :

Di dapatkan hasil T_{hitung} (0,000) < $T_{(0,05)(3)}$ (2,353), yang berarti H_0 diterima dan tidak ada perbedaan bermakna antara hasil percobaan dan teoritis

LAMPIRAN AB

HASIL UJI STATISTIK ANTARA HASIL PERCOBAAN DENGAN HASIL TEORITIS PADA UJI *CARR'S INDEX* KLORFENIRAMIN MALEAT

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	P_Carr	20.1175	4	.02500	.01250
	T_Carr	20.11750	4	.029138	.014569

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	P_Carr & T_Carr	4	.995	.005

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	P_Carr - T_Carr	.000000	.004899	.002449	-.007795	.007795	.000	3	1.000

Hipotesa Pengujian :

Di dapatkan hasil T_{hitung} (0,000) < $T_{(0,05)\,(3)}$ (2,353), yang berarti H_0 diterima dan tidak ada perbedaan bermakna antara hasil percobaan dan teoritis

LAMPIRAN AC

HASIL UJI STATISTIK ANTARA HASIL PERCOBAAN DENGAN HASIL TEORITIS PADA UJI KERAPUHAN KLORFENIRAMIN MALEAT

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	P_Kerapuhan	.0650	4	.03786	.01893
	T_Kerapuhan	.06600	4	.040596	.020298

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	P_Kerapuhan & T_Kerapuhan	4	.998	.002

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	P_Kerapuhan - T_Kerapuhan	-.001000	.003830	.001915	-.007094	.005094	-.522	3	.638

Hipotesa Pengujian :

Di dapatkan hasil T_{hitung} (-0,522) < $T_{(0,05)(3)}$ (2,353), yang berarti H_0 diterima dan tidak ada perbedaan bermakna antara hasil percobaan dan teoritis

LAMPIRAN AD

HASIL UJI STATISTIK ANTARA HASIL PERCOBAAN DENGAN HASIL TEORITIS PADA UJI KEKERASAN KLORFENIRAMIN MALEAT

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	P_Kekerasan	11.7325	4	3.50756	1.75378
	T_Kekerasan	11.73000	4	3.505980	1.752990

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	P_Kekerasan & T_Kekerasan	4	1.000	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	P_Kekerasan - T_Kekerasan	.002500	.004123	.002062	-.004061	.009061	1.213	3	.312

Hipotesa Pengujian :

Di dapatkan hasil T_{hitung} (1,213) < $T_{(0,05)(3)}$ (2,353), yang berarti H_0 diterima dan tidak ada perbedaan bermakna antara hasil percobaan dan teoritis

LAMPIRAN AE

HASIL UJI STATISTIK ANTARA HASIL PERCOBAAN DENGAN HASIL TEORITIS PADA UJI KONSTANTA LAJU DISOLUSI KLORFENIRAMIN MALEAT

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	P_kDisolusi	.013025	4	.0011177	.0005588
	T_kDisolusi	.013000	4	.0011576	.0005788

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	P_kDisolusi & T_kDisolusi	4	.997	.003

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	P_kDisolusi - T_kDisolusi	.0000250	.0000957	.0000479	-.0001273	.0001773	.522	3	.638

Hipotesa Pengujian :

Di dapatkan hasil T_{hitung} (0,522) < $T_{(0,05)(3)}$ (2,353), yang berarti H_0 diterima dan tidak ada perbedaan bermakna antara hasil percobaan dan teoritis