BAB V

KESIMPULAN

5.1. Simpulan

Konsentrasi HPMC dan juga interaksi manitol dengan crospovidone berpengaruh signifikan terhadap mutu fisik granul bahan ko-proses dimana dapat menurunkan nilai Carr's Index sedangkan konsentrasi manitol berpengaruh signifikan terhadap peningkatan nilai Carr's index Dan juga Konsentrasi HPMC berpengaruh signifikan terhadap peningkatan nilai Hausner Ratio, konsentrasi manitol berpengaruh signifikan terhadap penurunan nilai hausner ratio

Konsentrasi interaksi manitol dengan Crospovidone berpengaruh signifikan terhadap mutu fisik tablet bahan ko-proses dimana dapat meningkatkan kekerasan tablet; Konsentrasi HPMC dan interaksi HPMC dengan manitol berpengaruh signifikan terhadap penurunan nilai kerapuhan; Konsentrasi HPMC dan interaksi antara HPMC,manitol dan crospovidone berpengaruh signifikan terhadap peningkatan waktu hancur. Sedangkan konsentasi Manitol, Crospovidone, interaksi antara HPMC dan manitol, interaksi HPMC dan Crospovidone , Interaksi Manitol dan Crospovidone memberikan pengaruh signifikan terhadap penurunan waktu hancur tablet; Konsentrasi manitol, *crospovidone*, dan HPMC, maupun interaksi HPMC dengan manitol dan juga interaksi HPMC dengan *crospovidone* memberikan pengaruh signifikan terhadap peningkatan ratio absorbsi tablet

Formula optimum bahan ko-proses dapat diperoleh dengan kombinasi konsentrasi HPMC 0,79%, konsentrasi manitol 0,97%, dan juga konsentrasi *crospovidone* 0,98% dengan hasil optimum mutu fisik granul,

Carr's Index 14,96%, *Hausner ratio* 1,17 dan dengan hasil optimum mutu fisik tablet yang dihasilkan, kekerasan 3,02 Kp, kerapuhan 0,413%, waktu hancur 32,06 s, waktu basah 59,18 s dan ratio absorbsi 159,03. Sedangakan pada hasil penelitian mutu fisik granul, *Carr's Index* 15,10%, *Hausner ratio* 1,17 dan dengan hasil penelitian mutu fisik tablet yang dihasilkan, kekerasan 2,70 Kp, kerapuhan 0,903%, waktu hancur 37,67 s, waktu basah 152,73 s dan ratio absorbsi 96,33. Pada uji statistik *one sample t-test* menunjukan bahwa hasil mutu fisik granul mrnunjukan tidak adanya perbedaan yang signifikan antara nilai dari formula optimum dengan nilai formula penelitian. Sedangkan pada uji mutu fisik tablet yang meliputi kekerasan,kerapuhan, waktu hancur,dan Ratio absorbsi menunjukan tidak adanya perbedaan yang signifikan antara nilai dari formula optimum dengan nilai formula penelitian kecuali pada uji waktu basah akan tetapi waktu basah yang dihasilkan masih memnuhi persyaratan tablet ODT dimana < 3menit.

Hasil formula ODT yang dibuat dengan menggunakan bahan ko-proses pada uji mutu fisik massa granul hingga uji mutu fisik tablet semuanya memasuki rentan persyaratan utnuk tablet ODT

5.1. Alur Penelitian Selanjutnya

Dapat dilakukan penelitian lebih lanjut mengenai formulasi ko-proses dengan menggunakan bahan aktif yang berbeda dan juga dapat mencoba formula optimum lainnya.

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LAMPIRAN A

HASIL UJI MUTU FISIK MASSA TABLET KO-PROSES

Formula	Replikasi	*Carr's Index* (%)	Persyaratan (%)	*Hausner Ratio*	Persyaratan	Kadar air (%)	Persyaratan
F1	I II III Rata-trata ± SD	19,23 19,02 20,83 19,69 ±0,98	16-20 = cukup baik (Siregar, 2010)	1,23 1,24 1,26 1,24 ± 0,015	< 1,25 (Shervington *and* Shervington, 1998)	2,86 3,51 3,00 3,12± 0,34	2-5% (Ansel, 1989)
F2	I II III Rata-trata ± SD	13,33 16,11 9,3 12,91 ± 3.42	16-20 = cukup baik (Siregar, 2010)	1,20 1,19 1,11 1,16 ± 0,049	< 1,25 (Shervington *and* Shervington, 1998)	3,96 3,12 4,8 3,96± 0,84	2-5% (Ansel, 1989)
F3	I II III Rata-rata ± SD	28,52 20 16,9 21,8± 6,01	21 – 25 = cukup (Siregar, 2010)	1,39 1,25 1,20 1,28 ± 0,098	< 1,25 (Shervington *and* Shervington, 1998)	2,56 1,96 1,8 2,10± 0,4	2-5% (Ansel, 1989)
F4	I II III Rata-rata ± SD	30,3 25,0 25,8 27,0± 2,85	21 – 25 = cukup 26 – 30 = baik (Siregar, 2010)	1,43 1,30 1,30 1,35 ± 0,078	< 1,25 (Shervington *and* Shervington, 1998)	1,97 3,72 2,54 2,74± 0,89	2-5% (Ansel, 1989)
F5	I II III Rata-rata ± SD	15,78 16,3 17,7 16,5± 0,99	16-20 = cukup baik (Siregar, 2010)	1,18 1,13 1,20 1,16 ± 0,036	< 1,25 (Shervington *and* Shervington, 1998)	3,56 2,92 3,34 3,27± 0,32	2-5% (Ansel, 1989)
F6	I II III Rata-rata ± SD	17,7 16,07 15,52 16,43 ± 1,13	16-20 = cukup baik 21-25 = cukup (Siregar, 2010)	1,22 1,19 1,28 1,22 ± 0,046	< 1,25 (Shervington *and* Shervington, 1998)	2,77 4,63 3,58 3,66 ± 0,93	2-5% (Ansel, 1989)
F7	I II III Rata-rata ± SD	25 23,41 25,4 24,6± 1,05	21 – 25 = cukup (Siregar, 2010)	1,30 1,31 1,30 1,30 ± 0,005	< 1,25 (Shervington *and* Shervington, 1998)	2,37 3,12 1,86 2,45± 0,63	2-5% (Ansel, 1989)
F8	I II III Rata-rata	13,95 12,76 14,54 13,7±	11-15 = baik	1,16 1,15 1,17 1,15 ±	< 1,25 (Shervington *and* Shervington,	4,46 4,15 1,66 3,42±	2-5% (Ansel, 1989)

	± SD	0,91	0,012	1998)	1,53

LAMPIRAN B

HASIL UJI KEKERASAN TABLET KO-PROSES

REPLIKASI I

No	Kekerasan Tablet Ko-proses (kgf)							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
1	2,5	4,1	3,3	3,5	2,2	3,1	3,1	2,5
2	3,8	4,2	3,3	3,2	3,6	3,8	2,5	2,8
3	3,7	4,2	3,5	3,6	3,2	3,5	2,7	3,1
4	2,9	4,8	3,2	2,9	2,9	2,9	3,3	2,9
5	3,8	5	2,9	3.1	2,8	3,1	3,1	2,4
6	2,2	4,2	3,3	3,1	5	3	3,8	2,4
7	4,6	5,6	3,1	3,9	2,1	3,8	2,1	2,7
8	3,2	4,4	3,3	4,1	3,5	3,2	2,2	2,3
9	2,9	5,5	3,2	2,2	2,8	2,6	3,1	3,3
10	3,6	5,7	2,9	4,5	3,1	2,1	2,5	2,8
Rata-rata	3,32	4,77	3,2	3,41	3,12	3,11	2,84	2,72
± SD	±	±	±	±	±	±	±	±
	0,72	0,64	0,18	0,65	0,82	0,52	0,53	0,33
KV	21,08	13,4	5,6	19,06	26,2	16,7	18,6	12,13

REPLIKASI II

No	Kekerasan Tablet Ko-proses (kgf)							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
1	4.3	4.2	2.7	2.6	3.6	2.3	3.6	4.1
2	3.8	4.6	2.9	2.8	3.8	3.5	2.9	3.8
3	3.2	3.6	3.1	2.2	3.1	2.1	4.2	3.6
4	4.1	3.8	3.5	2.2	2.9	2.9	4.1	2.9
5	4.4	3.2	2.8	2.1	4.0	2.8	3.6	4.1
6	4,4	4,9	2,0	2,9	4,1	2,2	3,6	4,1
7	4,6	4,2	2,9	1,9	4,3	3,7	5	4,3
8	3,9	3,2	2,1	2,4	2,8	2,0	2,2	2,8
9	4,4	4,1	3,9	2,8	3,8	2,6	3,4	3,8
10	4,8	3,1	2,8	2,1	3,3	3,2	4,8	4,1
Rata-rata	4,19	3,89	2,87	2,40	3,57	2,73	3,77	3,68
± SD	±	±	±	±	±	±	±	±
	0,46	0,62	0,57	0,35	0,52	0,59	0,83	0,48
KV	10,9	15,9	19,8	14,58	14,56	21,6	22,01	13,04

REPLIKASI III

No	Kekerasan Tablet Ko-proses (kgf)							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
1	4.3	3.1	3.2	2.8	2.6	2.3	4.4	2.1
2	4.1	2.7	3.7	2.6	2.3	3.1	3.8	2.6
3	4.1	2.7	3.5	3	2.5	2	3.3	3.1
4	5	2.6	2.5	3.5	3.3	4.4	4.4	2.5
5	3.9	3.1	2.9	2.5	2.7	4	2	2.6
6	5,4	3,1	2.7	2.1	2.1	3.6	3.6	2,8
7	4,5	2,5	4.9	2.7	3.6	2.9	3.3	3
8	4,2	2,5	3.5	3.6	2.4	3.4	4.4	2,5
9	4,2	3,0	3.3	2.5	2.2	2.3	2.2	2,0
10	4,4	2,8	3.7	2.1	2.3	2	2.8	2,3
Rata-rata	4,41	2,81	3,39	2,74	2,60	3,0	3,42	2,55
± SD	±	±	±	±	±	±	±	±
	0,45	0,25	0,67	0,51	0,48	0,84	0,88	0,35
KV	10,2	8,89	19,76	18,6	18,46	28	25,7	13,7

LAMPIRAN C

HASIL UJI KERAPUHAN TABLET KO-PROSES

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata ± SD	KV
F1	I	2.15	2,11	1,8	1,37 ± 0,73	53,2
	II	2,12	2,08	1,8		
	III	1,89	1,88	0,52		
F2	I	1,90	1,89	0.52	0,48 ± 0,46	95,8
	II	1,90	1,90	0		
	III	2,15	2,13	0,93		
F3	I	1,91	1,89	0,48	0,32 ± 0,27	84,3
	II	2,07	2,06	0,48		
	III	1,91	1,91	0		
F4	I	2,01	1,93	3,8	5,13 ± 2,75	53,6
	II	2,08	2,01	3,3		
	III	1,92	1,76	8,3		
F5	I	1,95	1,942	0,4	0,86 ± 0,5	58,1
	II	2,80	2,77	0,8		
	III	2,11	2,08	1,4		
F6	I	1,98	1,972	0,4	0,42 ± 0,04	9,52
	II	2,01	2	0,48		
	III	1,97	1,962	0,4		
F7	I	2,10	2,08	0,95	1,09 ± 0,2	18,34
	II	1,93	1,90	1,4		
	III	2,15	2,13	0,93		
F8	I	1,72	1,72	0	0,5 ± 0,48	96
	II	1,88	1,86	0,96		
	III	1,85	1,84	0,54		

LAMPIRAN D

HASIL UJI WAKTU HANCUR TABLET KO-PROSES

REPLIKASI I

No	Waktu Hancur Tablet Ko-proses (detik)							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
1	116	838	45	35	60	65	40	23
2	82	931	36	27	68	71	44	31
3	92	794	48	23	33	56	48	19
Rata-rata	96,67	854	34,67	28,33	53,67	64	44	24,33
± SD	±	±	±	±	±	±	±	±
	17,5	69,9	2,08	6,11	18,3	7,54	4	6,1
KV	18,1	8,18	5,99	21,56	34,09	11,78	9,09	25,07

REPLIKASI II

No	Waktu Hancur Tablet Ko-proses (detik)							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
1	65	342	48	23	60	56	36	38
2	81	380	36	28	48	43	48	44
3	96	188	48	25	54	37	46	41
Rata-rata	80,67	303,3	44	25,33	54	41,2	43,3	29
± SD	±	± 101	±	±	± 6	±	±	±
	15,5		6,93	2,51		9,15	6,43	5,56
KV	19,21	33,3	15,75	9,9	11,11	22,2	14,84	19,17

REPLIKASI III

No	Waktu Hancur Tablet Ko-proses (detik)							
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**
1	105	720	44	26	50	72	38	26
2	103	848	48	24	42	48	44	26
3	79	900	38	27	56	72	41	59
Rata-rata	95,67	822,67	47,6	25,67	49,3	70,8	45	37
± SD	±	±	±	±	±	±	±	±
	14,5	95,3	7,4	1,52	6,64	13,5	5,92	19,1
KV	15,15	11,58	15,54	5,92	13,46	19,06	13,15	51,6

LAMPIRAN E

HASIL UJI WAKTU PEMBASAHAN TABLET KO-PROSES

REPLIKASI I

No	Waktu Pembasahan Tablet Ko-proses (detik)							
	F1	F2	F3	F4	F5	F6	F7	F8
1	613 s	354	216	174	182	674	398	86
2	234 s	78	198	353	62	645	172	13
3	37 s	92	332	288	70	651	278	80
Rata-rata	294,6	174,6	248,6	271,7	104,67	656,7	282,6	59,6
± SD	±	±	±	±	±	±	±	±
	292	155,46	72,7	90,6	67,1	15,3	113	40,5
KV	99,1	89,03	29,24	33,33	64,1	2,3	39,98	67,9

REPLIKASI II

No	Waktu Pembasahan Tablet Ko-proses (detik)							
	F1	F2	F3	F4	F5	F6	F7	F8
1	35 s	665	570	315	32	78	58	32
2	119 s	456	808	255	40	62	66	63
3	132 s	921	399	262	72	150	46	10
Rata-rata	95,3	680,6	592,3	277,3	48	96,67	56,67	35
± SD	±	±	±	±	±	±	±	±
	52,6	232,8	205	32,8	21,2	46,87	10,1	26,6
KV	55,19	34,21	34,61	11,83	44,2	48,48	17,82	76

REPLIKASI III

No	Waktu Pembasahan Tablet Ko-proses (detik)							
	F1	F2	F3	F4	F5	F6	F7	F8
1	58 s	7200	53	21	318	35	30	54
2	68 s	3600	32	44	378	30	25	42
3	125 s	3600	21	47	180	40	34	44
Rata-rata	83,6	4800	35,3	37,3	292	35	29,6	46,7
± SD	±	±	±	±	±	± 5	±	±
	36,1	2078,4	16,2	14,2	101		4,51	6,43
KV	43,79	433,3	45,8	38,06	34,58	14,28	15,23	13,76

LAMPIRAN F

HASIL UJI RASIO ABSORPSI AIR TABLET KO-PROSES

REPLIKASI I

Formula	Wb (mg)	Wa (mg)	Rasio	Rata-rata ± SD	KV
F1	90 100 90	210 220 210	133,33 120 133,33	128,89 ± 7,697	5,97
F2	110 110 110	160 162 165	45,45 42,105 50	45,85 ± 3,9627	8,64
F3	100 100 100	190 180 210	90 80 110	93,33 ± 15,275	16,37
F4	90 90 100	180 170 190	90 125 77,78	97,59 ± 24,51	25,11
F5	110 100 110	160 230 220	45,45 130 100	91,81 ± 42,86	46,6
F6	100 90 90	200 170 180	100 88,88 100	96,29 ± 6,414	6,64
F7	100 110 110	190 180 210	90 63,63 90,91	81,51 ± 15,49	19
F8	100 90 110	300 270 260	200 200 136,36	178,78 ± 36,74	20,5

REPLIKASI II

Formula	Wb (ml gram)	Wa (ml gram)	Rasio	Rata-rata ± SD	KV
F1	100 100 100	170 180 180	70 80 80	76,667±5,77	7,52
F2	110 110 110	170 160 230	54,54 45,45 109,09	69,69±34,42	49,39
F3	90 90 100	180 170 190	100 88,89 90	92,96±6,12	6,58
F4	110 110 110	210 220 240	90,9 100 118,18	103,03±13,89	13,48
F5	100 100 110	180 190 190	80 90 72	91,81±42,86	46,68
F6	90 100 100	220 200 220	144,4 100 120	121,48±22,25	18,31
F7	110 90 100	170 190 190	54,54 111,11 90	85,21±28,58	33,85
F8	100 100 90	290 280 250	190 180 177,77	182,59±6,51	3,56

REPLIKASI III

Formula	Wb (mg)	Wa (mg)	Rasio	Rata-rata ± SD	KV
F1	87 89 90	164 165 164	88,5 85,3 82,2	85,3 ± 3,153	3,69
F2	90 95 96	176 207 174	95,5 117,8 81,25	98,21 ± 18,47	18,8
F3	100 95 91	192 184 178	92 93.68 95,6	93,76 ± 1,80	1,92
F4	94 89 93	200,5 201,5 210	113,29 116,67 98,45	109,47 ± 9,81	8,96
F5	98 100 100	196 192 219	100 92 119	103,6 ± 13,86	13,37
F6	91 97 95	198 212 216	117,5 118,5 127,3	121,1 ± 5,39	4,45
F7	100 100 100	203 197,2 203,1	103 97,2 103,1	85,21 ± 28,58	33,54
F8	110 110 110	270 260 280	145,45 136,36 154,54	145,45 ± 9,09	6,24

LAMPIRAN G

HASIL UJI MUTU FISIK MASSA TABLET KO-PROSES OPTIMUM

Formula	Replikasi	*Carr's Index* (%)	Persyaratan (%)	*Hausner Ratio*	Persyaratan
F.Opt	I	14,89	11 – 15 = Baik (Siregar, 2010)	1,17	< 1,25 (Shervington *and* Shervington, 1998)
	II	14,58		1,17	
	III	15,55		1,18	
	Rata-trata ± SD	15,01± 0,496		1,17 ± 0,006	

LAMPIRAN H

HASIL UJI KEKERASAN TABLET KO-PROSES OPTIMUM

No	Kekerasan Tablet Ko-proses (kgf)		
	I	II	III
1	2.8	2.5	2.8
2	3.2	2.8	2.8
3	2.6	2.8	2.5
4	2.5	2.5	2.6
5	2.1	2.2	2.9
6	3.4	2.5	3.2
7	3.1	2.9	3.1
8	2.6	2.4	2.9
9	2.7	2.5	2.8
10	2.9	2.8	2.7
Rata-rata	2,77	2,54	2,78
± SD	± 0,36	± 0,25	± 0,25
KV	13,33	9,84	8,99

LAMPIRAN I

HASIL UJI KERAPUHAN TABLET KO-PROSES OPTIMUM

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata ± SD	KV
I	I	2,06	2,05	0,49	0,65 ± 0,28	43,07
	II	1,98	1,97	0,5		
	III	2,03	2,01	0,98		
II	I	1,96	1,93	1,53	1,54 ± 0,55	35,7
	II	1,95	1,91	2,1		
	III	1,98	1,96	1,0		
III	I	1,90	1,89	0,52	0,523 ± 0,57	109,6
	II	1,88	1,87	0,53		
	III	1,89	1,88	0,52		

LAMPIRAN J

HASIL UJI WAKTU HANCUR TABLET KO-PROSES OPTIMUM

No	Waktu Hancur Tablet Ko-proses (detik)		
	I	II	III
1	28	51	30
2	32	48	32
3	34	52	31
4	29	55	29
5	35	49	30
Rata-rata	30,4	51	31,6
± SD	± 1,14	± 2,73	± 3,05
KV	3,75	5,35	9,65

LAMPIRAN K

HASIL UJI WAKTU PEMBASAHAN TABLET KO-PROSES OPTIMUM

No	Waktu Pembasahan Tablet Ko-proses (detik)		
	I	II	III
1	128	156	178
2	132	135	177
3	130	168	172
4	145	176	130
5	130	162	172
Rata-rata	165,8	159,4	133
± SD	± 20,2	± 15,52	± 6,85
KV	12,18	9,73	5,15

LAMPIRAN L

HASIL UJI RASIO ABSORPSI AIR TABLET KO-PROSES OPTIMUM

Formula	Wb (ml gram)	Wa (ml gram)	Rasio	Rata-rata ± SD	KV
I	90	200	122.22	131,11 ± 9,296	7,09
	90	210	133.33		
	90	210	133.33		
	90	220	144.44		
	90	200	122.22		
II	92.4	159.1	72.18615	80,01 ± 10,88	13,59
	99.6	168.8	69.47791		
	98.2	181.7	85.03055		
	91	178.7	96.37363		
	93.4	165.3	76.98073		
III	93.2	180.6	93.77682	77,89 ± 18,19	23,35
	96.3	188.9	96.15784		
	93.4	144.9	55.13919		
	92	150.3	63.36957		
	95.3	172.5	81.00735		

LAMPIRAN M

HASIL UJI MUTU FISIK MASSA TABLET ODT

Formula	Replikasi	*Carr's Index* (%)	Persyaratan (%)	*Hausner Ratio*	Persyaratan
F.Opt	I	14,12	21 – 25 = cukup (Siregar, 2010)	1,16	< 1,25 (Shervington *and* Shervington, 1998)
	II	13,85		1,16	
	III	13,46		1,15	
	Rata-trata ± SD	13,81± 0,32		1,16 ± 0,004	

LAMPIRAN N

HASIL UJI KEKERASAN TABLET ODT

No	Kekerasan Tablet Ko-proses (kp)		
	I	II	III
1	2.1	2.1	2.3
2	2.1	2.5	2.5
3	2.5	2.8	2.9
4	2.8	2.5	2.8
5	2.9	2.9	2.7
6	2.9	2.3	2.7
7	3.1	2.8	2.8
8	2.8	2.7	2.3
9	2.7	2.8	2.8
10	2.7	2.5	2.7
Rata-rata	2,65	2,61	2,64
± SD	± 0,21	± 0,25	± 0,32
KV	7,92	9,5	12,12

LAMPIRAN O

HASIL UJI KERAPUHAN TABLET ODT

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata ± SD	KV
I	I	2,06	2,05	0,48	0,64 ± 0,277	43,2
	II	2,08	2,06	0,96		
	III	2,07	2,06	0,48		
II	I	2,23	2,22	0,44	0,603 ± 0,27	44,7
	II	2,18	2,16	0,92		
	III	2,20	2,19	0,45		
III	I	2,05	2,05	0	0,33 ± 0,28	84,8
	II	2,03	2,02	0,49		
	III	2,03	2,02	0,49		

LAMPIRAN P

HASIL UJI WAKTU HANCUR TABLET ODT

No	Waktu Hancur Tablet Ko-proses (detik)		
	I	II	III
1	34	70	75
2	58	80	65
3	40	62	72
4	52	52	80
5	56	82	81
Rata-rata	48	69,2	74,6
± SD	± 10,4	± 12,5	± 6,5
KV	21,6	18,06	8,7

LAMPIRAN Q

HASIL UJI WAKTU PEMBASAHAN TABLET ODT

No	Waktu Pembasahan Tablet Ko-proses (detik)		
	I	**II**	**III**
1	178	140	118
2	130	130	123
3	154	153	125
4	172	146	132
5	152	132	131
Rata-rata	157,2	140,2	125,8
± SD	± 18,8	± 9,60	± 5,81
KV	11,9	6,84	4,61

LAMPIRAN R

HASIL UJI RASIO ABSORPSI AIR TABLET ODT

Formula	Wb (ml gram)	Wa (ml gram)	Rasio	Rata-rata ± SD	KV
I	110	172	56.36364	68,90 ± 10,14	14,72
	104	171	64.42308		
	106	195.2	84.15094		
	103,2	175.8	70.34884		
	99,8	168.9	69.23848		
II	97.6	191.7	96.41393	92,31 ± 4,47	48,42
	95.5	187.6	96.43979		
	98.4	186.7	89.73577		
	93.2	173.4	86.0515		
	99.8	192.5	92.88577		
III	100.9	208	106.1447	104,28 ± 2,32	22,24
	98.6	203.8	106.6937		
	99.6	201.7	102.51		
	100.3	205.4	104.7856		
	99.8	200.9	101.3026		

LAMPIRAN S

HASIL UJI PENETAPAN KADAR TABLET ODT

Formula	Wrata-rata (mg)	W sampel (mg)	Abs	Csampel	Wd teoritis (mg)	Wd didapat (mg)	% terlepas	Rata-rata ± SD	KV
I	105,5	100,2	0,233	7,39	10	9,726	97,26	93,65 ± 4,29	4,58
	105	99,8	0,228	7,22	10	9,48	94,8		
	104	101,2	0,225	7,11	10	8,89	88,9		
II	101,5	101,5	0,232	7,35	10	9,187	91,87	92,32± 1,98	2,15
	105	99,7	0,238	7,56	10	9,45	94,5		
	105	100,4	0,229	7,25	10	9,06	90,6		
III	99	101,3	0,234	7,42	10	9,285	92,85	91,35 ± 1,29	1,42
	100	100,2	0,229	7,25	10	9,06	90,6		
	99	100,2	0,229	7,25	10	9,06	90,6		
Generik	109	100,2	0,231	7,32	10	9,95	99,5	99,2 ± 0,64	0,64
	108,3	100,8	0,234	7,42	10	9,97	99,7		
	109,3	100,5	0,229	7,25	10	9,85	98,5		
Paten	104	100,6	0,236	7,49	10	9,69	96,8	98,86 ± 1,887	1,9
	107,3	100,8	0,235	7,46	10	9,93	99,3		
	106,3	100,2	0,238	7,56	10	10,04	100,5		

LAMPIRAN T

HASIL UJI AKURASI PRESISI PENETAPAN KADAR

Rep	Kons.	Massa (mg)	Abs	Kons (µg/ml)	Teoritis (µg/ml)	Perolehan kembali (%)	Rata-rata ± SD	KV (%)
I	100%	100,9	0,254	8,125	8,024	101	99,67 ± 1,25	1,25
II	100%	100,8	0,250	7,98	8,08	98		
III	100%	100,2	0,252	8,05	7,99	100,8		
IV	100%	102,8	0,254	8,125	8,21	98,9		
V	100%	100,9	0,249	7,95	8,04	98,8		
VI	100%	100,5	0,252	8,05	8,01	100,5		

LAMPIRAN U

HASIL UJI KESERAGAMAN KANDUNGAN TABLET ODT

Formula	W sampel (mg)	Abs	Csampel	Wd teoritis (mg)	Wd didapat (mg)	% terlepas	Rata-rata ± SD	KV
I	100	0,260	8,33	10	10,41	104,1	101,81 ± 5,32	5,22
	100	0,255	8,16	10	10,2	102		
	90	0,242	7,71	10	9,63	96,3		
	100	0,251	8,02	10	10,06	100,6		
	100	0,241	7,67	10	9,58	95,8		
	100	0,262	8,4	10	10,5	105		
	90	0,248	7,91	10	9,88	98,8		
	100	0,262	8,403	10	10,51	105,1		
	100	0,281	9,06	10	11,32	113,2		
	100	0,244	7,77	10	9,72	97,2		
II	100	0,234	7,42	10	9,28	92,8	96,08 ± 5,83`	5,9
	100	0,237	7,53	10	9,415	94,15		
	90	0,231	7,32	10	9,154	91,54		
	90	0,227	7,39	10	9,24	92,4		
	100	0,245	7,18	10	8,98	89,8		
	100	0,268	7,81	10	9,76	97,6		
	100	0,257	8,61	10	10,76	107,6		
	100	0,232	8,22	10	10,28	102,8		
	90	0,251	7,35	10	9,19	91,9		
	100	0,242	8,02	10	10,03	100,3		
III	100	0,241	7,67	10	9,587	95,87	98,65± 5,53	5,6
	100	0,231	7,32	10	9.150	91,5		
	100	0,251	8,02	10	10,02	100,2		
	90	0,234	7,42	10	9,275	92,75		
	100	0,238	7,56	10	9,450	94,5		
	100	0,256	8,19	10	10,23	102,3		
	100	0,245	7,81	10	9,76	97,6		
	90	0,272	8,75	10	10,93	109,3		
	100	0,246	7,84	10	9,8	98		
	90	0,261	8,36	10	10,45	104,5		

LAMPIRAN V

HASIL UJI DISOLUSI SEDIAAN TABLET ODT

REPLIKASI I

Formula	T (menit)	Abs	Csampel	W sampel	% Wt	AUC	Jumlah AUC
I	1	0,195	6,06	5,45	58,23	2.727	237,85
	2	0,252	8,055	7,24	77,42	6.35175	
	4	0,305	9,902	8,91	95,16	16.1613	
	6	0,278	8,96	8,06	86,10	16.9758	
	8	0,296	9,58	8,622	92,01	16.686	
	10	0,283	9,13	8,217	87,77	16.839	
	15	0,275	8,85	7,965	85,05	40.455	
	20	0,294	9,52	8,568	91,48	41.3325	
	25	0,270	8,68	7,812	83,42	40.95	
	30	0,274	8,82	7,938	84,76	39.375	
II	1	0,085	2,23	2,007	21.4	1.0035	237,71
	2	0,262	8,41	7,569	80.8	4.788	
	4	0,286	9,24	8,316	88.79	15.885	
	6	0,305	9,90	8,91	95.14	17.226	
	8	0,309	10,04	9,036	96.48	17.946	
	10	0,287	9,275	8,347	89.13	17.3835	
	15	0,287	9,275	8,347	89.13	41.7375	
	20	0,281	9,066	8,1594	87.13	41.26725	
	25	0,278	8,96	8,064	86.11	40.5585	
	30	0,273	8,78	7,902	84.3	39.915	
III	1	0,014	2,09	1,881	20,08	0.9405	225,42
	2	0,247	7,88	7,092	75,72	4.4865	
	4	0,254	8,125	7,313	78,08	14.4045	
	6	0,279	8,99	8.091	86,39	15.4035	
	8	0,278	8,96	8.064	86,10	16.155	
	10	0,273	8,78	7.902	84,37	15.966	
	15	0,277	8,92	8.028	85,72	39.825	
	20	0,275	8,85	7.965	85,05	39.9825	
	25	0,268	8,61	7.749	82,74	39.285	
	30	0,271	8,71	7.839	83,70	38.97	

REPLIKASI II

Formula	T (menit)	Abs	Csampel	W sampel	% Wt	AUC	Jumlah AUC
I	1	0,195	6,06	5,45	65,64	2.727	210,0
	2	0,247	7,88	7,09	85,35	6.273	
	4	0,256	8,19	7,37	88,71	14.463	
	6	0,262	8,40	7,56	90,98	14.931	
	8	0,246	7,84	7,056	84,92	14.616	
	10	0,257	8,22	7,39	89,03	14.454	
	15	0,25	7,98	7,18	86,43	36.45	
	20	0,242	7,706	6,93	83,47	35.2935	
	25	0,248	7,92	7,13	85,78	35.1585	
	30	0,248	7,92	7,13	85,78	35.64	
II	1	0,183	5,65	5,085	61,2	2.5425	210,006
	2	0,246	7,84	7,056	84,9	6.0705	
	4	0,247	7,88	7,092	85,35	14.148	
	6	0,247	7,88	7,092	85,35	14.184	
	8	0,243	7,74	6,966	83,83	14.058	
	10	0,251	8,02	7,218	86,87	14.184	
	15	0,258	8,26	7,434	89,47	36.63	
	20	0,253	8,09	7,281	87,62	36.7875	
	25	0,248	7,91	7,119	85,68	36	
	30	0,246	7,85	7,065	85,03	35.46	
III	1	0,183	5,65	5,085	61,2	2.5425	209,71
	2	0,246	7,84	7,056	84,9	6.0705	
	4	0,244	7,77	6,993	84,16	14.049	
	6	0,257	8,22	7,398	89,03	14.391	
	8	0,252	8,05	7,245	87,19	14.643	
	10	0,262	8,40	7,56	90,98	14.805	
	15	0,253	8,09	7,281	87,63	37.1025	
	20	0,249	7,95	7,155	86,11	36.09	
	25	0,240	7,63	6,867	82,64	35.055	
	30	0,248	7,91	7,119	85,68	34.965	

REPLIKASI III

Formula	T (menit)	Abs	Csampel	W sampel	% Wt	AUC	Jumlah AUC
I	1	0,161	4,88	4,392	47,69	2.196	208,64
	2	0,244	7,78	7,002	76,04	5.697	
	4	0,273	8,78	7,902	85,81	14.904	
	6	0,251	8,02	7,218	78,38	15.12	
	8	0,249	7,95	7,155	77,7	14.373	
	10	0,244	7,78	7,002	76,04	14.157	
	15	0,245	7,81	7,029	76,33	35.0775	
	20	0,248	7,91	7,119	77,31	35.37	
	25	0,252	8,05	7,245	78,68	35.91	
	30	0,247	7,88	7,092	77,02	35.8425	
II	1	0,209	6,55	5,895	64,02	2.9475	222,03
	2	0,247	7,88	7,092	77,01	6.4935	
	4	0,255	8,16	7,344	79,76	14.436	
	6	0,266	8,54	7,686	83,47	15.03	
	8	0,275	8,85	7,965	86,5	15.651	
	10	0,266	8,54	7,686	83,47	15.651	
	15	0,268	8,61	7,749	84,15	38.5875	
	20	0,260	8,33	7,497	81,41	38.115	
	25	0,260	8,33	7,497	81,41	37.485	
	30	0,262	8,40	7,56	82,01	37.6425	
III	1	0,181	5,58	5,022	54,5	2.511	220,72
	2	0,249	7,95	7,155	77,7	6.0885	
	4	0,261	8,36	7,524	81,7	14.679	
	6	0,273	8,78	7,902	85,8	15.426	
	8	0,272	8,75	7,875	85,5	15.777	
	10	0,268	8,61	7,749	84,2	15.624	
	15	0,260	8,33	7,497	81,4	38.115	
	20	0,258	8,26	7,434	80,7	37.3275	
	25	0,261	8,36	7,524	81,7	37.395	
	30	0,263	8,43	7,287	82,3	37.7775	

PRODUK DAGANG REPLIKASI I

Formula	T (menit)	Abs	Csampel	W sampel	% Wt	AUC	Jumlah AUC
Generik	1	0,058	1,29	1,17	12.76	0,58	194,72
	2	0,139	4,12	3,71	40.48	2,44	
	4	0,202	6,31	5,68	61.98	9,39	
	6	0,201	6,28	5,65	61.66	11,33	
	8	0,226	7,15	6,43	70.17	12,08	
	10	0,294	9,52	8,57	93.52	15,00	
	15	0,238	7,57	6,81	74.32	38,45	
	20	0,246	7,85	7,06	77.04	34,68	
	25	0,246	7,85	7,06	77.04	35,31	
	30	0,248	7,92	7,12	77.7	35,47	
Paten	1	0,079	2,03	1,82	19.42	0,91	176,9
	2	0,124	3,59	3,24	34.57	2,53	
	4	0,168	5,13	4,62	49.3	7,85	
	6	0,228	7,22	6,50	69.36	11,11	
	8	0,205	6,42	5,78	61.67	12,27	
	10	0,206	6,45	5,81	61.99	11,58	
	15	0,230	7,29	6,56	70	30,92	
	20	0,230	7,29	6,56	70	32,80	
	25	0,232	7,36	6,62	70.64	32,96	
	30	0,244	7,78	7,00	74.69	34,05	

PRODUK DAGANG REPLIKASI II

Formula	T (menit)	Abs	Csampel	W sampel	% Wt	AUC	Jumlah AUC
Generik	1	0,053	1,12	1,01	11,02	0,50	190,8
	2	0,119	3,42	3,08	33,61	2,04	
	4	0,184	5,69	5,12	55,87	8,20	
	6	0,228	7,22	6,50	70,93	11,61	
	8	0,214	6,73	6,06	66,13	12,56	
	10	0,265	8,51	7,66	83,59	13,72	
	15	0,228	7,22	6,50	70,93	35,39	
	20	0,251	8,02	7,22	78,79	34,29	
	25	0,250	7,99	7,19	78,46	36,01	
	30	0,258	8,26	7,44	81,19	36,56	
Paten	1	0,077	1,96	1,76	18,78	0,88	179,5
	2	0,144	4,29	3,86	41,19	2,81	
	4	0,171	5,23	4,71	50,26	8,57	
	6	0,198	6,17	5,56	59,33	10,27	
	8	0,217	6,84	6,15	65,62	11,71	
	10	0,226	7,15	6,43	68,61	12,59	
	15	0,232	7,36	6,62	70,64	32,64	
	20	0,241	7,67	6,90	73,63	33,82	
	25	0,225	7,11	6,40	68,29	33,27	
	30	0,237	7,53	6,78	72,35	32,96	

PRODUK DAGANG REPLIKASI III

Formula	T (menit)	Abs	Csampel	W sampel	% Wt	AUC	Jumlah AUC
Generik	1	0,057	1,26	1,13	12,33	0,57	191,45
	2	0,125	3,63	3,27	35,68	2,20	
	4	0,209	6,56	5,90	64,39	9,17	
	6	0,221	6,98	6,28	68,53	12,18	
	8	0,224	7,08	6,37	69,51	12,65	
	10	0,219	6,91	6,21	67,77	12,59	
	15	0,248	7,92	7,12	77,70	33,35	
	20	0,259	8,30	7,47	81,52	36,48	
	25	0,251	8,02	7,22	78,79	36,72	
	30	0,244	7,78	7,00	76,39	35,54	
Paten	1	0,076	1,92	1,73	18,46	0,86	179,31
	2	0,121	3,49	3,14	33,51	2,44	
	4	0,188	5,83	5,24	55,91	8,38	
	6	0,210	6,59	5,93	63,28	11,18	
	8	0,216	6,80	6,12	65,31	12,05	
	10	0,219	6,91	6,21	66,26	12,34	
	15	0,226	7,15	6,43	68,61	31,62	
	20	0,238	7,57	6,81	72,67	33,11	
	25	0,231	7,32	6,59	70,32	33,51	
	30	0,242	7,71	6,94	74,05	33,82	

LAMPIRAN W

PERHITUNGAN KURVA BAKU

Replikasi	$C_{(ppm)}$	Abs	X^2	Y^2	XY
	2,04	0,081	4,1616	0,0066	0,16524
	4,08	0,141	16,6464	0,0199	0,57528
	6,12	0,191	37,4544	0,0365	1,16892
I	8,16	0,253	66,5856	0,0640	2,06448
	10,2	0,314	104,0400	0,0986	3,2028
	12,24	0,374	149,8176	0,1399	4,57776
	14,28	0,431	203,9184	0,1858	6,15468
Total			582,6240	0,5512	17,9092
	2,016	0,078	4,0643	0,0061	0,157248
	4,032	0,139	16,2570	0,0193	0,560448
	6,048	0,204	36,5783	0,0416	1,233792
II	8,064	0,270	65,0281	0,0729	2,17728
	10,08	0,327	101,6064	0,1069	3,29616
	12,096	0,386	146,3132	0,1490	4,669056
	14,112	0,442	199,1485	0,1954	6,237504
Total			568,9958	0,5912	18,3315
	2,016	0,078	4,0643	0,0061	0,157248
	4,032	0,135	16,2570	0,0182	0,54432
	6,048	0,185	36,5783	0,0342	1,11888
III	8,064	0,252	65,0281	0,0635	2,032128
	10,08	0,307	101,6064	0,0942	3,09456
	12,096	0,359	146,3132	0,1289	4,342464
	14,112	0,422	199,1485	0,1781	5,955264
Total			568,9958	0,5233	17,2449

Persamaan regresi :

Replikasi I : $y = 0,0287x + 0,0209$ **(**$r_{hitung} / r_{tabel} = 0,9997/ 0,754$)

Replikasi II : $y = 0,0303x + 0,0196$ **(**$r_{hitung} / r_{tabel} = 0,9993/ 0,754$)

Replikasi III : $y = 0,0284x + 0,0194$ **(**$r_{hitung} / r_{tabel} = 0,9996/ 0,754$)

	Jumlah X^2	Jumlah XY	Jumlah Y^2	n	Residual SS	Residual DF
Pers. Reg. I	582,984	17,909	0,551	7	$8{,}4377 \cdot 10^{-4}$	5
Pers. Reg. II	568,996	18,331	0,591	7	$4{,}4126 \cdot 10^{-4}$	5
Pers. Reg. III	568,996	17,245	0,523	7	$3{,}4250 \cdot 10^{-4}$	5
Pooled reg.					$16{,}2753 \cdot 10^{-4}$	15
Common reg.	1720,976	53,485	1,665		$2{,}7770 \cdot 10^{-3}$	17

$$SS1 = \sum (Y^2) - \frac{(XY)2}{(Y2)} = 0{,}551 - \frac{(17{,}909)2}{582{,}984} = 8{,}4377 \cdot 10^{-4}$$

$$SS2 = \sum (Y^2) - \frac{(XY)2}{(Y2)} = 0{,}591 - \frac{(18{,}33)2}{568{,}996} = 4{,}4126 \cdot 10^{-4}$$

$$SS3 = (Y^2) - \frac{(XY)2}{(Y2)} = 0{,}523 - \frac{(17{,}245)2}{568{,}996} = 3{,}4259 \cdot 10^{-4}$$

$$SSe = \text{Common regression} = 1{,}665 - \frac{(53{,}486)2}{1720{,}976} = 2{,}777 \cdot 10^{-4}$$

$$F_{hitung} = \frac{2{,}777 \cdot 10^{-4} - 16{,}2753 \cdot 10^{-4}}{5 - 1} \times \frac{15}{16{,}2753 \cdot 10^{-4}}$$

$$= \frac{2{,}777 \cdot 10^{-4} - 16{,}2753 \cdot 10^{-4}}{1{,}08502 \cdot 10^{-4}}$$

$$= 2{,}6485 < F_{(0{,}05)\,(2,15)} = 3{,}68$$

LAMPIRAN X

HASIL UJI AKURASI PRESISI DISOLUSI

Rep	Kons.	Massa (mg)	Abs	Kons (µg/ml)	Teoritis (µg/ml)	Perolehan kembali (%)	Rata-rata ± SD	KV (%)
I	25%	51,59	0,102	2,82	2,86	98,6	99,4	
II	25%	51,5	0,098	2,79	2,75	101,45	±	1,78
III	25%	51,41	0,100	2,75	2,81	98,2	1,77	
I	67,5%	53,1	0,231	7,32	7,36	99,5	99,8	
II	67,5%	54,2	0,232	7,35	7,49	98,2	±	1,8
III	67,5%	53,8	0,239	7,6	7,52	101,9	1,87	
I	110%	56,81	0,378	12,44	12,41	100,2	100,11	
II	110%	56,72	0,372	12,23	12,34	99,1	±	0,95
III	110%	56,12	0,376	12,37	12,25	101,03	0,96	

LAMPIRAN Y

HASIL UJI STABILITAS KEKERASAN TABLET KO-PROSES OPTIMUM

No	Kekerasan Tablet Ko-proses (kgf)		
	I	II	III
1	2,8	2,0	2,5
2	3,0	2,0	2,6
3	2,5	2,8	2,4
4	2,5	2,5	2,7
5	2,3	2,3	2,6
6	2,1	2,5	2,4
7	2,6	2,6	2,5
8	2,8	2,4	2,5
9	2,5	2,6	2,4
10	2,3	2,3	2,4
Rata-rata	2,54	2,40	2,5
± SD	± 0,27	± 0,25	± 0,105
KV	10,6	10,4	4,2

LAMPIRAN Z

HASIL STABILITAS UJI KERAPUHAN TABLET KO-PROSES OPTIMUM

Batch	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata ± SD	KV
I	I	1,853	1,849	0,21	0,26 ± 0,05	19,2
	II	2,842	1,836	0,325		
	III	1,831	1,826	0,27		
II	I	1,866	1,848	0,96	0,78 ± 0,15	19,2
	II	1,852	1,839	0,7		
	III	1,864	1,851	0,69		
III	I	1,871	1,858	0,69	0,62 ± 0,06	9,6
	II	1,862	1,851	0,59		
	III	1,873	1,862	0,58		

LAMPIRAN AA

HASIL STABILITAS UJI WAKTU HANCUR TABLET KO-PROSES OPTIMUM

No	Waktu Hancur Tablet Ko-proses (detik)		
	F1	F2	F3
1			
2	31	59	30
3	40	62	45
4	42	58	51
5	43	55	35
	35	63	42
Rata-rata	35,16	59,4	40,6
± SD	± 8,7	± 2,21	± 8,26
KV	23,8	3,7	20,3

LAMPIRAN AB

HASIL UJI STABILITAS WAKTU PEMBASAHAN TABLET KO-PROSES OPTIMUM

No	Waktu Pembasahan Tablet Ko-proses (detik)		
	F1	F2	F3
1	100	115	96
2	63	101	118
3	116	98	106
4	115	116	116
5	108	109	108
Rata-rata	100,4	107,8	108,8
± SD	± 21,8	± 8,105	±8,78
KV	21,7	7,52	8,06

LAMPIRAN AC

HASIL UJI STABILITAS RATIO ABSORBSI TABLET KO-PROSES OPTIMUM

Formula	Wb (ml gram)	Wa (ml gram)	Rasio	Rata-rata ± SD	KV
I	93,3	215,5	130,5	119,02 ± 23,9	20,08
	90,3	197	118,2		
	93,6	166,6	77,99		
	90,3	208,2	130,56		
	92,8	220,7	137,82		
II	89,3	163,4	82,9	124,98 ± 40,7	32,5
	88,8	234,1	163,62		
	94,1	168,8	79,3		
	93,7	226,7	141,94		
	95,3	244,9	156,97		
III	93,3	161,6	73,02	67,06 ± 5,16	7,69
	91,7	149,9	63,46		
	91,4	146,7	60,50		
	94,1	160,6	70,66		
	92,9	155,6	67,49		

LAMPIRAN AD

HASIL UJI STABILITAS KEKERASAN TABLET ODT

No	Kekerasan Tablet Ko-proses (kgf)		
	I	II	III
1	2,2	2,8	2,8
2	2,8	2,4	2,5
3	2,4	2,2	2,2
4	2,3	2,0	2,4
5	2,5	2,1	2,7
6	2,8	2,8	2,5
7	2,3	2,6	2,1
8	2,5	2,4	2,5
9	2,4	2,5	2,3
10	2,9	2,3	2,8
Rata-rata	2,51	2,41	2,48
± SD	± 0,24	± 0,27	± 0,23
KV	9,56	11,2	9,27

LAMPIRAN AE

HASIL STABILITAS UJI KERAPUHAN TABLET ODT

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata ± SD	KV
I	I	2,088	2,071	0,814	0,58 ± 0,21	36,2
	II	1,993	1,982	0,55		
	III	2,051	2,043	0,39		
II	I	1,910	1,905	0,26	0,207 ± 0,05	24,15
	II	1,923	1,920	0,156		
	III	1,925	1,921	0,207		
III	I	1,975	1,968	0,35	0,405 ± 0,05	12,34
	II	1,978	1,969	0,455		
	III	1,969	1,961	0,41		

LAMPIRAN AF

HASIL STABILITAS UJI WAKTU HANCUR TABLET ODT

No	Waktu Hancur Tablet Ko-proses (detik)		
	F1	F2	F3
1			
2	58	72	70
3	63	85	58
4	49	70	78
5	56	68	62
	65	51	68
Rata-rata	58,2	69,2	67,2
± SD	± 6,301	± 12,2	± 7,69
KV	10,8	17,6	11,44

LAMPIRAN AG

HASIL UJI STABILITAS WAKTU PEMBASAHAN TABLET ODT

No	Waktu Pembasahan Tablet Ko-proses (detik)		
	F1	**F2**	**F3**
1	118	125	90
2	98	119	130
3	102	108	119
4	121	123	125
5	115	92	118
Rata-rata	110,8	113,4	116,4
± SD	± 10,18	± 13,64	± 15,53
KV	9,18	12,02	13,34

LAMPIRAN AH

HASIL UJI STABILITAS RATIO ABSORBSI TABLET ODT

Formula	Wb (ml gram)	Wa (ml gram)	Rasio	Rata-rata ± SD	KV
I	102,8	202,2	96,69	84,47 ± 14,54	17,21
	109,3	219,7	101,1		
	106,6	175,9	65,01		
	107,3	191,8	78,75		
	106,5	192,7	80,93		
II	96,1	235,8	145,36	134,47 ± 12,07	8,97
	97,9	229	133,91		
	98,8	214,7	117,31		
	96,8	222	129,34		
	98	241,5	146,42		
III	100,4	217,8	116,93	116,6 ± 18,51	15,87
	93,8	218,1	132,52		
	95,3	215,5	126,12		
	96,5	214,8	122,59		
	100,2	185,5	85,12		

LAMPIRAN AI

HASIL UJI KERAGAMAN BOBOT TABLET ODT

Formula	W	Wrata-rata ± SD	% penyimpangan
I	105,,3	103.13 ± 3,17	2,11
	98,3		4,6
	101,6		1,48
	103,3		0,16
	99,8		3,23
	107,2		3,94
	101,3		1,77
	101,6		1,48
	98,7		4,29
	105,3		2,11
	102,8		0,32
	101,6		1,48
	105,6		2,39
	101,3		1,11
	99,2		3,81
	100,4		2,65
	102,8		0,32
	109,3		5,97
	106,6		3,36
	107,3		4,04
II	96,1	101,12 ± 2,85	4,96
	103,4		2,24
	101,5		0,37
	97,9		3,18
	106,3		5,11
	101,2		0,07
	99,3		1,80
	102,6		1,45
	98,8		2,29
	96,8		4,27
	104,3		3,13
	101,2		0,07
	98		3,09
	100,8		0,32
	101,5		0,37
	99,3		1,80
	106,3		5,11
	103,4		2,2
	101,2		0,07
	102,6		1,45

III	99,3	100,18 ± 2,72	0,87
	100,5		0,32
	101,4		1,22
	101,7		1,52
	105,3		5,11
	101,2		1,02
	103,4		3,21
	98,6		1,57
	100,4		0,22
	93,8		6,36
	95,3		4,86
	96,5		3,66
	101,8		1,62
	99,4		0,77
	98,3		1,87
	100,2		0,02
	102,3		2,12
	101,6		1,42
	102,3		2,12
	100,2		0,02

LAMPIRAN AJ

HASIL UJI STATISTIK ANAVA CARR'S INDEX MASSA GRANUL KO-PROSES

Descriptives

Cars

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
F1	3	19.6933	.98997	.57156	17.2341	22.1525	19.02	20.83
F2	3	12.9133	3.42407	1.97689	4.4075	21.4192	9.30	16.11
F3	3	21.8067	6.01699	3.47391	6.8596	36.7537	16.90	28.52
F4	3	27.0333	2.85715	1.64958	19.9358	34.1309	25.00	30.30
F5	3	16.3333	1.35031	.77960	12.9790	19.6877	15.00	17.70
F6	3	16.4300	1.13371	.65455	13.6137	19.2463	15.52	17.70
F7	3	24.6033	1.05263	.60774	21.9885	27.2182	23.41	25.40
F8	3	13.7500	.90670	.52348	11.4976	16.0024	12.76	14.54
Total	24	19.0704	5.40511	1.10331	16.7880	21.3528	9.30	30.30

Test of Homogeneity of Variances

Cars

Levene Statistic	df1	df2	Sig.
3.749	7	16	.014

ANOVA

Cars

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	547.729	7	78.247	10.078	.000
Within Groups	124.221	16	7.764		
Total	671.950	23			

F_{hitung} (10,078) > $F_{tabel\ (0,05)\ (7,16)}$ (2,66) maka H_0 ditolak dan ada perbedaan yang bermakna antar formula. *Carr's Index* massa granul ko-proses dari kedelapan formula menunjukkan ada perbedaan yang signifikan antar formula.

Multiple Comparisons

Cars

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
F1	F2	6.78000	2.27505	.120	-1.0966	14.6566
	F3	-2.11333	2.27505	.978	-9.9899	5.7632
	F4	-7.34000	2.27505	.077	-15.2166	.5366
	F5	3.36000	2.27505	.809	-4.5166	11.2366
	F6	3.26333	2.27505	.829	-4.6132	11.1399
	F7	-4.91000	2.27505	.422	-12.7866	2.9666
	F8	5.94333	2.27505	.221	-1.9332	13.8199
F2	F1	-6.78000	2.27505	.120	-14.6566	1.0966
	F3	-8.89333*	2.27505	.021	-16.7699	-1.0168
	F4	-14.12000*	2.27505	.000	-21.9966	-6.2434
	F5	-3.42000	2.27505	.795	-11.2966	4.4566
	F6	-3.51667	2.27505	.773	-11.3932	4.3599
	F7	-11.69000*	2.27505	.002	-19.5666	-3.8134
	F8	-.83667	2.27505	1.000	-8.7132	7.0399
F3	F1	2.11333	2.27505	.978	-5.7632	9.9899
	F2	8.89333*	2.27505	.021	1.0168	16.7699
	F4	-5.22667	2.27505	.351	-13.1032	2.6499

	F5	5.47333	2.27505	.302	-2.4032	13.3499
	F6	5.37667	2.27505	.320	-2.4999	13.2532
	F7	-2.79667	2.27505	.911	-10.6732	5.0799
	F8	8.05667*	2.27505	.043	.1801	15.9332
F4	F1	7.34000	2.27505	.077	-.5366	15.2166
	F2	14.12000*	2.27505	.000	6.2434	21.9966
	F3	5.22667	2.27505	.351	-2.6499	13.1032
	F5	10.70000*	2.27505	.005	2.8234	18.5766
	F6	10.60333*	2.27505	.005	2.7268	18.4799
	F7	2.43000	2.27505	.955	-5.4466	10.3066
	F8	13.28333*	2.27505	.001	5.4068	21.1599
F5	F1	-3.36000	2.27505	.809	-11.2366	4.5166
	F2	3.42000	2.27505	.795	-4.4566	11.2966
	F3	-5.47333	2.27505	.302	-13.3499	2.4032
	F4	-10.70000*	2.27505	.005	-18.5766	-2.8234
	F6	-.09667	2.27505	1.000	-7.9732	7.7799
	F7	-8.27000*	2.27505	.036	-16.1466	-.3934
	F8	2.58333	2.27505	.939	-5.2932	10.4599
F6	F1	-3.26333	2.27505	.829	-11.1399	4.6132
	F2	3.51667	2.27505	.773	-4.3599	11.3932
	F3	-5.37667	2.27505	.320	-13.2532	2.4999
	F4	-10.60333*	2.27505	.005	-18.4799	-2.7268

	F5	.09667	2.27505	1.000	-7.7799	7.9732
	F7	-8.17333*	2.27505	.039	-16.0499	-.2968
	F8	2.68000	2.27505	.927	-5.1966	10.5566
F7	F1	4.91000	2.27505	.422	-2.9666	12.7866
	F2	11.69000*	2.27505	.002	3.8134	19.5666
	F3	2.79667	2.27505	.911	-5.0799	10.6732
	F4	-2.43000	2.27505	.955	-10.3066	5.4466
	F5	8.27000*	2.27505	.036	.3934	16.1466
	F6	8.17333*	2.27505	.039	.2968	16.0499
	F8	10.85333*	2.27505	.004	2.9768	18.7299
F8	F1	-5.94333	2.27505	.221	-13.8199	1.9332
	F2	.83667	2.27505	1.000	-7.0399	8.7132
	F3	-8.05667*	2.27505	.043	-15.9332	-.1801
	F4	-13.28333*	2.27505	.001	-21.1599	-5.4068
	F5	-2.58333	2.27505	.939	-10.4599	5.2932
	F6	-2.68000	2.27505	.927	-10.5566	5.1966
	F7	-10.85333*	2.27505	.004	-18.7299	-2.9768

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

Hasil Uji HSD Tukey dari kedelapan formula , diperoleh nilai Sig.< α (0,05) sehingga Ho ditolak (*), berarti rata-rata kerapuhan tablet ko-proses dari kedelapan formula menunjukkan bahwa ada perbedaan yang signifikan antar formula yaitu formula 2 dengan form,ula 3,4, dan 7 ; formula 3

berbeda signifikan dengan formula 2 dan 8; formula 4 dan 7 menunjukan perbedaan yang signifikan terhadap formula 2,5, 6, dan 8 ; formula 5 dan 6 menunjukan perbedaan yang signifikan dengan formula 4 dan 7; formula 8 menunjukan perbedaan yang signifikan dengan formula 3,4, dan 7.

LAMPIRAN AK

HASIL UJI STATISTIK ANAVA HAUSNER RATIO MASSA GRANUL KO-PROSES

Descriptives

Hausner

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
F1	3	1.2433	.01528	.00882	1.2054	1.2813	1.23	1.26
F2	3	1.1667	.04933	.02848	1.0441	1.2892	1.11	1.20
F3	3	1.2800	.09849	.05686	1.0353	1.5247	1.20	1.39
F4	3	1.3433	.07506	.04333	1.1569	1.5298	1.30	1.43
F5	3	1.1700	.03606	.02082	1.0804	1.2596	1.13	1.20
F6	3	1.2300	.04583	.02646	1.1162	1.3438	1.19	1.28
F7	3	1.3033	.00577	.00333	1.2890	1.3177	1.30	1.31
F8	3	1.1600	.01000	.00577	1.1352	1.1848	1.15	1.17
Total	24	1.2371	.07860	.01604	1.2039	1.2703	1.11	1.43

Test of Homogeneity of Variances

Hausner

Levene Statistic	df1	df2	Sig.

Test of Homogeneity of Variances

Hausner

Levene Statistic	df1	df2	Sig.
4.432	7	16	.007

ANOVA

Hausner

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.099	7	.014	5.256	.003
Within Groups	.043	16	.003		
Total	.142	23			

F_{hitung} (5,256) > $F_{tabel\ (0,05)\ (7,16)}$ (2,66) maka H_0 ditolak dan ada perbedaan yang bermakna antar formula. *Hausner ratio* massa granul ko-proses dari kedelapan formula menunjukkan ada perbedaan yang signifikan antar formula.

Multiple Comparisons

Hausner

Tukey HSD

(I) formula	(J) formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	.07667	.04236	.623	-.0700	.2233
	F3	-.03667	.04236	.985	-.1833	.1100
	F4	-.10000	.04236	.322	-.2467	.0467
	F5	.07333	.04236	.669	-.0733	.2200
	F6	.01333	.04236	1.000	-.1333	.1600
	F7	-.06000	.04236	.837	-.2067	.0867
	F8	.08333	.04236	.530	-.0633	.2300
F2	F1	-.07667	.04236	.623	-.2233	.0700
	F3	-.11333	.04236	.200	-.2600	.0333
	F4	-.17667*	.04236	.013	-.3233	-.0300
	F5	-.00333	.04236	1.000	-.1500	.1433
	F6	-.06333	.04236	.799	-.2100	.0833
	F7	-.13667	.04236	.077	-.2833	.0100
	F8	.00667	.04236	1.000	-.1400	.1533
F3	F1	.03667	.04236	.985	-.1100	.1833
	F2	.11333	.04236	.200	-.0333	.2600
	F4	-.06333	.04236	.799	-.2100	.0833
	F5	.11000	.04236	.226	-.0367	.2567

	F6	.05000	.04236	.926	-.0967	.1967
	F7	-.02333	.04236	.999	-.1700	.1233
	F8	.12000	.04236	.154	-.0267	.2667
F4	F1	.10000	.04236	.322	-.0467	.2467
	F2	.17667*	.04236	.013	.0300	.3233
	F3	.06333	.04236	.799	-.0833	.2100
	F5	.17333*	.04236	.015	.0267	.3200
	F6	.11333	.04236	.200	-.0333	.2600
	F7	.04000	.04236	.976	-.1067	.1867
	F8	.18333*	.04236	.009	.0367	.3300
F5	F1	-.07333	.04236	.669	-.2200	.0733
	F2	.00333	.04236	1.000	-.1433	.1500
	F3	-.11000	.04236	.226	-.2567	.0367
	F4	-.17333*	.04236	.015	-.3200	-.0267
	F6	-.06000	.04236	.837	-.2067	.0867
	F7	-.13333	.04236	.089	-.2800	.0133
	F8	.01000	.04236	1.000	-.1367	.1567
F6	F1	-.01333	.04236	1.000	-.1600	.1333
	F2	.06333	.04236	.799	-.0833	.2100
	F3	-.05000	.04236	.926	-.1967	.0967
	F4	-.11333	.04236	.200	-.2600	.0333
	F5	.06000	.04236	.837	-.0867	.2067

	F7	-.07333	.04236	.669	-.2200	.0733
	F8	.07000	.04236	.715	-.0767	.2167
F7	F1	.06000	.04236	.837	-.0867	.2067
	F2	.13667	.04236	.077	-.0100	.2833
	F3	.02333	.04236	.999	-.1233	.1700
	F4	-.04000	.04236	.976	-.1867	.1067
	F5	.13333	.04236	.089	-.0133	.2800
	F6	.07333	.04236	.669	-.0733	.2200
	F8	.14333	.04236	.058	-.0033	.2900
F8	F1	-.08333	.04236	.530	-.2300	.0633
	F2	-.00667	.04236	1.000	-.1533	.1400
	F3	-.12000	.04236	.154	-.2667	.0267
	F4	-.18333*	.04236	.009	-.3300	-.0367
	F5	-.01000	.04236	1.000	-.1567	.1367
	F6	-.07000	.04236	.715	-.2167	.0767
	F7	-.14333	.04236	.058	-.2900	.0033

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

Hasil Uji HSD Tukey dari kedelapan formula , diperoleh nilai Sig.< α (0,05) sehingga Ho ditolak (*), berarti rata-rata kerapuhan tablet ko-proses dari kedelapan formula menunjukkan bahwa ada perbedaan yang signifikan antar formula yaitu formula 2 dengan form,ula 4 ; formula 4 berbeda signifikan dengan formula 2,5, dan 8; formula 5 menunjukan perbedaan

yang signifikan terhadap formula 8 ; formula 8 menunjukan adanya perbedaan yang signifikan dengan formula 4.

LAMPIRAN AL

HASIL UJI STATISTIK ANAVA TABLET KO-PROSES KEKERASAN

Descriptives

Kekerasan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1	3	3.9733	.57640	.33278	2.5415	5.4052	3.32	4.41
F2	3	3.8233	.98170	.56678	1.3847	6.2620	2.81	4.77
F3	3	3.1533	.26312	.15191	2.4997	3.8070	2.87	3.39
F4	3	2.8500	.51391	.29670	1.5734	4.1266	2.40	3.41
F5	3	3.0967	.48542	.28026	1.8908	4.3025	2.60	3.57
F6	3	2.9467	.19553	.11289	2.4609	3.4324	2.73	3.11
F7	3	3.3433	.46972	.27119	2.1765	4.5102	2.84	3.77
F8	3	2.9833	.60929	.35177	1.4698	4.4969	2.55	3.68
Total	24	3.2713	.61252	.12503	3.0126	3.5299	2.40	4.77

Test of Homogeneity of Variances

Kekerasan

Levene Statistic	df1	df2	Sig.
1.150	7	16	.382

ANOVA

Kekerasan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.639	7	.520	1.667	.188
Within Groups	4.990	16	.312		
Total	8.629	23			

F_{hitung} (1,667) < $F_{tabel\ (0,05)\ (7,16)}$ (2,66), maka H_0 diterima dan tidak ada perbedaan bermakna antar formula. Rata-rata kekerasan tablet ko-proses dari kedelapan formula menunjukkan tidak adanya perbedaan yang signifikan antar formula.

Multiple Comparisons

Kekerasan
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	.15000	.45598	1.000	-1.4287	1.7287
	F3	.82000	.45598	.630	-.7587	2.3987
	F4	1.12333	.45598	.277	-.4553	2.7020
	F5	.87667	.45598	.556	-.7020	2.4553
	F6	1.02667	.45598	.374	-.5520	2.6053
	F7	.63000	.45598	.853	-.9487	2.2087
	F8	.99000	.45598	.415	-.5887	2.5687
F2	F1	-.15000	.45598	1.000	-1.7287	1.4287
	F3	.67000	.45598	.812	-.9087	2.2487
	F4	.97333	.45598	.435	-.6053	2.5520
	F5	.72667	.45598	.748	-.8520	2.3053
	F6	.87667	.45598	.556	-.7020	2.4553
	F7	.48000	.45598	.958	-1.0987	2.0587
	F8	.84000	.45598	.604	-.7387	2.4187
F3	F1	-.82000	.45598	.630	-2.3987	.7587
	F2	-.67000	.45598	.812	-2.2487	.9087
	F4	.30333	.45598	.997	-1.2753	1.8820
	F5	.05667	.45598	1.000	-1.5220	1.6353
	F6	.20667	.45598	1.000	-1.3720	1.7853
	F7	-.19000	.45598	1.000	-1.7687	1.3887
	F8	.17000	.45598	1.000	-1.4087	1.7487
F4	F1	-1.12333	.45598	.277	-2.7020	.4553
	F2	-.97333	.45598	.435	-2.5520	.6053

	F3	-.30333	.45598	.997	-1.8820	1.2753
	F5	-.24667	.45598	.999	-1.8253	1.3320
	F6	-.09667	.45598	1.000	-1.6753	1.4820
	F7	-.49333	.45598	.952	-2.0720	1.0853
	F8	-.13333	.45598	1.000	-1.7120	1.4453
F5	F1	-.87667	.45598	.556	-2.4553	.7020
	F2	-.72667	.45598	.748	-2.3053	.8520
	F3	-.05667	.45598	1.000	-1.6353	1.5220
	F4	.24667	.45598	.999	-1.3320	1.8253
	F6	.15000	.45598	1.000	-1.4287	1.7287
	F7	-.24667	.45598	.999	-1.8253	1.3320
	F8	.11333	.45598	1.000	-1.4653	1.6920
F6	F1	-1.02667	.45598	.374	-2.6053	.5520
	F2	-.87667	.45598	.556	-2.4553	.7020
	F3	-.20667	.45598	1.000	-1.7853	1.3720
	F4	.09667	.45598	1.000	-1.4820	1.6753
	F5	-.15000	.45598	1.000	-1.7287	1.4287
	F7	-.39667	.45598	.985	-1.9753	1.1820
	F8	-.03667	.45598	1.000	-1.6153	1.5420
F7	F1	-.63000	.45598	.853	-2.2087	.9487
	F2	-.48000	.45598	.958	-2.0587	1.0987
	F3	.19000	.45598	1.000	-1.3887	1.7687
	F4	.49333	.45598	.952	-1.0853	2.0720
	F5	.24667	.45598	.999	-1.3320	1.8253
	F6	.39667	.45598	.985	-1.1820	1.9753
	F8	.36000	.45598	.991	-1.2187	1.9387
F8	F1	-.99000	.45598	.415	-2.5687	.5887
	F2	-.84000	.45598	.604	-2.4187	.7387
	F3	-.17000	.45598	1.000	-1.7487	1.4087
	F4	.13333	.45598	1.000	-1.4453	1.7120
	F5	-.11333	.45598	1.000	-1.6920	1.4653
	F6	.03667	.45598	1.000	-1.5420	1.6153
	F7	-.36000	.45598	.991	-1.9387	1.2187

Keterangan :

Hasil uji HSD Tukey dari kedelapan formula, diperoleh nilai sig.> α (0,05) sehingga H_0 diterima, berarti rata-rata kekerasan tablet ko-proses dari

kedelapan formula menunjukkan bahwa tidak ada perbedaan yang signifikan antar formula

Kekerasan

Tukey HSD[a]

		Subset for alpha = 0.05
Formula	N	1
F4	3	2.8500
F6	3	2.9467
F8	3	2.9833
F5	3	3.0967
F3	3	3.1533
F7	3	3.3433
F2	3	3.8233
F1	3	3.9733
Sig.		.277

Means for groups in homogeneous subsets are displayed.

LAMPIRAN AM

HASIL UJI STATISTIK ANAVA TABLET KO-PROSES KERAPUHAN

Descriptives

Kerapuhan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1	3	1.3733	.73901	.42667	-.4625	3.2091	.52	1.80
F2	3	.4833	.46608	.26909	-.6745	1.6411	.00	.93
F3	3	.3200	.27713	.16000	-.3684	1.0084	.00	.48
F4	3	5.1333	2.75379	1.58990	-1.7074	11.9741	3.30	8.30
F5	3	.8667	.50332	.29059	-.3837	2.1170	.40	1.40
F6	3	.4267	.04619	.02667	.3119	.5414	.40	.48
F7	3	1.0933	.26577	.15344	.4331	1.7535	.93	1.40
F8	3	.5000	.48125	.27785	-.6955	1.6955	.00	.96
Total	24	1.2746	1.76719	.36073	.5284	2.0208	.00	8.30

Test of Homogeneity of Variances

Kerapuhan

Levene Statistic	df1	df2	Sig.
9.010	7	16	.000

ANOVA

Kerapuhan

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	53.866	7	7.695	6.854	.001
Within Groups	17.962	16	1.123		
Total	71.828	23			

F_{hitung} (6,845) > $F_{tabel\ (0,05)\ (7,16)}$ (2,66) maka H_0 ditolak dan ada perbedaan yang bermakna antar formula. Rata-rata kerapuhan tablet ko-proses dari kedelapan formula menunjukkan ada perbedaan yang signifikan antar formula.

Multiple Comparisons

Kerapuhan
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	.89000	.86512	.963	-2.1052	3.8852
	F3	1.05333	.86512	.915	-1.9418	4.0485
	F4	-3.76000*	.86512	.009	-6.7552	-.7648
	F5	.50667	.86512	.999	-2.4885	3.5018
	F6	.94667	.86512	.949	-2.0485	3.9418
	F7	.28000	.86512	1.000	-2.7152	3.2752
	F8	.87333	.86512	.966	-2.1218	3.8685
F2	F1	-.89000	.86512	.963	-3.8852	2.1052
	F3	.16333	.86512	1.000	-2.8318	3.1585
	F4	-4.65000*	.86512	.001	-7.6452	-1.6548
	F5	-.38333	.86512	1.000	-3.3785	2.6118
	F6	.05667	.86512	1.000	-2.9385	3.0518
	F7	-.61000	.86512	.996	-3.6052	2.3852
	F8	-.01667	.86512	1.000	-3.0118	2.9785
F3	F1	-1.05333	.86512	.915	-4.0485	1.9418
	F2	-.16333	.86512	1.000	-3.1585	2.8318
	F4	-4.81333*	.86512	.001	-7.8085	-1.8182
	F5	-.54667	.86512	.998	-3.5418	2.4485
	F6	-.10667	.86512	1.000	-3.1018	2.8885
	F7	-.77333	.86512	.982	-3.7685	2.2218
	F8	-.18000	.86512	1.000	-3.1752	2.8152
F4	F1	3.76000*	.86512	.009	.7648	6.7552
	F2	4.65000*	.86512	.001	1.6548	7.6452
	F3	4.81333*	.86512	.001	1.8182	7.8085
	F5	4.26667*	.86512	.003	1.2715	7.2618

	F6	4.70667*	.86512	.001	1.7115	7.7018
	F7	4.04000*	.86512	.005	1.0448	7.0352
	F8	4.63333*	.86512	.001	1.6382	7.6285
F5	F1	-.50667	.86512	.999	-3.5018	2.4885
	F2	.38333	.86512	1.000	-2.6118	3.3785
	F3	.54667	.86512	.998	-2.4485	3.5418
	F4	-4.26667*	.86512	.003	-7.2618	-1.2715
	F6	.44000	.86512	.999	-2.5552	3.4352
	F7	-.22667	.86512	1.000	-3.2218	2.7685
	F8	.36667	.86512	1.000	-2.6285	3.3618
F6	F1	-.94667	.86512	.949	-3.9418	2.0485
	F2	-.05667	.86512	1.000	-3.0518	2.9385
	F3	.10667	.86512	1.000	-2.8885	3.1018
	F4	-4.70667*	.86512	.001	-7.7018	-1.7115
	F5	-.44000	.86512	.999	-3.4352	2.5552
	F7	-.66667	.86512	.992	-3.6618	2.3285
	F8	-.07333	.86512	1.000	-3.0685	2.9218
F7	F1	-.28000	.86512	1.000	-3.2752	2.7152
	F2	.61000	.86512	.996	-2.3852	3.6052
	F3	.77333	.86512	.982	-2.2218	3.7685
	F4	-4.04000*	.86512	.005	-7.0352	-1.0448
	F5	.22667	.86512	1.000	-2.7685	3.2218
	F6	.66667	.86512	.992	-2.3285	3.6618
	F8	.59333	.86512	.996	-2.4018	3.5885
F8	F1	-.87333	.86512	.966	-3.8685	2.1218
	F2	.01667	.86512	1.000	-2.9785	3.0118
	F3	.18000	.86512	1.000	-2.8152	3.1752
	F4	-4.63333*	.86512	.001	-7.6285	-1.6382
	F5	-.36667	.86512	1.000	-3.3618	2.6285
	F6	.07333	.86512	1.000	-2.9218	3.0685
	F7	-.59333	.86512	.996	-3.5885	2.4018

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

Keterangan:

Hasil Uji HSD Tukey dari kedelapan formula , diperoleh nilai Sig.< α (0,05) sehingga Ho ditolak (*), berarti rata-rata kerapuhan tablet ko-proses dari kedelapan formula menunjukkan bahwa ada perbedaan yang signifikan

antar formula yaitu formula 1,2,3,5,6,7,dan 8 menunjukan perbedaan yang signifikan terhadap formula 4; Formula 4 menunjukan perbedaan yang signifikan terhadap formula 1,2,3,5,6,7,dan 8.

Kerapuhan

Tukey HSD[a]

		Subset for alpha = 0.05	
Formula	N	1	2
F3	3	.3200	
F6	3	.4267	
F2	3	.4833	
F8	3	.5000	
F5	3	.8667	
F7	3	1.0933	
F1	3	1.3733	
F4	3		5.1333
Sig.		.915	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

LAMPIRAN AN

HASIL UJI STATISTIK ANAVA TABLET KO-PROSES WAKTU HANCUR

Descriptives

Waktuhancur

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1	3	91.0033	8.96289	5.17472	68.7383	113.2684	80.67	96.67
F2	3	659.9900	309.29955	178.57418	-108.3527	1428.3327	303.30	854.00
F3	3	42.0900	6.67325	3.85280	25.5127	58.6673	34.67	47.60
F4	3	26.4433	1.64272	.94843	22.3626	30.5241	25.33	28.33
F5	3	52.3233	2.62348	1.51467	45.8063	58.8404	49.30	54.00
F6	3	58.6667	15.50398	8.95123	20.1527	97.1807	41.20	70.80
F7	3	44.1000	.85440	.49329	41.9776	46.2224	43.30	45.00
F8	3	30.1100	6.40752	3.69938	14.1928	46.0272	24.33	37.00
Total	24	125.5908	226.47802	46.22963	29.9576	221.2241	24.33	854.00

Test of Homogeneity of Variances

Waktuhancur

Levene Statistic	df1	df2	Sig.
14.982	7	16	.000

ANOVA

Waktuhancur

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	987557.090	7	141079.584	11.746	.000
Within Groups	192165.631	16	12010.352		
Total	1179722.721	23			

F_{hitung} (11,746) > $F_{tabel\ (0,05)\ (7,16)}$ (2,66) maka H_0 ditolak dan ada perbedaan yang bermakna antar formula. Rata-rata waktu hancur tablet ko-proses dari kedelapan formula menunjukkan ada perbedaan yang signifikan antar formula.

Multiple Comparisons

Waktuhancur
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-568.98667*	89.48129	.000	-878.7844	-259.1890
	F3	48.91333	89.48129	.999	-260.8844	358.7110
	F4	64.56000	89.48129	.995	-245.2377	374.3577
	F5	38.68000	89.48129	1.000	-271.1177	348.4777
	F6	32.33667	89.48129	1.000	-277.4610	342.1344
	F7	46.90333	89.48129	.999	-262.8944	356.7010
	F8	60.89333	89.48129	.996	-248.9044	370.6910
F2	F1	568.98667*	89.48129	.000	259.1890	878.7844
	F3	617.90000*	89.48129	.000	308.1023	927.6977
	F4	633.54667*	89.48129	.000	323.7490	943.3444
	F5	607.66667*	89.48129	.000	297.8690	917.4644
	F6	601.32333*	89.48129	.000	291.5256	911.1210
	F7	615.89000*	89.48129	.000	306.0923	925.6877
	F8	629.88000*	89.48129	.000	320.0823	939.6777
F3	F1	-48.91333	89.48129	.999	-358.7110	260.8844
	F2	-617.90000*	89.48129	.000	-927.6977	-308.1023
	F4	15.64667	89.48129	1.000	-294.1510	325.4444
	F5	-10.23333	89.48129	1.000	-320.0310	299.5644
	F6	-16.57667	89.48129	1.000	-326.3744	293.2210

	F7	-2.01000	89.48129	1.000	-311.8077	307.7877
	F8	11.98000	89.48129	1.000	-297.8177	321.7777
F4	F1	-64.56000	89.48129	.995	-374.3577	245.2377
	F2	-633.54667*	89.48129	.000	-943.3444	-323.7490
	F3	-15.64667	89.48129	1.000	-325.4444	294.1510
	F5	-25.88000	89.48129	1.000	-335.6777	283.9177
	F6	-32.22333	89.48129	1.000	-342.0210	277.5744
	F7	-17.65667	89.48129	1.000	-327.4544	292.1410
	F8	-3.66667	89.48129	1.000	-313.4644	306.1310
F5	F1	-38.68000	89.48129	1.000	-348.4777	271.1177
	F2	-607.66667*	89.48129	.000	-917.4644	-297.8690
	F3	10.23333	89.48129	1.000	-299.5644	320.0310
	F4	25.88000	89.48129	1.000	-283.9177	335.6777
	F6	-6.34333	89.48129	1.000	-316.1410	303.4544
	F7	8.22333	89.48129	1.000	-301.5744	318.0210
	F8	22.21333	89.48129	1.000	-287.5844	332.0110
F6	F1	-32.33667	89.48129	1.000	-342.1344	277.4610
	F2	-601.32333*	89.48129	.000	-911.1210	-291.5256
	F3	16.57667	89.48129	1.000	-293.2210	326.3744
	F4	32.22333	89.48129	1.000	-277.5744	342.0210
	F5	6.34333	89.48129	1.000	-303.4544	316.1410
	F7	14.56667	89.48129	1.000	-295.2310	324.3644
	F8	28.55667	89.48129	1.000	-281.2410	338.3544
F7	F1	-46.90333	89.48129	.999	-356.7010	262.8944
	F2	-615.89000*	89.48129	.000	-925.6877	-306.0923
	F3	2.01000	89.48129	1.000	-307.7877	311.8077
	F4	17.65667	89.48129	1.000	-292.1410	327.4544
	F5	-8.22333	89.48129	1.000	-318.0210	301.5744
	F6	-14.56667	89.48129	1.000	-324.3644	295.2310
	F8	13.99000	89.48129	1.000	-295.8077	323.7877
F8	F1	-60.89333	89.48129	.996	-370.6910	248.9044
	F2	-629.88000*	89.48129	.000	-939.6777	-320.0823
	F3	-11.98000	89.48129	1.000	-321.7777	297.8177
	F4	3.66667	89.48129	1.000	-306.1310	313.4644
	F5	-22.21333	89.48129	1.000	-332.0110	287.5844
	F6	-28.55667	89.48129	1.000	-338.3544	281.2410
	F7	-13.99000	89.48129	1.000	-323.7877	295.8077

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

Keterangan:

Hasil Uji HSD Tukey dari kedelapan formula , diperoleh nilai Sig.< α (0,05) sehingga Ho ditolak (*), berarti rata-rata waktu hancur tablet ko-proses dari kedelapan formula menunjukkan bahwa ada perbedaan yang signifikan antar formula yaitu formula 1,3,4,5,6,7,dan 8 menunjukan perbedaan yang signifikan terhadap formula 2; Formula 2 menunjukan perbedaan yang signifikan terhadap formula 1,3,4,5,6,7,dan 8

Waktuhancur

Tukey HSD[a]

		Subset for alpha = 0.05	
Formula	N	1	2
F4	3	26.4433	
F8	3	30.1100	
F3	3	42.0900	
F7	3	44.1000	
F5	3	52.3233	
F6	3	58.6667	
F1	3	91.0033	
F2	3		659.9900
Sig.		.995	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

LAMPIRAN AO

HASIL UJI STATISTIK ANAVA TABLET KO-PROSES WAKTU BASAH

Descriptives

Waktubasah

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1	3	156.8567	119.51330	69.00104	-140.0308	453.7442	80.67	294.60
F2	3	386.1667	262.98130	151.83232	-267.1151	1039.4484	174.60	680.60
F3	3	294.9667	277.07512	159.96940	-393.3261	983.2594	44.00	592.30
F4	3	191.4433	143.88561	83.07240	-165.9883	548.8750	25.33	277.30
F5	3	68.8900	31.13128	17.97365	-8.4444	146.2244	48.00	104.67
F6	3	264.8567	340.47779	196.57495	-580.9371	1110.6504	41.20	656.70
F7	3	127.5233	134.46661	77.63433	-206.5102	461.5569	43.30	282.60
F8	3	41.2000	16.21481	9.36162	.9202	81.4798	29.00	59.60
Total	24	191.4879	200.32625	40.89142	106.8976	276.0783	25.33	680.60

Test of Homogeneity of Variances

Waktubasah

Levene Statistic	df1	df2	Sig.
3.765	7	16	.013

ANOVA

Waktubasah

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	290694.424	7	41527.775	1.051	.436
Within Groups	632309.517	16	39519.345		
Total	923003.941	23			

F_{hitung} (1,051) < $F_{tabel\ (0,05)\ (7,16)}$ (2,66) maka H_0 diterima dan tidak ada perbedaan yang bermakna antar formula. Rata-rata waktu basah tablet ko-

proses dari kedelapan formula menunjukkan tidak adanya perbedaan yang signifikan antar formula

Multiple Comparisons

Waktubasah
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	-229.31000	162.31522	.839	-791.2697	332.6497
	F3	-138.11000	162.31522	.987	-700.0697	423.8497
	F4	-34.58667	162.31522	1.000	-596.5464	527.3731
	F5	87.96667	162.31522	.999	-473.9931	649.9264
	F6	-108.00000	162.31522	.997	-669.9597	453.9597
	F7	29.33333	162.31522	1.000	-532.6264	591.2931
	F8	115.65667	162.31522	.995	-446.3031	677.6164
F2	F1	229.31000	162.31522	.839	-332.6497	791.2697
	F3	91.20000	162.31522	.999	-470.7597	653.1597
	F4	194.72333	162.31522	.921	-367.2364	756.6831
	F5	317.27667	162.31522	.537	-244.6831	879.2364
	F6	121.31000	162.31522	.994	-440.6497	683.2697
	F7	258.64333	162.31522	.748	-303.3164	820.6031
	F8	344.96667	162.31522	.440	-216.9931	906.9264
F3	F1	138.11000	162.31522	.987	-423.8497	700.0697
	F2	-91.20000	162.31522	.999	-653.1597	470.7597
	F4	103.52333	162.31522	.998	-458.4364	665.4831
	F5	226.07667	162.31522	.848	-335.8831	788.0364
	F6	30.11000	162.31522	1.000	-531.8497	592.0697
	F7	167.44333	162.31522	.962	-394.5164	729.4031
	F8	253.76667	162.31522	.764	-308.1931	815.7264
F4	F1	34.58667	162.31522	1.000	-527.3731	596.5464
	F2	-194.72333	162.31522	.921	-756.6831	367.2364
	F3	-103.52333	162.31522	.998	-665.4831	458.4364
	F5	122.55333	162.31522	.993	-439.4064	684.5131
	F6	-73.41333	162.31522	1.000	-635.3731	488.5464
	F7	63.92000	162.31522	1.000	-498.0397	625.8797

	F8	150.24333	162.31522	.979	-411.7164	712.2031
F5	F1	-87.96667	162.31522	.999	-649.9264	473.9931
	F2	-317.27667	162.31522	.537	-879.2364	244.6831
	F3	-226.07667	162.31522	.848	-788.0364	335.8831
	F4	-122.55333	162.31522	.993	-684.5131	439.4064
	F6	-195.96667	162.31522	.918	-757.9264	365.9931
	F7	-58.63333	162.31522	1.000	-620.5931	503.3264
	F8	27.69000	162.31522	1.000	-534.2697	589.6497
F6	F1	108.00000	162.31522	.997	-453.9597	669.9597
	F2	-121.31000	162.31522	.994	-683.2697	440.6497
	F3	-30.11000	162.31522	1.000	-592.0697	531.8497
	F4	73.41333	162.31522	1.000	-488.5464	635.3731
	F5	195.96667	162.31522	.918	-365.9931	757.9264
	F7	137.33333	162.31522	.987	-424.6264	699.2931
	F8	223.65667	162.31522	.854	-338.3031	785.6164
F7	F1	-29.33333	162.31522	1.000	-591.2931	532.6264
	F2	-258.64333	162.31522	.748	-820.6031	303.3164
	F3	-167.44333	162.31522	.962	-729.4031	394.5164
	F4	-63.92000	162.31522	1.000	-625.8797	498.0397
	F5	58.63333	162.31522	1.000	-503.3264	620.5931
	F6	-137.33333	162.31522	.987	-699.2931	424.6264
	F8	86.32333	162.31522	.999	-475.6364	648.2831
F8	F1	-115.65667	162.31522	.995	-677.6164	446.3031
	F2	-344.96667	162.31522	.440	-906.9264	216.9931
	F3	-253.76667	162.31522	.764	-815.7264	308.1931
	F4	-150.24333	162.31522	.979	-712.2031	411.7164
	F5	-27.69000	162.31522	1.000	-589.6497	534.2697
	F6	-223.65667	162.31522	.854	-785.6164	338.3031
	F7	-86.32333	162.31522	.999	-648.2831	475.6364

Keterangan:

Hasil Uji HSD Tukey dari kedelapan formula , diperoleh nilai Sig.>α (0,05) sehingga Ho diterima (*), berarti rata-rata kerapuhan tablet ko-proses dari kedelapan formula menunjukkan bahwa tidak ada perbedaan yang signifikan antar formula.

Waktubasah

Tukey HSD[a]

Formula	N	Subset for alpha = 0.05
		1
F8	3	41.2000
F5	3	68.8900
F7	3	127.5233
F1	3	156.8567
F4	3	191.4433
F6	3	264.8567
F3	3	294.9667
F2	3	386.1667
Sig.		.440

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

LAMPIRAN AP

HASIL UJI STATISTIK ANAVA TABLET KO-PROSES RATIO ABSORBSI

Descriptives

Ratioabsorbsi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
F1	3	96.9523	27.99363	16.16213	27.4123	166.4924	76.67	128.89
F2	3	71.2500	26.21484	15.13514	6.1287	136.3713	45.85	98.21
F3	3	93.3500	.40037	.23116	92.3554	94.3446	92.96	93.76
F4	3	103.3633	5.94701	3.43351	88.5901	118.1365	97.59	109.47
F5	3	95.7400	6.80696	3.93000	78.8306	112.6494	91.81	103.60
F6	3	112.9567	14.43501	8.33406	77.0981	148.8152	96.29	121.48
F7	3	83.9767	2.13620	1.23333	78.6701	89.2833	81.51	85.21
F8	3	168.9400	20.43194	11.79639	118.1843	219.6957	145.45	182.59
Total	24	103.3161	31.18176	6.36495	90.1492	116.4830	45.85	182.59

Test of Homogeneity of Variances

Ratioabsorbsi

Levene Statistic	df1	df2	Sig.
3.865	7	16	.012

ANOVA

Ratioabsorbsi

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	17996.716	7	2570.959	9.421	.000
Within Groups	4366.239	16	272.890		
Total	22362.955	23			

F_{hitung} (9,421) > $F_{tabel\ (0,05)\ (7,16)}$ (2,66) maka H_0 ditolak dan ada perbedaan yang bermakna antar formula. Rata-rata ratio absorbsi tablet ko-proses dari kedelapan formula menunjukkan ada perbedaan yang signifikan antar formula.

Multiple Comparisons

Ratioabsorbsi
Tukey HSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
F1	F2	25.70233	13.48802	.566	-20.9952	72.3999
	F3	3.60233	13.48802	1.000	-43.0952	50.2999
	F4	-6.41100	13.48802	1.000	-53.1086	40.2866
	F5	1.21233	13.48802	1.000	-45.4852	47.9099
	F6	-16.00433	13.48802	.925	-62.7019	30.6932
	F7	12.97567	13.48802	.974	-33.7219	59.6732
	F8	-71.98767*	13.48802	.001	-118.6852	-25.2901
F2	F1	-25.70233	13.48802	.566	-72.3999	20.9952
	F3	-22.10000	13.48802	.723	-68.7976	24.5976
	F4	-32.11333	13.48802	.313	-78.8109	14.5842
	F5	-24.49000	13.48802	.619	-71.1876	22.2076
	F6	-41.70667	13.48802	.098	-88.4042	4.9909
	F7	-12.72667	13.48802	.976	-59.4242	33.9709
	F8	-97.69000*	13.48802	.000	-144.3876	-50.9924
F3	F1	-3.60233	13.48802	1.000	-50.2999	43.0952
	F2	22.10000	13.48802	.723	-24.5976	68.7976
	F4	-10.01333	13.48802	.994	-56.7109	36.6842
	F5	-2.39000	13.48802	1.000	-49.0876	44.3076
	F6	-19.60667	13.48802	.820	-66.3042	27.0909
	F7	9.37333	13.48802	.996	-37.3242	56.0709
	F8	-75.59000*	13.48802	.001	-122.2876	-28.8924
F4	F1	6.41100	13.48802	1.000	-40.2866	53.1086
	F2	32.11333	13.48802	.313	-14.5842	78.8109
	F3	10.01333	13.48802	.994	-36.6842	56.7109

	F5	7.62333	13.48802	.999	-39.0742	54.3209
	F6	-9.59333	13.48802	.995	-56.2909	37.1042
	F7	19.38667	13.48802	.828	-27.3109	66.0842
	F8	-65.57667*	13.48802	.003	-112.2742	-18.8791
F5	F1	-1.21233	13.48802	1.000	-47.9099	45.4852
	F2	24.49000	13.48802	.619	-22.2076	71.1876
	F3	2.39000	13.48802	1.000	-44.3076	49.0876
	F4	-7.62333	13.48802	.999	-54.3209	39.0742
	F6	-17.21667	13.48802	.895	-63.9142	29.4809
	F7	11.76333	13.48802	.985	-34.9342	58.4609
	F8	-73.20000*	13.48802	.001	-119.8976	-26.5024
F6	F1	16.00433	13.48802	.925	-30.6932	62.7019
	F2	41.70667	13.48802	.098	-4.9909	88.4042
	F3	19.60667	13.48802	.820	-27.0909	66.3042
	F4	9.59333	13.48802	.995	-37.1042	56.2909
	F5	17.21667	13.48802	.895	-29.4809	63.9142
	F7	28.98000	13.48802	.427	-17.7176	75.6776
	F8	-55.98333*	13.48802	.013	-102.6809	-9.2858
F7	F1	-12.97567	13.48802	.974	-59.6732	33.7219
	F2	12.72667	13.48802	.976	-33.9709	59.4242
	F3	-9.37333	13.48802	.996	-56.0709	37.3242
	F4	-19.38667	13.48802	.828	-66.0842	27.3109
	F5	-11.76333	13.48802	.985	-58.4609	34.9342
	F6	-28.98000	13.48802	.427	-75.6776	17.7176
	F8	-84.96333*	13.48802	.000	-131.6609	-38.2658
F8	F1	71.98767*	13.48802	.001	25.2901	118.6852
	F2	97.69000*	13.48802	.000	50.9924	144.3876
	F3	75.59000*	13.48802	.001	28.8924	122.2876
	F4	65.57667*	13.48802	.003	18.8791	112.2742
	F5	73.20000*	13.48802	.001	26.5024	119.8976
	F6	55.98333*	13.48802	.013	9.2858	102.6809
	F7	84.96333*	13.48802	.000	38.2658	131.6609

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

Hasil Uji HSD Tukey dari kedelapan formula , diperoleh nilai Sig.<α (0,05) sehingga Ho ditolak (*), berarti rata-rata ratio absorbsi tablet ko-proses dari kedelapan formula menunjukkan bahwa t ada perbedaan yang signifikan antar formula yaitu formula 1,2,3,4,5,6,dan 7 menunjukan perbedaan yang

signifikan terhadap formula 8; formula 8 menunjukan perbedaan yang signifikan dengan formula 1,2,3,4,5,6,dan 7.

Ratio absorbs
Tukey HSD[a]

		Subset for alpha = 0.05	
Formula	N	1	2
F2	3	71.2500	
F7	3	83.9767	
F3	3	93.3500	
F5	3	95.7400	
F1	3	96.9523	
F4	3	103.3633	
F6	3	112.9567	
F8	3		168.9400
Sig.		.098	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

LAMPIRAN AQ

HASIL UJI STATISTIK ANAVA PENETAPAN KADAR

Descriptives

PENETAPANKADAR1

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Fopt1	3	92.4400	1.15469	.66666	89.5716	95.3084	91.35	93.65
generik	3	99.2333	.64291	.37118	97.6363	100.8304	98.50	99.70
paten	3	98.8667	1.88768	1.08985	94.1774	103.5559	96.80	100.50
Total	9	96.8467	3.50367	1.16789	94.1535	99.5398	91.35	100.50

Test of Homogeneity of Variances

PENETAPANKADAR1

Levene Statistic	df1	df2	Sig.
1.619	2	6	.274

ANOVA

PENETAPANKADAR1

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	87.586	2	43.793	24.742	.001
Within Groups	10.620	6	1.770		
Total	98.206	8			

F_{hitung} (24,74) > $F_{tabel\ (0,05)\ (2,6)}$ (5,14) maka H_0 diterima dan ada perbedaan yang bermakna antar formula optimum dengan pembanding.

LAMPIRAN AR

HASIL UJI STATISTIK ANAVA %ED

Descriptives

ED

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Fopt1	3	79.1833	3.71947	2.14744	69.9437	88.4230	75.79	83.16
generik	3	68.1367	.72858	.42065	66.3268	69.9466	67.62	68.97
paten	3	63.2600	.49487	.28572	62.0307	64.4893	62.69	63.58
Total	9	70.1933	7.31935	2.43978	64.5672	75.8195	62.69	83.16

Test of Homogeneity of Variances

ED

Levene Statistic	df1	df2	Sig.
4.241	2	6	.071

ANOVA

ED

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	399.363	2	199.682	41.002	.000
Within Groups	29.220	6	4.870		
Total	428.584	8			

F_{hitung} (41,002) > $F_{tabel\ (0,05)\ (2,6)}$ (5,14) maka H_0 diterima dan ada perbedaan yang bermakna antar formula optimum dengan pembanding.

LAMPIRAN AS

HASIL UJI STATISTIK ANAVA %OBAT TERLEPAS T-30

Descriptives

T30

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Fopt1	3	83.0633	.57187	.33017	81.6427	84.4839	82.52	83.66
generik	3	72.3800	2.28121	1.31705	66.7132	78.0468	70.48	74.91
paten	3	69.8167	1.14269	.65973	66.9781	72.6553	68.55	70.77
Total	9	75.0867	6.22346	2.07449	70.3029	79.8704	68.55	83.66

Test of Homogeneity of Variances

T30

Levene Statistic	df1	df2	Sig.
3.054	2	6	.122

ANOVA

T30

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	296.178	2	148.089	64.983	.000
Within Groups	13.673	6	2.279		
Total	309.852	8			

F_{hitung} (64,98) > $F_{tabel\ (0,05)\ (2,6)}$ (5,14) maka H_0 diterima dan ada perbedaan yang bermakna antar formula optimum dengan pembanding.

LAMPIRAN AT

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET KO-PROSES KEKERASAN

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
kekerasanSblm	sebelum	3	2.6967	.13577	.07839
	sesudah	3	2.4800	.07211	.04163

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
kekerasanSblm	Equal variances assumed	2.609	.182	2.441	4	.071	.21667	.08876	-.02976	.46310
	Equal variances not assumed			2.441	3.045	.091	.21667	.08876	-.06344	.49677

Data hasil uji paired T-test menunjukan T_{hitung} (2,441) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN AU

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET KOPROSES RATIO KERAPUHAN

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
kerapuhanSblm	sebelum	3	.9033	.55519	.32054
	sesudah	3	.5533	.26633	.15377

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
kerapuhanSblm	Equal variances assumed	3.047	.156	.984	4	.381	.35000	.35551	-.63706	1.33706
	Equal variances not assumed			.984	2.874	.400	.35000	.35551	-.80993	1.50993

Data hasil uji paired T-test menunjukan T_{hitung} (0,984) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN AV

HASIL UJI STATISTIK INDEPENDENT T-TEST KO-PROSES WAKTU HANCUR

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
waktuhancurSebelm	sebelum	3	31.0000	20.30665	11.72405
	sesudah	3	45.0533	12.71883	7.34322

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
waktuhancurSebelm	Equal variances assumed	.339	.592	-1.016	4	.367	-14.05333	13.83388	-52.46234	24.35567
	Equal variances not assumed			-1.016	3.360	.377	-14.05333	13.83388	-55.52759	27.42092

Data hasil uji paired T-test menunjukan T_{hitung} (1,016) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN AW

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET KOPROSES WAKTU BASAH

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
waktubasahSblm	sebelum	3	152.7333	17.38658	10.03815
	sesudah	3	105.6667	4.58839	2.64911

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
waktubasahSblm	Equal variances assumed	6.167	.068	4.534	4	.011	47.06667	10.38182	18.24211	75.89122
	Equal variances not assumed			4.534	2.277	.035	47.06667	10.38182	7.22450	86.90884

Data hasil uji paired T-test menunjukan T_{hitung} (4,534) > $T_{tabel\ (0,05)\ (4)}$ (2,776) maka ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN AX

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET KO-PROSES RATIO ABSORBSI

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
ratioSebelm	sebelum	3	96.3367	30.13324	17.39743
	sesudah	3	103.6867	31.85930	18.39397

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ratioSebelm	Equal variances assumed	.021	.893	-.290	4	.786	-7.35000	25.31816	-77.64447	62.94447
	Equal variances not assumed			-.290	3.988	.786	-7.35000	25.31816	-77.73039	63.03039

Data hasil uji paired T-test menunjukan T_{hitung} (0,290) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN AY

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET ODT KEKERASAN

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
kekersnODTsblm	sebelum	3	2.6333	.02082	.01202
	sesudah	3	2.4667	.05132	.02963

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
kekersnODTsblm	Equal variances assumed	2.632	.180	5.213	4	.006	.16667	.03197	.07790	.25544
	Equal variances not assumed			5.213	2.641	.019	.16667	.03197	.05662	.27671

Data hasil uji paired T-test menunjukan T_{hitung} (5,213) > $T_{tabel\ (0,05)\ (4)}$ (2,776) maka ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN AZ

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET ODT KERAPUHAN

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
kerapuhanODTseblm	sebelum	3	.5243	.16931	.09775
	sesudah	3	.3973	.18662	.10774

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
kerapuhanODTseblm	Equal variances assumed	.002	.971	.873	4	.432	.12700	.14548	-.27692	.53092
	Equal variances not assumed			.873	3.963	.432	.12700	.14548	-.27842	.53242

Data hasil uji paired T-test menunjukan T_{hitung} (0,873) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN BA

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET ODT WAKTU HANCUR

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
waktuhancurODTsblm	sebelum	3	63.9333	14.06035	8.11774
	sesudah	3	64.8667	5.85947	3.38296

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
waktuhancurODTsblm	Equal variances assumed	3.454	.137	-.106	4	.921	-.93333	8.79444	-25.35062	23.48395
	Equal variances not assumed			-.106	2.674	.923	-.93333	8.79444	-30.95159	29.08493

Data hasil uji paired T-test menunjukan T_{hitung} (0,106) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN BB

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET ODT WAKTU BASAH

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
waktubasahODTsebelm	sebelum	3	141.0667	15.71793	9.07475
	sesudah	3	113.5333	2.80238	1.61795

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
waktubasahODTsebelm	Equal variances assumed	3.092	.154	2.987	4	.040	27.53333	9.21786	1.94046	53.12621
	Equal variances not assumed			2.987	2.127	.089	27.53333	9.21786	-9.94243	65.00910

Data hasil uji paired T-test menunjukan T_{hitung} (2,987) > $T_{tabel\ (0,05)\ (4)}$ (2,776) maka ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN BC

HASIL UJI STATISTIK INDEPENDENT T-TEST TABLET ODT RATIO ABSORBSI

Group Statistics

	kekerasanStabil	N	Mean	Std. Deviation	Std. Error Mean
ratioODTseblm	sebelum	3	88.5000	17.99017	10.38663
	sesudah	3	111.8467	25.33665	14.62812

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ratioODTseblm	Equal variances assumed	.385	.569	-1.301	4	.263	-23.34667	17.94057	-73.15767	26.46434
	Equal variances not assumed			-1.301	3.608	.270	-23.34667	17.94057	-75.36667	28.67334

Data hasil uji paired T-test menunjukan T_{hitung} (0,263) < $T_{tabel\ (0,05)\ (4)}$ (2,776) maka tidak ada perbedaan yang bermakna antara formula sebelum stabilitas dengan formula setelah stabilitas.

LAMPIRAN BD

HASIL UJI STATISTIK ONE SAMPLE T-TEST CARR'S INDEX GRANUL KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CARRSINDEX	3	15.0067	.49541	.28603

One-Sample Test

	Test Value = 14.96					
					95% Confidence Interval of the Difference	
	T	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
CARRSINDEX	.163	2	.885	.04667	-1.1840	1.2773

Data hasil uji one sample T-test menunjukan T_{hitung} (0,163) < $T_{tabel\ (0,05)\ (2)}$ (4,303) maka tidak ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BE

HASIL UJI STATISTIK ONE SAMPLE T-TEST HAUSNER RATIO GRANUL KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
HAUSNERRATIO	3	1.1733	.00577	.00333

One-Sample Test

	Test Value = 1.17					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
HAUSNERRATIO	1.000	2	.423	.00333	-.0110	.0177

Data hasil uji one sample T-test menunjukan T_{hitung} (1,000) < $T_{tabel\ (0,05)\ (2)}$ (4,303) maka tidak ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BF

HASIL UJI STATISTIK ONE SAMPLE T-TES KEKERASAN TABLET KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
KEKERASAN	3	2.6967	.13577	.07839

One-Sample Test

	Test Value = 3.02					
					95% Confidence Interval of the Difference	
	t	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
KEKERASAN	-4.125	2	.054	-.32333	-.6606	.0139

Data hasil uji one sample T-test menunjukan T_{hitung} (4,125) < $T_{tabel\ (0,05)\ (2)}$ (4,303) maka tidak ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BG

HASIL UJI STATISTIK ONE SAMPLE T-TEST KERAPUHAN TABLET KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
KERAPUHAN	3	.9033	.55519	.32054

One-Sample Test

	Test Value = 0.413					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
KERAPUHAN	1.530	2	.266	.49033	-.8888	1.8695

Data hasil uji one sample T-test menunjukan T_{hitung} (1,530) < $T_{tabel\ (0,05)\ (2)}$ (4,303) maka tidak ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BH

HASIL UJI STATISTIK ONE SAMPLE T-TEST WAKTU HANCUR TABLET KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
WAKTUHANCUR	3	37.6667	11.56258	6.67566

One-Sample Test

	Test Value = 32.06					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
WAKTUHANCUR	.840	2	.489	5.60667	-23.1164	34.3297

Data hasil uji one sample T-test menunjukan T_{hitung} (0,840) < $T_{tabel\ (0,05)\ (2)}$ (4,303) maka tidak ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BI

HASIL UJI STATISTIK ONE SAMPLE T-TEST WAKTU BASAH TABLET KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
WAKTUBASAH	3	152.7333	17.38658	10.03815

One-Sample Test

	Test Value = 59.18					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
WAKTUBASAH	9.320	2	.011	93.55333	50.3627	136.7440

Data hasil uji one sample T-test menunjukan T_{hitung} (9,320) > $T_{tabel\ (0,05)\ (2)}$ (4,303) maka ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BJ

HASIL UJI STATISTIK ONE SAMPLE T-TEST RATIO ABSORBSI TABLET KO-PROSES OPTIMUM

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
RATIO	3	96.3367	30.13324	17.39743

One-Sample Test

	Test Value = 159.03					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
RATIO	-3.604	2	.069	-62.69333	-137.5485	12.1618

Data hasil uji one sample T-test menunjukan T_{hitung} (3,604) < $T_{tabel\ (0,05)\ (2)}$ (4,303) maka tidak ada perbedaan yang bermakna antara formula hasil dengan formula optimum.

LAMPIRAN BK

HASIL UJI ANAVA CARR'S INDEX FORMULASI OPTIMUM

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	543.64	7	77.66	10.14	< 0.0001	significant
A-HPMC	*419.59*	*1*	*419.59*	*54.78*	*< 0.0001*	
B-Manitol	*0.18*	*1*	*0.18*	*0.023*	*0.8817*	
C-CP	*43.82*	*1*	*43.82*	*5.72*	*0.0294*	
AB	*0.65*	*1*	*0.65*	*0.085*	*0.7745*	
AC	*33.58*	*1*	*33.58*	*4.38*	*0.0525*	
B C	*44.58*	*1*	*44.58*	*5.82*	*0.0282*	
AB C	*1.24*	*1*	*1.24*	*0.16*	*0.6930*	
Pure Error	122.55	16	7.66			
Cor Total	666.18	23				

The Model F-value of 10.14 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, C, BC 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.	2.77	R-Squared	0.8160
Mean19.10	Adj R-Squared	0.7356	
C.V. %	14.49	Pred R-Squared	0.5861
PRESS	275.73	Adeq Precision	8.837

The "Pred R-Squared" of 0.5861 is in reasonable agreement with the "Adj R-Squared" of 0.7356.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 8.837 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	19.10	1	0.56	17.91	20.30	
A-HPMC	-4.18	1	0.56	-5.38	-2.98	1.00
B-Manitol	0.085	1	0.56	-1.11	1.28	1.00
C-CP	1.351	0.56	0.15	2.55	1.00	
AB	0.161	0.56	-1.03	1.36	1.00	
AC	-1.18	1	0.56	-2.38	0.015	1.00
BC	-1.36	1	0.56	-2.56	-0.17	1.00
ABC	-0.23	1	0.56	-1.42	0.97	1.00

Final Equation in Terms of Coded Factors:

carrs =

+19.10

-4.18 * A

+0.085 * B

+1.35 * C

+0.16 * A * B

-1.18 * A * C

-1.36	* B * C
-0.23	* A * B * C

Final Equation in Terms of Actual Factors:

carrs	=
+19.10292	
-4.18125	* HPMC
+0.085417	* Manitol
+1.35125	* CP
+0.16458	* HPMC * Manitol
-1.18292	* HPMC * CP
-1.36292	* Manitol * CP
-0.22708	* HPMC * Manitol * CP

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 BL

HASIL UJI ANAVA HAUSNER RATIO FORMULASI OPTIMUM

Response 2 hausner

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	0.11	7	0.015	5.770.0018	significant
A-HPMC	*0.080*	*1*	*0.080*	*30.12< 0.0001*	
B-Manitol	*1.218E-003*	*1*	*1.218E-003*	*0.460.5089*	
C-CP	*0.014*	*1*	*0.014*	*5.120.0378*	
AB	*8.284E-004*	*1*	*8.284E-004*	*0.310.5852*	
AC	*1.305E-003*	*1*	*1.305E-003*	*0.490.4944*	
BC	*0.010*	*1*	*0.010*	*3.890.0662*	
ABC	*3.504E-005*	*1*	*3.504E-005*	*0.0130.9102*	
Pure Error	0.043	16	2.669E-003		
Cor Total	0.15	23			

The Model F-value of 5.77 implies the model is significant. There is only a 0.18% 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, C 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.	0.052		R-Squared	0.7163
Mean1.24		Adj R-Squared	0.5922	
C.V. %	4.18		Pred R-Squared	0.3617
PRESS	0.096		Adeq Precision	6.481

The "Pred R-Squared" of 0.3617 is not as close to the "Adj R-Squared" of 0.5922 as one might normally expect. This may indicate a large block effect or a possible problem with your model and/or data. Things to consider are model reduction, response transformation, outliers, etc.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 6.481 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	1.24	1	0.011	1.21	1.26	
A-HPMC	-0.058	1	0.011	-0.080	-0.036	1.00
B-Manitol	-7.125E-003	1	0.011	-0.029	0.015	1.00
C-CP	0.024	1	0.011	1.518E-003	0.046	1.00
AB	-5.875E-003	1	0.011	-0.028	0.016	1.00
AC	-7.375E-003	1	0.011	-0.030	0.015	1.00
BC	-0.021	1	0.011	-0.043	1.565E-003	1.00
ABC	-1.208E-003	1	0.011	-0.024	0.021	1.00

Final Equation in Terms of Coded Factors:

hausner =

+1.24

-0.058 * A

-7.125E-003 * B

+0.024 * C

-5.875E-003 * A * B

-7.375E-003 * A * C

-0.021 * B * C

-1.208E-003 * A * B * C

Final Equation in Terms of Actual Factors:

hausner	=
+1.23504	
-0.057875	* HPMC
-7.12500E-003	* Manitol
+0.023875	* CP
-5.87500E-003	* HPMC * Manitol
-7.37500E-003	* HPMC * CP
-0.020792	* Manitol * CP
-1.20833E-003	* HPMC * Manitol * CP

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 BM

HASIL UJI ANAVA KEKERASAN FORMULASI OPTIMUM

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	3.33	7	0.48	1.580.2119	not
A-HPMC	*0.057*	*1*	*0.057*	*0.190.6693*	significant
B-Manitol	*0.34*	*1*	*0.34*	*1.120.3050*	
C-CP	*1.27*	*1*	*1.27*	*4.230.0565*	
AB	*0.074*	*1*	*0.074*	*0.240.6276*	
AC	*5.704E-003*	*1*	*5.704E-003*	*0.019*	*0.8923*
BC	*1.50*	*1*	*1.50*	*4.960.0406*	
AB C	*0.088*	*1*	*0.088*	*0.290.5972*	
Pure Error	4.82	16	0.30		
Cor Total	8.15	23			

The "Model F-value" of 1.58 implies the model is not significant relative to the noise. There is a 21.19 % 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 BC 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.	0.55		R-Squared	0.4086
Mean3.26		Adj R-Squared	0.1499	
C.V. %	16.82		Pred R-Squared	-0.3306
PRESS	10.85		Adeq Precision	3.313

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 3.31 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	3.26	1	0.11	3.03	3.50	
A-HPMC	-0.049	1	0.11	-0.29	0.19	1.00
B-Manitol	-0.12	1	0.11	-0.36	0.12	1.00
C-CP	-0.23	1	0.11	-0.47	7.134E-003	1.00
AB	-0.055	1	0.11	-0.29	0.18	1.00
AC	-0.015	1	0.11	-0.25	0.22	1.00
BC	0.25	1	0.11	0.012	0.49	1.00
ABC	-0.060	1	0.11	-0.30	0.18	1.00

Final Equation in Terms of Coded Factors:

kekerasan =

+3.26

-0.049 * A

-0.12 * B

-0.23 * C

-0.055 * A * B

-0.015 * A * C

+0.25 * B * C

-0.060 * A * B * C

Final Equation in Terms of Actual Factors:

kekerasan =

+3.26292

-0.048750 * HPMC

-0.11875 * Manitol

-0.23042 * CP

-0.055417 * HPMC * Manitol

-0.015417 * HPMC * CP

+0.24958 * Manitol * CP

-0.060417 * HPMC * Manitol * CP

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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4) Box-Cox plot for power transformations.

LAMPIRAN BO

HASIL UJI ANAVA KERAPUHAN FORMULASI OPTIMUM

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	41.22	7	5.89	3.33	0.0218	significant
A-HPMC	*10.65*	*1*	*10.65*	*6.03*	*0.0259*	
B-Manitol	*5.93*	*1*	*5.93*	*3.36*	*0.0856*	
C-CP	*4.43*	*1*	*4.43*	*2.51*	*0.1328*	
AB	*8.92*	*1*	*8.92*	*5.05*	*0.0391*	
AC	*6.92*	*1*	*6.92*	*3.92*	*0.0652*	
BC	*3.34*	*1*	*3.34*	*1.89*	*0.1882*	
ABC	*1.03*	*1*	*1.03*	*0.58*	*0.4563*	
Pure Error	28.26	16	1.77			
Cor Total	69.48	23				

The Model F-value of 3.33 implies the model is significant. There is only a 2.18% 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, 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.	1.33		R-Squared	0.5933
Mean1.15		Adj R-Squared	0.4154	
C.V. %	115.85		Pred R-Squared	0.0849
PRESS	63.58		Adeq Precision	5.418

The "Pred R-Squared" of 0.0849 is not as close to the "Adj R-Squared" of 0.4154 as one might normally expect. This may indicate a large block effect or a possible problem with your model and/or data. Things to consider are model reduction, response transformation, outliers, etc.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 5.418 indicates an adequate signal. This model can be used to navigate the design space.

Coefficien Factor	Standard Estimate	df	Error	95% CI Low	95% CI High	VIF
Intercept	1.15	1	0.27	0.57	1.72	
A-HPMC	-0.67	1	0.27	-1.24	-0.091	1.00
B-Manitol	-0.50	1	0.27	-1.07	0.078	1.00
C-CP0.43	1	0.27	-0.15	1.00	1.00	
AB	0.61	1	0.27	0.035	1.18	1.00
AC	-0.54	1	0.27	-1.11	0.038	1.00
BC	-0.37	1	0.27	-0.95	0.20	1.00
ABC	0.21	1	0.27	-0.37	0.78	1.00

Final Equation in Terms of Coded Factors:

kerapuhan =

+1.15

-0.67 * A

-0.50 * B

+0.43 * C

+0.61 * A * B

-0.54 * A * C

-0.37 * B * C

+0.21 * A * B * C

Final Equation in Terms of Actual Factors:

kerapuhan =

+1.14708

-0.66625 * HPMC

-0.49708 * Manitol

+0.42958 * CP

+0.60958 * HPMC * Manitol

-0.53708 * HPMC * CP

-0.37292 * Manitol * CP

+0.20708 * HPMC * Manitol * CP

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

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4) Box-Cox plot for power transformations

LAMPIRAN BN

HASIL UJI ANAVA WAKTU HANCUR FORMULASI OPTIMUM

Response 6 waktu hancur

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	9.902E+005	7	1.415E+005	11.78	< 0.0001	Significant
A-HPMC	*1.341E+005*	*1*	*1.341E+005*	*11.17*	*0.0041*	
B-Manitol	*1.674E+005*	*1*	*1.674E+005*	*13.94*	*0.0018*	
C-CP	*1.777E+005*	*1*	*1.777E+005*	*14.80*	*0.0014*	
AB	*1.350E+005*	*1*	*1.350E+005*	*11.25*	*0.0040*	
AC	*1.191E+005*	*1*	*1.191E+005*	*9.920.0062*		
BC	*1.575E+005*	*1*	*1.575E+005*	*13.12*	*0.0023*	
ABC	*99388.58*	*1*	*99388.58*	*8.280.0109*		
Pure Error	1.921E+005	16	12006.66			
Cor Total	1.182E+006	23				

The Model F-value of 11.78 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, C, AB, AC, BC, ABC 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.	109.57		R-Squared	0.8375
Mean124.98		Adj R-Squared	0.7664	
C.V. %	87.68		Pred R-Squared	0.6344
PRESS	4.322E+005		Adeq Precision	10.016

The "Pred R-Squared" of 0.6344 is in reasonable agreement with the "Adj R-Squared" of 0.7664.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 10.016 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	124.98	1	22.37	77.56	172.39	
A-HPMC	74.76	1	22.37	27.34	122.17	1.00
B-Manitol	-83.51	1	22.37	-130.93	-36.10	1.00
C-CP	-86.05	1	22.37	-133.46	-38.63	1.00
AB	-75.01	1	22.37	-122.42	-27.59	1.00
AC	-70.44	1	22.37	-117.85	-23.02	1.00
BC	81.02	1	22.37	33.61	128.44	1.00
ABC	64.35	1	22.37	16.94	111.77	1.00

Final Equation in Terms of Coded Factors:

waktu hancur =

+124.98

+74.76 * A

-83.51 * B

-86.05 * C

-75.01 * A * B

-70.44 * A * C

+81.02 * B * C

+64.35 * A * B * C

Final Equation in Terms of Actual Factors:

waktu hancur =

+124.97792

+74.75792 * HPMC

-83.51125 * Manitol

-86.04542 * CP

-75.00792 * HPMC * Manitol

-70.43542 * HPMC * CP

+81.02208 * Manitol * CP

+64.35208 * HPMC * Manitol * CP

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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 BO

HASIL UJI ANAVA WAKTU BASAH FORMULASI OPTIMUM

Response 7 waktu basah

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	7.834E+006	7	1.119E+006	1.34	0.2961	not
A-HPMC	*9.047E+005*	*1*	*9.047E+005*	*1.08*	*0.3139*	significant
B-Manitol	*1.376E+006*	*1*	*1.376E+006*	*1.64*	*0.2179*	
C-CP	*1.259E+006*	*1*	*1.259E+006*	*1.50*	*0.2377*	
AB	*1.548E+006*	*1*	*1.548E+006*	*1.85*	*0.1926*	
AC	*9.267E+005*	*1*	*9.267E+005*	*1.11*	*0.3082*	
BC	*6.677E+005*	*1*	*6.677E+005*	*0.80*	*0.3849*	
ABC	*1.151E+006*	*1*	*1.151E+006*	*1.38*	*0.2580*	
Pure Error	1.339E+007	16	8.367E+005			
Cor Total	2.122E+007	23				

The "Model F-value" of 1.34 implies the model is not significant relative to the noise. There is a 29.61 % 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.	914.72		R-Squared	0.3691
Mean386.18		Adj R-Squared	0.0931	
C.V. %	236.86		Pred R-Squared	-0.4194
PRESS	3.012E+007		Adeq Precision	3.480

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 3.48 indicates an inadequate

signal and we should not use this model to navigate the design space.

Coefficient Factor	Standard Estimate	df	95% CI Error	95% CI Low	High	VIF
Intercept	386.18	1	186.72	-9.64	782.01	
A-HPMC	194.16	1	186.72	-201.67	589.98	1.00
B-Manitol	-239.47	1	186.72	-635.29	156.35	1.00
C-CP	-229.02	1	186.72	-624.85	166.80	1.00
AB	-254.00	1	186.72	-649.82	141.82	1.00
AC	-196.50	1	186.72	-592.32	199.32	1.00
BC	166.79	1	186.72	-229.03	562.61	1.00
ABC	218.98	1	186.72	-176.84	614.80	1.00

Final Equation in Terms of Coded Factors:

waktu basah =

+386.18

+194.16 * A

-239.47 * B

-229.02 * C

-254.00 * A * B

-196.50 * A * C

+166.79 * B * C

+218.98 * A * B * C

Final Equation in Terms of Actual Factors:

waktu basah =

+386.18417

+194.15583 * HPMC

-239.47167 * Manitol

-229.02417 * CP

-254.00000	* HPMC * Manitol
-196.50250	* HPMC * CP
+166.79167	* Manitol * CP
+218.98000	* HPMC * Manitol * CP

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

LAMPIRAN BP

HASIL UJI ANAVA RATIO ABSORBSI FORMULASI OPTIMUM

Response 5 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	17669.45	7	2524.21	8.52	0.0002	significant
A-HPMC	*1457.79*	*1*	*1457.79*	*4.92*	*0.0414*	
B-Manitol	*1311.28*	*1*	*1311.28*	*4.43*	*0.0516*	
C-CP	*5478.15*	*1*	*5478.15*	*18.49*	*0.0006*	
AB	*3351.62*	*1*	*3351.62*	*11.31*	*0.0040*	
AC	*5064.97*	*1*	*5064.97*	*17.09*	*0.0008*	
BC	*227.12*	*1*	*227.12*	*0.77*	*0.3943*	
ABC	*778.531*		*778.53*	*2.63*	*0.1246*	
Pure Error	4740.7516		296.30			
Cor Total	22410.20	23				

The Model F-value of 8.52 implies the model is significant. There is only a 0.02% 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, C, AB, AC 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.	17.21		R-Squared	0.7885
Mean103.53		Adj R-Squared	0.6959	
C.V. %	16.63		Pred R-Squared	0.5240
PRESS	10666.69		Adeq Precision	9.830

The "Pred R-Squared" of 0.5240 is in reasonable agreement with the "Adj R-Squared" of 0.6959.
"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 9.830 indicates an adequate signal. This model can be used to navigate the design space.

Coefficient Factor	Standard Estimate	df	95% CI Error	95% CI Low	High	VIF
Intercept	103.53	1	3.51	96.08	11	0.98
A-HPMC	7.79	1	3.51	0.35	15.24	1.00
B-Manitol	7.39	1	3.51	-0.057	14.84	1.00
C-CP	15.11	1	3.51	7.66	22.56	1.00
AB	11.82	1	3.51	4.37	19.27	1.00
AC	14.53	1	3.51	7.08	21.98	1.00
BC	3.08	1	3.51	-4.37	10.52	1.00
ABC	5.70	1	3.51	-1.75	13.14	1.00

Final Equation in Terms of Coded Factors:

ratio =

+103.53

+7.79 * A

+7.39 * B

+15.11 * C

+11.82 * A * B

+14.53 * A * C

+3.08 * B * C

+5.70 * A * B * C

Final Equation in Terms of Actual Factors:

ratio =

+103.53106

+7.79365 * HPMC

+7.39165 * Manitol

+15.10815 * CP

+11.81740 * HPMC * Manitol

+14.52723 * HPMC * CP

+3.07623 * Manitol * CP

+5.69549 * HPMC * Manitol * CP

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LAMPIRAN BQ

CONTOH PERHITUNGAN

Contoh perhitungan Indeks kompresibilitas :

Berat granul dalam gelas ukur : 37,94 g

V sebelum tapped : 100ml

V sesudah tapped : 88 ml

Bobot jenis nyata = $\frac{W_2 - W_1}{V_1(ml)} = \frac{37,94}{100} = 0,37$

Bobot jenis mampat = $\frac{W_2 - W_1}{V_2(ml)} = \frac{37,94}{88} = 0,43$

% kompresibilitas = $\left(1 - \frac{bobot\ jenis\ nyata}{bobot\ jenis\ mampat}\right)$ x 100% = $\left(1 - \frac{0,37}{0,43}\right)$ x

100% = 13,63

$HR = \frac{\rho_{tap}}{\rho_{bulk}} = \frac{0,43}{0,37} = 1,16$

Contoh hasil perhitungan akurasi presisi:

Kons.	Massa (mg)	Abs	Kons (µg/ml)	Teoritis (µg/ml)	Perolehan kembali (%)
100%	100,9	0,254	8,125	8,024	101

Absorbansi = 0,254 → y = 0,0208 + 0,028x

Konsentrasi sample (x) = 8,125

Berat domperidone = 10,03 mg

W matrix = 90,87 mg

W sample = 100,9 mg

Konsentrasi teoritis:

10,03 (dalam 250ml HCl0,1N) = (40,12 ppm x 2 (dipipet)) / 10(ad) = 8,024 ppm

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

= (8,125/ 8,024) x 100 = 101%

%KV =(SD / $X_{rata-rata}$)x 100= (1,25 / 99,67) x 100% = 1,25

Contoh perhitungan penetapan kadar :

Formula	Wrata-rata (mg)	W sampel (mg)	Abs	Csampel	Wd teoritis (mg)	Wd didapat (mg)	% terlepas
I	105,5	100,2	0,233	7,39	10	9,726	102,4

Absorbansi = 0,233 → y = 0,0208 + 0,028x

Konsentrasi sampel (x) = 7,39 ppm

Berat tablet rata-rata = 105,5

Berat sampel = 100,2

Berat Domperidone = 10 mg

Konsentrasi teoritis =

7,39 x 5(FP)= 36,95 x (250/1000)= (9,2375 mg x 105,5)/100,2 = 9,726 mg

% Perolehan kembali = (9,276mg / 10mg)x 100% = 102,4

KV= (SD / $X_{rata-rata}$) x 100% = (5,76 / 97,8) x 100% = 5,8%

Contoh perhitungan %obat terlepas:

T30menit

Absorbansi = 0,274 → y= 0,0208 + 0,028x

Csampel = 8,82 ppm

Wpada PK = 9,365

Wt = 8,82 x 0,9 = 7,902

% obat terrlepas = (7,902/9,365) * 100 = 84,76 %

Contoh perhitungan AUC

tn-1 = 25

tn = 30

wtn = 7,938

wtn-1 = 7,812

AUC = ((7,812 + 7,938)/ 2)*(30 – 25) = 39,375

%ED = (jumlah AUC / (30 * Wteoritis)) * 100 = (237,85 /(30*90,365))*100 = 84,6

LAMPIRAN BR

SERTIFIKAT BAHAN MCC PH 101

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

4083/BB/XII/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. % >250 μm (60 mesh)	LT 8.0	0.8
Particle size, wt. % >150 μm (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.

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.

P.T. WARIS
JAKARTA

Shuji Onishi

Shuji ONISHI
Manager
Quality Assurance Section
CEOLUS Production Department

LAMPIRAN BS

SERTIFIKAN BAHAN LAKTOSA

Sertifikat Analisis Laktosa

DMV INTERNATIONAL

Certificate of analysis

Issue date
20.10.2004
Purchase order
002762/PH/01469
Delivery item
80258824 000010
Order item
221769 000010
Total Quantity Item
20.000 KG

Material:
Pharmatose 200 M.
Lactose USP/NF,Ph.Eur,JP
in multi layer paper bag with a poly-
ethylene innerbag contents 25 kg net.
Description: Lactose Monohydrate USP/NF, Ph.Eur., JP
White, crystalline powder, odourless
Particle size characteristics: d10 10 ± 10 µm
d50 40 ± 15 µm
d90 95 ± 25 µm
Lactose monohydrate min. 99.0 %
Identification: Complies Pharmacopoeia tests

Lot: 10194470 Quantity: 20.000 KG
Manufacture date: 09.2004 Expiry date: 08.2007

Characteristic	Unit	SPECIFICATION Lower Limit	Upper Limit	Value
Water (KF)	%	4,5	5,5	4,9
Loss on drying	%	0,0	0,5	0,3
Specific rotation 20°C anhydr.	NON	54,4	55,9	55,2
Residue on ignition/Sulph.Ash	%	0,00	0,10	0,05
Absorb.1%, 1 cm at 270-300 nm	NON	0,00	0,07	0,01
Absorb.1%, 1 cm at 210-220 nm	NON	0,00	0,25	0,04
Absorb.10%, 1 cm at 400 nm	NON	0,00	0,04	0,01
Appearance of solution (Ph.Eur Clear and not more coloured than ref.BY7				Passes test
Clarity and Colour of Solution Clear and colourless or nearly colourless				Passes test
Acidity (ml 0.1N NaOH/6g)	ml/6g	0,0	0,4	0,2
Heavy Metals (max. 5 ppm)				Passes test
Particle size (PSD) % <45 µm	%	50,0	65,0	56,4
Particle Size (PSD) % < 100 µm	%	90,0	100,0	93,1
Particle size (PSD) % <150 µm	%	96,0	100,0	98,6

(This is an electronic document)

LAMPIRAN BT

SERTIFIKAT BAHAN CROSPOVIDONE

BASF

The Chemical Company

Certificate of Analysis

BASF South East Asia Pte

Please note that the certificates of analysis are also conveniently available online and around the clock at www.worldaccount.basf.com

Fax No 00626452306

PT MEGASETIA AGUNG KIMIA

NO.7-10 RT.014 RW.013 SUNTER AGUNG

14350 TANJUNG PRIOK JAKARTA UTARA

Indonesia

2012-12-18
Fr. Dr.rer.nat. Anna Pfeifer
anna.pfeifer@basf.com
+49 621 60-52890
Certificate No 1027
Page 1 of 3

Certificate of Analysis according to DIN 55350-18-4.2.2

Kollidon® CL / Crospovidone

40KG PE-Drum, removable head
Purchase Order/Customer Product#
585/11/2012
00000000050000695

Material	50000695	
Order	6000594673	000010
Delivery	6200570755	000010
Lot	48684347G0	
Lot/Qty	2000.000	KG
Total	2000.000	KG
Transport	PCIU3856900	

Test Parameter	Requirements	UoM	Results
Identification (IR)	must conform		conforms
Peroxides	Max.: 400	mg/kg	68
pH-value (1 % suspension in water)	Min.: 5.0 Max.: 8.0		5.7
Water soluble substances	Max.: 1.5	g/100g	0.2
Water soluble substances (JPE)	must conform (max.75 mg Residue)		conforms
N-Vinylpyrrolidone (GC)	Max.: 10	mg/kg	<2
Arsenic *	must conform (max.: 2 mg/kg)		conforms
Heavy metals *	must conform (max.: 10 mg/kg)		conforms
Loss on drying	Max.: 5.0	g/100g	1.9
Water	Max.: 5.0	g/100g	2.6
Residue on ignition *	must conform (max.: 0.1 g/100g)		conforms

The aforementioned data shall constitute the agreed contractual quality of the product at the time of passing of risk. The data are controlled at regular intervals as part of our quality assurance program. Neither these data nor the properties of product specimens shall imply any legally binding guarantee of certain properties or of fitness for a specific purpose. No liability of ours can be derived therefrom.

This is a computer-generated document. No signature is required.

LAMPIRAN BU

SERTIFIKAT BAHAN MANITOL

ROQUETTE

LC 1 EEJ5 CERTIFICATE OF ANALYSIS / COMPLIANCE PAGE 1

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PT SIGNA HUSADA
JALAN DAAN MOGOT KM 17
JAKARTA 11840
INDONESIA

PEARLITOL 160 C

CUSTOMER.... SIGNA HUSADA/INDONES

450001 D

INVOICE..... PPY60E1
TONNAGE..... 13.000 KG
CONTRACT.... F92365G
ORDER..... RQF-15/12
BATCH..... E664R
MANUF&TESTED 15 MARCH 2012

EXPIRY DATE. 15 MAR 2017

E.P./U.S.P.

DESCRIPTION WHITE CRYSTALLINE POWDER
ODOURLESS, SWEET TASTE

MEANING TESTED = ANALYZED
MONITORED = MONITORING PLAN
GUARANTEED = COMPLIANCE DATA

APPEARANCE		CONFORM	TESTED
APPEARANCE IN SOLUTION		CONFORM	TESTED
LOSS ON DRYING	%	0,08	TESTED
INFRA-RED		CONFORM	TESTED
MELTING POINT	DEG	166	TESTED
START OF MELTING	DEG	166	TESTED
END OF MELTING	DEG	167	TESTED
SPECIFIC ROTATION(BORATE)	DEG.	+ 23,5	TESTED
SPECIFIC ROT.MOLYBDATE	DEG	+ 140,1	TESTED
CONDUCTIVITY	MICROS/C	0,8	TESTED
REDUCING SUGARS	*(USP)	CONFORM	TESTED
D-MANNITOL BY HPLC	%	99,1	TESTED

LAMPIRAN BV

SERTIFIKAT BAHAN HPMC

THE DOW CHEMICAL COMPANY
SALES SPECIFICATION

Page: 1

Date Printed: 9 APR 2009

SPECIFIED MATERIAL: 00053981-S

Effective: 08 APR 2009
Supersedes: 26 AUG 2008

NAME: METHOCEL* K4M Premium Hydroxypropyl Methylcellulose

MATERIAL DESCRIPTION:
Color: white to off-white
Odor: odorless
Appearance/Physical State: powder

GOVERNMENT/INDUSTRY STANDARDS:
Current EP - European Pharmacopoeia
Current E464 - European Parliament and Council Directive
Current JP - Japanese Pharmacopoeia
Current USP - United States Pharmacopeia
U.S. FDA GRAS Notification GRN 000213
U.S. FDA 21 CFR 172.874

TEST REQUIREMENTS

TEST ITEM AND CONDITION	LIMIT	UNIT	METHOD	N
TESTED ON EACH BATCH:				
Apparent Viscosity, Brookfield, 2% in water, @ 20degC	2663-4970 3550 Nom	mPa.s	Current USP/EP/JP	1
Loss on Drying	5.0 Max	%	Current USP/EP/JP	
Residue on Ignition	1.5 Max	%	Current USP/JP	
Ash, Sulfated	1.5 Max	%	Current EP	
pH, 2% in Water	5.0-8.0		Current USP/EP/JP	
Assay, Methoxyl	19.0-24.0	%	Current USP/EP/JP	
Assay, Hydroxypropoxyl	7.0-12.0	%	Current USP/EP/JP	
Appearance, Opalescence	Pass		Current EP	
Appearance, Solution Color	Pass		Current EP	
AUDIT-BASED TESTS:				2
Identification Tests	Pass		Current USP/EP/JP	3

Continued on Next Page

LAMPIRAN BW

SERTIFIKAT BAHAN MG-STEARAT

PETER GREVEN
Partner der Industrie

QUALITÄTSMANAGEMENT

CERTIFICATE OF ANALYSIS

customer: PT. BRATACO
contact person:
FAX: 0062213522734
your order-number: PTB-1393/VII/07 our order-number: 0717837
delivered on: 14.08.2007 quantity: 9000
brand: LIGA MAGNESIUM STEARATE MF-2V VEGETABLE charge-no. C714046
manufacturing date: 2007-08-07 expiry date: 2009-08-07

The product is in accordance with the USP29/NF24/BP2003/Ph.Eur 5th ed./DAB10/JP 14th. ed./FCC 5th. ed.3

parameter	unit	method	lower	Specification	upper	result
Identification A	aC	Ph.Eur				59
Identification A	metal reactio	USP/NF				passes test
Identification B	retention time	USP/NF				retentions match
Acidity or	ml 0,01N HCl	Ph.Eur				<0,6
Alkalinity	ml 0,01 N NaC	Ph.Eur				<0,5
Heavy metals as Pb	ppm	JP				<20
Lead	ppm	BAE 300-B				<1
Cadmium	ppm	BAE 300-B				<1
Nickel	ppm	BAE 300-B				<1
Sulphate	%	Ph.Eur				<0,5
Acid value of the fatty acid	mg KOH/g	Ph.Eur				204,8
Relative content of stearic acid	%	USP/NF				67,6
Rel. cont. of stearic and palmetic acid	%	USP/NF				99,2
Aerobic microbial count	cfu/g	USP/NF				<10
Molds & Yeasts	cfu/g	USP/NF				<10
Escherichia coli	cfu/10g	USP/NF				absent
Salmonella Species	cfu/25g	USP/NF				absent
Organic volatile impurities		USP/NF				meets USP/NF
Loss on drying	%	BAE 600				3,7
Magnesium content	%	BAE 200 c				4,8
Free fatty acid	%	BAE 400				0,5
Sieve residue at 200 mesh	%	BAE 605				0,4
Bulk density tapped	g/ml	BAE 611a				0,35
specific surface area BET	m2/g	USP/NF				5,9
Contamination		BAE 001				In accordance
Chloride	ppm	BAE-627				<100

T/C REFERENCE AND
IMPORT APPLICATION NO. 031/030/5217/07B

PETER GREVEN
Peter Greven Nederland B.V.
Edisonstraat 1 NL-5928 PA Venlo

Venlo, 16.08.07

e datas of the above mentioned delivery are based upon careful test according to the guidlines of our ility assurance system. They do not release the customer from entry control. Besides we do not garantee izial properties for particular applications.
a certificate was issue electronically and does not bear a signature.

LAMPIRAN BX

SERTIFIKAT BAHAN DOMPERIDONE

VASUDHA PHARMA CHEM LIMITED
78/A, VENGAL RAO NAGAR, HYDERABAD-38
ANDHRA PRADESH, INDIA
PHONE:+91-40-2381 2046, 2371 1717, FAX: 91-40-2381 1576
E-MAIL.: vasudha@vasudhapharma.com, Website: www.vasudhapharma.com

Name of the product	:	DOMPERIDONE	Page No.	:	2 of 2
Batch Number	:	BDOM/1106090	A.R.No	:	BDOM/11090
Manufacturing Date	:	JUN 2011	Expiry Date	:	MAY 2016
Dispatch Quantity	:	30.0 Kg	Analyzed on	:	18/06/2011
Customer Name/ code	:	PT Taterasa			

S.No	TEST	RESULT	SPECIFICATION
3.2	Heavy metals (ppm)	Less than 20	Not more than 20
3.3	Loss on drying(%,w/w)	0.34	Not more than 0.5
3.4	Sulphated Ash(%,w/w)	0.06	Not more than 0.1
3.5	Assay (By titrimetry, %w/w, on dried basis)	99.53	Not less than 99.0 and Not more than 101.0
3.6	Related substances (By HPLC, %)		
	Impurity-A	0.06	Not more than 0.25
	Impurity-B	Not detected	Not more than 0.25
	Impurity-C	Not detected	Not more than 0.25
	Impurity-D	0.14	Not more than 0.25
	Impurity-E	Not detected	Not more than 0.25
	Impurity-F	Not detected	Not more than 0.25
	Unspecified impurities	Not detected	Not more than 0.10
	Total impurity	0.19	Not more than 0.50

REMARKS: The material complies as per the BP specification.

PREPARED BY: 21/06/2011 CHECKED BY : 21/06/2011 APPROVED BY: 21/06/11

Works

M/s. VASUDHA PHARMA CHEM LIMITED, Unit-II, Plot No: 79, I.N.Pharma City, Thanam Village, Parawada Mandalam, Visakhapatnam – 531 021, Andhra Pradesh, India.

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LAMPIRAN BY

TABEL UJI r

n	Taraf Signifikan		n	Taraf Signifikan		n	Taraf Signifikan	
	5%	1%		5%	1%		5%	1%
3	0,997	0,999	27	0,381	0,487	55	0,266	0,345
4	0,950	0,990	28	0,374	0,478	60	0,254	0,330
5	0,878	0,959	29	0,367	0,470	65	0,244	0,317
6	0,811	0,917	30	0,361	0,463	70	0,235	0,306
7	0,754	0,874	31	0,355	0,456	75	0,227	0,296
8	0,707	0,834	32	0,349	0,449	80	0,220	0,286
9	0,666	0,798	33	0,344	0,442	85	0,213	0,278
10	0,632	0,765	34	0,339	0,436	90	0,207	0,270
11	0,602	0,735	35	0,334	0,430	95	0,202	0,263
12	0,576	0,708	36	0,329	0,424	10	0,195	0,256
13	0,553	0,684	37	0,325	0,418	12	0,176	0,230
14	0,532	0,661	38	0,320	0,413	15	0,159	0,210
15	0,514	0,641	39	0,316	0,408	17	0,148	0,194
16	0,497	0,623	40	0,312	0,403	20	0,138	0,181
17	0,482	0,606	41	0,308	0,398	30	0,113	0,148
18	0,468	0,590	42	0,304	0,393	40	0,098	0,128
19	0,456	0,575	43	0,301	0,389	50	0,088	0,115
20	0,444	0,561	44	0,297	0,384	60	0,080	0,105
21	0,433	0,549	45	0,294	0,380	700	0,074	0,097
22	0,423	0,537	46	0,291	0,376	800	0,070	0,091
23	0,413	0,526	47	0,288	0,372	900	0,065	0,086
24	0,404	0,515	48	0,284	0,368	000	0,062	0,081
25	0,396	0,505	49	0,281	0,364			
26	0,388	0,496	50	0,279	0,361			

LAMPIRAN BZ

TABEL UJI F

Titik Persentase Distribusi F untuk Probabilita = 0,05

df untuk penyebut (N2)	df untuk pembilang (N1)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	161	199	216	225	230	234	237	239	241	242	243	244	245	245	246
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40	19.40	19.41	19.42	19.42	19.43
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.76	8.74	8.73	8.71	8.70
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.94	5.91	5.89	5.87	5.86
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.70	4.68	4.66	4.64	4.62
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	3.98	3.96	3.94
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.60	3.57	3.55	3.53	3.51
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.31	3.28	3.26	3.24	3.22
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.10	3.07	3.05	3.03	3.01
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.94	2.91	2.89	2.86	2.85
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.82	2.79	2.76	2.74	2.72
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.72	2.69	2.66	2.64	2.62
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.63	2.60	2.58	2.55	2.53
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.57	2.53	2.51	2.48	2.46
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.51	2.48	2.45	2.42	2.40
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.46	2.42	2.40	2.37	2.35
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.41	2.38	2.35	2.33	2.31
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	2.31	2.29	2.27
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.34	2.31	2.28	2.26	2.23
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.31	2.28	2.25	2.22	2.20
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	2.22	2.20	2.18
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.26	2.23	2.20	2.17	2.15
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.24	2.20	2.18	2.15	2.13
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.22	2.18	2.15	2.13	2.11
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.20	2.16	2.14	2.11	2.09
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.12	2.09	2.07
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25	2.20	2.17	2.13	2.10	2.08	2.06
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.15	2.12	2.09	2.06	2.04
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22	2.18	2.14	2.10	2.08	2.05	2.03
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.13	2.09	2.06	2.04	2.01
31	4.16	3.30	2.91	2.68	2.52	2.41	2.32	2.25	2.20	2.15	2.11	2.08	2.05	2.03	2.00
32	4.15	3.29	2.90	2.67	2.51	2.40	2.31	2.24	2.19	2.14	2.10	2.07	2.04	2.01	1.99
33	4.14	3.28	2.89	2.66	2.50	2.39	2.30	2.23	2.18	2.13	2.09	2.06	2.03	2.00	1.98
34	4.13	3.28	2.88	2.65	2.49	2.38	2.29	2.23	2.17	2.12	2.08	2.05	2.02	1.99	1.97
35	4.12	3.27	2.87	2.64	2.49	2.37	2.29	2.22	2.16	2.11	2.07	2.04	2.01	1.99	1.96
36	4.11	3.26	2.87	2.63	2.48	2.36	2.28	2.21	2.15	2.11	2.07	2.03	2.00	1.98	1.95
37	4.11	3.25	2.86	2.63	2.47	2.36	2.27	2.20	2.14	2.10	2.06	2.02	2.00	1.97	1.95
38	4.10	3.24	2.85	2.62	2.46	2.35	2.26	2.19	2.14	2.09	2.05	2.02	1.99	1.96	1.94
39	4.09	3.24	2.85	2.61	2.46	2.34	2.26	2.19	2.13	2.08	2.04	2.01	1.98	1.95	1.93
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.04	2.00	1.97	1.95	1.92
41	4.08	3.23	2.83	2.60	2.44	2.33	2.24	2.17	2.12	2.07	2.03	2.00	1.97	1.94	1.92
42	4.07	3.22	2.83	2.59	2.44	2.32	2.24	2.17	2.11	2.06	2.03	1.99	1.96	1.94	1.91
43	4.07	3.21	2.82	2.59	2.43	2.32	2.23	2.16	2.11	2.06	2.02	1.99	1.96	1.93	1.91
44	4.06	3.21	2.82	2.58	2.43	2.31	2.23	2.16	2.10	2.05	2.01	1.98	1.95	1.92	1.90
45	4.06	3.20	2.81	2.58	2.42	2.31	2.22	2.15	2.10	2.05	2.01	1.97	1.94	1.92	1.89

LAMPIRAN CA

TABEL UJI T

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cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	**0.50**	**0.25**	**0.20**	**0.15**	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**	**0.001**	**0.0005**
two-tails	**1.00**	**0.50**	**0.40**	**0.30**	**0.20**	**0.10**	**0.05**	**0.02**	**0.01**	**0.002**	**0.001**
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										