

LAMPIRAN A
HASIL UJI MUTU FISIK GRANUL

Mutu fisik yang diuji	Batch	Formula Tablet Propranolol HCl				Persyaratan
		FA	FB	FC	FD	
Kadar air (persen)	I	3,39	3,13	3,88	3,36	3-5 (Voigt, 1995)
	II	3,10	3,03	3,57	3,45	
	III	3,72	3,55	3,78	3,17	
	\bar{X}	3,40	3,24	3,74	3,33	
	SD	0,31	0,28	0,16	0,14	
Waktu alir (detik)	I	6,92	9,28	6,84	7,72	Tidak lebih dari 10 detik (Banker & Anderson, 1986)
	II	7,08	9,08	7,08	7,58	
	III	7,34	9,40	6,92	7,89	
	\bar{X}	7,11	9,25	6,95	7,73	
	SD	0,21	0,16	0,12	0,16	
Sudut diam (derajat)	I	29,98	34,14	31,55	32,42	25-40 (Banker & Anderson, 1986)
	II	32,65	33,11	32,65	32,18	
	III	32,89	34,53	32,11	32,57	
	\bar{X}	31,84	33,93	32,10	32,39	
	SD	1,62	0,73	0,55	0,20	
Indeks kompresi bilitas (persen)	I	17,99	21,01	17,99	18,01	18 -21 = cukup baik (Siregar, 1992)
	II	16,00	19,00	17,00	17,99	
	III	16,01	20,01	18,00	17,00	
	\bar{X}	16,67	20,01	17,66	17,67	
	SD	1,15	1,01	0,57	0,58	

LAMPIRAN B
HASIL UJI KEKERASAN TABLET SUBLINGUAL
PROPRANOLOL HCl

Batch 1

No	Kekerasan Tablet Propranolol (kp)			
	Formula A	Formula B	Formula C	Formula D
1	5,9	4,7	7,1	5,4
2	5,9	4,7	6,9	5,6
3	6,1	4,8	6,9	5,5
4	6,3	4,7	6,8	5,9
5	6,5	5,0	6,7	5,6
6	6,4	4,9	6,7	5,8
7	5,9	4,6	6,9	5,9
8	6,2	4,7	6,9	5,5
9	6,4	4,7	6,6	5,9
10	6,2	4,8	6,9	5,7
$\bar{X} \pm SD$	6,18 \pm 0,23	4,76 \pm 0,12	6,84 \pm 0,14	5,68 \pm 0,19
SD rel (%)	3,64	2,47	2,09	3,30

Batch II

No	Kekerasan Tablet Propranolol (kp)			
	Formula A	Formula B	Formula C	Formula D
1	6,3	4,9	6,9	5,1
2	6,4	4,6	6,7	5,5
3	6,1	4,5	6,9	5,4
4	6,4	4,6	6,8	5,1
5	6,1	4,6	6,8	5,3
6	5,9	4,9	6,9	5,0
7	6,2	4,8	6,5	5,5
8	6,1	4,7	6,6	5,4
9	6,2	4,8	6,8	5,2
10	6,2	4,7	6,7	5,4
$\bar{X} \pm SD$	6,19 \pm 0,15	4,71 \pm 0,14	6,76 \pm 0,13	5,29 \pm 0,18
SD rel (%)	2,46	2,91	1,99	3,39

Batch III

No	Kekerasan Tablet Propranolol (kp)			
	Formula A	Formula B	Formula C	Formula D
1	6,2	4,6	6,8	5,2
2	6,2	4,6	6,8	5,4
3	5,9	4,8	6,7	5,6
4	6,2	4,7	6,7	5,5
5	5,8	4,8	6,8	5,7
6	6,1	4,5	6,8	5,6
7	5,8	4,5	6,6	5,2
8	6,2	4,9	6,9	5,3
9	6,1	4,7	6,9	5,2
10	5,7	4,8	6,7	5,3
$\bar{X} \pm SD$	6,02 \pm 0,20	4,69 \pm 0,14	6,77 \pm 0,09	5,40 \pm 0,19
SD rel (%)	3,3	2,92	1,40	3,49

LAMPIRAN C
HASIL UJI KERAPUHAN TABLET SUBLINGUAL
PROPRANOLOL HCl

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\bar{X} \pm SD$
A	1	6,10	6,06	0,66	0,61 ± 0,09
	2	6,11	6,07	0,66	
	3	6,04	6,01	0,50	
B	1	5,98	5,94	0,67	0,62 ± 0,09
	2	5,98	5,94	0,67	
	3	5,97	5,94	0,51	
C	1	6,08	6,07	0,16	0,17 ± 0,01
	2	6,02	6,01	0,17	
	3	6,06	6,05	0,17	
D	1	6,11	6,08	0,49	0,50 ± 0,01
	2	6,00	5,97	0,50	
	3	6,07	6,04	0,50	

LAMPIRAN D
HASIL UJI WAKTU HANCUR TABLET SUBLINGUAL
PROPRANOLOL HCI

Replikasi	Waktu Hancur (menit)			
	Formula A	Formula B	Formula C	Formula D
1	24	3	28	11
2	28	3	26	6
3	28	4	28	11
$\bar{x} \pm SD$	26,67 \pm 2,31	3,33 \pm 0,58	27,33 \pm 1,15	9,33 \pm 2,89

LAMPIRAN E

HASIL UJI KESERAGAMAN KANDUNGAN TABLET PROPRANOLOL HCl

Hasil Uji Keragaman Kandungan Tablet Formula A *Batch* I

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,390	16,07	307,4	16,39	98,05
0,392	16,18	310,5	17,14	94,40
0,387	15,91	306,8	16,73	95,10
0,369	14,96	303,9	16,42	91,11
0,389	16,02	301,7	16,18	99,01
0,378	15,44	304,2	16,45	93,86
0,380	15,54	302,4	16,26	95,57
0,386	15,86	303,7	16,40	96,71
0,383	15,70	302,9	16,31	96,26
0,376	15,33	308,3	16,90	90,71
			X	95,08
			SD	2,69
			KV	2,83

Hasil Uji Keragaman Kandungan Tablet Formula A *Batch* II

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,370	15,01	302,7	16,29	92,14
0,378	15,44	303,2	16,34	94,49
0,375	15,28	310,5	17,14	89,15
0,369	14,96	304,1	16,44	91,00
0,374	15,22	307,3	16,79	90,65
0,377	15,38	307,9	16,85	91,28
0,371	15,07	302,2	16,24	92,80
0,374	15,22	302,5	16,27	93,55
0,367	14,85	306,7	16,72	88,82
0,372	15,12	307,5	16,81	89,95
			X	91,38
			SD	1,86
			KV	2,04

Hasil Uji Keragaman Kandungan Tablet Formula A *Batch* III

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,387	15,91	301,2	16,13	98,64
0,371	15,07	302,4	16,26	92,68
0,380	15,54	301,7	16,18	96,04
0,378	15,44	300,8	16,09	95,96
0,369	14,96	304,5	16,48	90,78
0,385	15,81	300,7	16,07	98,38
0,390	16,07	305,8	16,62	96,69
0,376	15,33	303,1	16,33	93,88
0,363	14,64	303,7	16,36	89,49
0,374	15,22	301,6	16,17	94,12
			X	94,67
			SD	3,06
			KV	3,23

Hasil Uji Keragaman Kandungan Tablet Formula B *Batch* I

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,383	15,70	302,5	16,27	96,50
0,361	14,54	299,2	15,91	91,39
0,372	15,12	303,5	16,36	92,42
0,365	14,75	301,7	16,18	91,16
0,381	15,59	302,9	16,31	95,59
0,369	14,96	299,5	15,95	93,79
0,368	14,91	303,9	16,42	90,80
0,374	15,22	302,4	16,26	93,60
0,385	15,81	303,1	16,33	96,82
0,371	15,07	302,7	16,29	92,51
			X	93,46
			SD	2,20
			KV	2,36

Hasil Uji Keragaman Kandungan Tablet Formula B *Batch* II

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,367	14,85	299,4	15,94	93,16
0,373	15,17	299,8	15,98	94,93
0,381	15,59	300,5	16,05	97,13
0,369	14,96	301,7	16,18	92,46
0,362	14,59	300,9	16,10	90,62
0,371	15,07	303,2	16,34	92,23
0,360	14,48	301,3	16,14	89,71
0,366	14,80	302,5	16,27	90,96
0,361	14,54	302,6	16,28	89,31
0,384	15,75	303,4	16,36	96,27
			X	92,68
			SD	2,70
			KV	2,91

Hasil Uji Keragaman Kandungan Tablet Formula B *Batch* III

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,375	15,28	303,6	16,39	93,23
0,367	14,85	300,9	16,10	92,24
0,374	15,22	303,7	16,40	92,80
0,370	15,01	301,8	16,19	92,71
0,376	15,33	302,1	16,22	94,51
0,369	14,96	300,2	16,02	93,38
0,374	15,22	302,7	16,29	93,43
0,373	15,17	303,4	16,36	92,73
0,371	15,07	301,3	16,14	93,37
0,369	14,96	300,5	16,05	93,21
			X	93,16
			SD	0,61
			KV	0,66

Hasil Uji Keragaman Kandungan Tablet Formula C *Batch* I

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,370	15,01	299,9	15,99	93,87
0,373	15,17	300,1	16,01	94,75
0,389	16,02	304,2	16,45	97,39
0,375	15,28	303,9	16,42	93,06
0,386	15,86	302,2	16,24	97,66
0,372	15,12	303,7	16,36	92,42
0,374	15,22	304,6	16,49	92,30
0,375	15,28	300,8	16,09	94,97
0,382	15,65	302,6	16,28	96,13
0,374	15,22	301,4	16,15	94,24
			X	94,68
			SD	1,90
			KV	2,01

Hasil Uji Keragaman Kandungan Tablet Formula C *Batch* II

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,372	15,12	304,1	16,44	91,97
0,370	15,01	299,9	15,99	93,87
0,378	15,44	303,9	16,42	94,03
0,377	15,38	302,7	16,29	94,41
0,371	15,07	304,2	16,45	91,61
0,378	15,44	304,6	16,49	93,63
0,373	15,17	300,4	16,04	94,58
0,374	15,22	300,9	16,10	94,53
0,376	15,33	303,7	16,36	93,70
0,370	15,01	302,8	16,30	92,09
			X	93,44
			SD	1,13
			KV	1,21

Hasil Uji Keragaman Kandungan Tablet Formula C *Batch* III

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,368	14,91	302,9	16,31	91,42
0,371	15,07	300,1	16,01	94,13
0,383	15,70	304,6	16,49	95,21
0,388	15,96	304,1	16,44	97,08
0,370	15,01	300,5	16,05	93,52
0,367	14,85	303,8	16,41	90,49
0,384	15,75	301,6	16,17	97,40
0,378	15,44	303,9	16,42	94,03
0,373	15,17	304,6	16,49	92,00
0,380	15,54	302,4	16,26	95,57
			X	94,08
			SD	2,31
			KV	2,46

Hasil Uji Keragaman Kandungan Tablet Formula D *Batch* I

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,369	14,96	300,4	16,04	93,27
0,383	15,70	301,7	16,18	97,03
0,376	15,33	302,5	16,27	94,22
0,368	14,91	301,3	16,14	92,38
0,374	15,22	303,2	16,34	93,15
0,369	14,96	300,8	16,09	92,98
0,373	15,17	301,4	16,15	93,93
0,367	14,85	300,5	16,05	92,52
0,386	15,86	302,7	16,29	97,36
0,374	15,22	301,8	16,19	94,01
			X	94,08
			SD	1,75
			KV	1,86

Hasil Uji Keragaman Kandungan Tablet Formula D *Batch* II

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,386	15,86	303,6	16,39	96,77
0,374	15,22	304,1	16,44	92,58
0,369	14,96	300,6	16,06	93,15
0,383	15,70	301,3	16,14	97,27
0,375	15,28	302,6	16,28	93,86
0,378	15,44	300,8	16,09	95,96
0,382	15,65	304,2	16,45	95,14
0,374	15,22	301,8	16,19	94,01
0,387	15,91	302,2	16,24	97,97
0,373	15,17	301,4	16,15	93,93
			X	95,06
			SD	1,85
			KV	1,94

Hasil Uji Keragaman Kandungan Tablet Formula D *Batch* III

Abs	C sampel	W sampel	C teoritis	Kadar (%)
0,369	14,96	302,5	16,27	91,95
0,371	15,07	300,4	16,04	93,95
0,362	14,59	300,9	16,10	90,62
0,387	15,91	303,7	16,40	97,01
0,374	15,22	302,8	16,30	93,37
0,368	14,91	300,6	16,06	92,84
0,385	15,81	303,5	16,38	96,52
0,376	15,33	302,1	16,22	94,51
0,372	15,12	303,7	16,36	92,42
0,379	15,49	300,4	16,04	96,57
			X	93,98
			SD	2,16
			KV	2,30

LAMPIRAN F
HASIL PENETAPAN KADAR TABLET SUBLINGUAL
PROPRANOLOL HCl

Batch I

Formula	Repli kasi	Absor bansi	Csampil (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\bar{X} \pm SD$	SD rel (%)
A	1	0,390	16,07	16,39	98,05	96,78	1,28
	2	0,380	15,54	16,26	95,57	±	
	3	0,386	15,86	16,40	96,71	1,24	
B	1	0,383	15,70	16,27	96,50	95,70	1,74
	2	0,369	14,96	15,95	93,79	±	
	3	0,385	15,81	16,33	96,82	1,66	
C	1	0,373	15,17	16,01	94,75	96,60	1,66
	2	0,389	16,02	16,45	97,39	±	
	3	0,386	15,86	16,24	97,66	1,60	
D	1	0,383	15,70	16,18	97,03	96,21	1,79
	2	0,376	15,33	16,27	94,22	±	
	3	0,386	15,86	16,29	97,36	1,37	

Batch II

Formula	Repli kasi	Absor bansi	Csampil (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\bar{X} \pm SD$	SD rel (%)
A	1	0,378	15,44	16,34	94,49	93,61	0,91
	2	0,371	15,07	16,24	92,80	±	
	3	0,374	15,22	16,27	93,55	0,85	
B	1	0,373	15,17	15,98	94,93	96,11	1,15
	2	0,381	15,59	16,05	97,13	±	
	3	0,384	15,75	16,36	96,27	1,11	
C	1	0,370	15,01	15,99	93,87	94,33	0,42
	2	0,373	15,17	16,04	94,58	±	
	3	0,374	15,22	16,10	94,53	0,40	
D	1	0,386	15,86	16,39	96,77	96,90	1,04
	2	0,378	15,44	16,09	95,96	±	
	3	0,387	15,91	16,24	97,97	1,01	

Batch III

Formula	Replikasi	Absorbansi	Csampil (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\bar{X} \pm SD$	SD rel (%)
A	1	0,385	15,81	16,07	98,38	96,40	2,22
	2	0,390	16,07	16,62	96,69	±	
	3	0,374	15,22	16,17	94,12	2,14	
B	1	0,376	15,33	16,22	94,51	93,78	0,68
	2	0,369	14,96	16,02	93,38	±	
	3	0,374	15,22	16,29	93,43	0,64	
C	1	0,388	15,96	16,44	97,08	96,68	1,01
	2	0,384	15,75	16,17	97,40	±	
	3	0,380	15,54	16,26	95,57	0,98	
D	1	0,387	15,91	16,40	97,01	96,70	0,28
	2	0,385	15,81	16,38	96,52	±	
	3	0,379	15,49	16,04	96,57	0,27	

LAMPIRAN G

HASIL UJI DISOLUSI TABLET SUBLINGUAL PROPRANOLOL HCI PADA T = 15 MENIT

Formula	Replikasi	Absorbansi	Csampil ($\mu\text{g/ml}$)	Wt (mg)	% obat terlarut	X \pm SD	SD rel (%)
(-1)	1	0,4017	8,6745	4,3372	10,84	10,52 \pm 0,30	2,86
	2	0,3987	8,3915	4,1958	10,49		
	3	0,3966	8,1934	4,0967	10,24		
(a)	1	1,1008	74,6185	37,3093	93,27	93,44 \pm 0,16	0,17
	2	1,1024	74,7694	37,3847	93,46		
	3	1,1034	74,8638	37,4319	93,58		
(b)	1	0,3761	6,2597	3,1299	7,82	7,97 \pm 0,13	1,67
	2	0,3783	6,4672	3,2336	8,08		
	3	0,3776	6,4012	3,2006	8,00		
(ab)	1	1,0100	66,0536	33,0268	82,57	82,59 \pm 0,16	0,19
	2	1,0090	65,9593	32,9796	82,45		
	3	1,0116	66,2045	33,1023	82,76		

LAMPIRAN H
CONTOH PERHITUNGAN

Contoh perhitungan sudut diam:

Formula (-1):

$$W \text{ persegi panjang} = 4,93 \text{ gram}$$

$$W \text{ lingkaran} = 1,05 \text{ gram}$$

$$\begin{aligned} \text{Luas persegi panjang} &= 29,7 \times 21 \\ &= 623,7 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{Luas lingkaran} &= \frac{1,05 \times 623,7}{4,93} = 132,84 \end{aligned}$$

$$L = \pi \cdot r^2$$

$$\begin{aligned} r^2 &= \frac{L}{\pi} \\ &= \frac{132,84}{3,14} = 42,31 \end{aligned}$$

$$r = 6,50 \text{ cm}$$

$$\begin{aligned} \text{tg } \alpha &= \frac{t}{r} = \frac{3,75}{6,50} = 0,5769 \end{aligned}$$

$$\alpha = 29,98^\circ$$

Contoh perhitungan indeks kompresibilitas:

Formula (-1) :

$$\text{Berat gelas} = 119,14 \text{ g } (W_1)$$

$$\text{Berat gelas + granul} = 168,16 \text{ g } (W_2)$$

$$V_1 = 100 \text{ ml}$$

$$V_2 = 82 \text{ ml}$$

$$Bj \text{ nyata} = \frac{(W_2 - W_1)}{V_1} = \frac{(168,16 - 119,14)}{100} = 0,4902$$

$$Bj \text{ mampat} = \frac{(W_2 - W_1)}{V_2} = \frac{(168,16 - 119,14)}{82} = 0,5978$$

$$\% \text{ kompresibilitas} = \left(1 - \frac{Bj.nyata}{Bj.mampat} \right) \times 100\% = 17,99\%$$

Contoh perhitungan akurasi & presisi:

Replikasi	Konsentrasi	Absorbansi	Konsentrasi ($\mu\text{g/ml}$)	Teoritis ($\mu\text{g/ml}$)	Perolehan Kembali (%)	KV (%)
I	80%	0,327	12,74	12,82	99,37	0,53
	80%	0,328	12,79	12,83	99,69	
	80%	0,325	12,64	12,81	98,67	
II	100%	0,387	15,91	16,06	99,07	0,70
	100%	0,390	16,07	16,06	100,06	
	100%	0,385	15,81	16,02	98,69	
	100%	0,392	16,17	16,09	100,49	
	100%	0,386	15,86	16,02	99,00	
	100%	0,389	16,02	16,06	99,75	
	100%	0,389	16,02	16,06	99,75	
III	120%	0,449	19,19	19,23	99,79	0,65
	120%	0,454	19,45	19,24	101,09	
	120%	0,451	19,29	19,23	100,31	
				\bar{X}	99,66	0,63

Absorbansi = 0,327 \rightarrow $y = 0,0189x + 0,0859$

Konsentrasi sebenarnya = 12,74 ppm

Konsentrasi teoritis = 12,82 ppm

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

$$\begin{aligned} & 100\% \\ & = (12,74 / 12,82) \times 100\% \\ & = 99,37\% \end{aligned}$$

Untuk menghitung % KV = $\frac{SD}{\bar{X}} \times 100\%$

$$\begin{aligned} & = \frac{0,5217}{99,24} \times 100\% \\ & = 0,53\% \end{aligned}$$

Contoh perhitungan % obat terlepas:

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

Formula A replikasi 1 pada t = 15 menit

$$\% \text{ obat terlepas} = \frac{3,1299}{40} \times 100\% = 7,82\%$$

LAMPIRAN I

SERTIFIKAT ANALISIS BAHAN PROPRANOLOL HCl

kimia farma

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No.Pemeriksaan : 80977/BB/08 - 03
Tgl.Permohonan : 15 Desember 2010
Tgl.Pemeriksaan : 04 Desember 2010
C.A : Ada

14 DEC 2010

Periksa laporan HPL No : 80977/BB/08 - 02

HASIL PEMERIKSAAN BAHAN BAKU

NAMA BAHAN BAKU : PROPRANOLOL HCl (1000302) PROPRANOLOL HCl	TGL.PEMBUATAN : 13 Mei 2008 DALUARSA : 31 Mei 2013 PEMASOK : PT. Menjangan Sakti
MEREK/PRODUSEN : Societa Italiana Medicine Scandicci Italy JUMLAH KEMASAN : 3 Vat @ 25 kg = 75 kg JUM. H. CONTOH : 2 x 10 g (1 - 2)	No.BATCH : 28.051

Pemeriksaan	Hasil	Syarat	Metode
Pemerian	1 - 2 = Serbuk kristal halus berwarna putih	Serbuk berwarna putih atau hampir putih	BP. 2003
Identifikasi	1 - 2 = Benar	-	BP. 2003
Kejernihan dan warna larutan (2 gram dalam 20 ml Methanol)	Memenuhi Pengujian	-	MPK0007
Susut pengeringan (10°C konstan)	0,08%	Max,0,5 %	BP. 2003
Kadar	99,73%	-	BP. 2003
Kadar terhadap zat kering	99,81%	99,0 % - 101,0 %	BP. 2003

Kesimpulan : **DILULUSKAN/DECLAR**
 Catatan : **Bagian Pergudangan**
 Diperiksa ulang
 Tgl. 04 Jum 2010

Putri

Apoteker Penanggung Jawab PM

Jakarta, 04 Desember 2010
 Apoteker Pengawasan Mutu

Dra. Tia Mutianingsih

Drs. Hadi Kardoko

SERTIFIKAT ANALISIS BAHAN

PVP K-30

PVP K-30:

杭州南杭化工有限公司
 NANHANG INDUSTRIAL CO.,LTD
 地址:中国杭州市西湖区周浦乡姚家坞

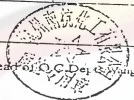
CERTIFICATE OF ANALYSIS

Product		PVP K-30 USP/BP	
Batch No.	20051213	Quantity	2625KGS
Manufacture Date	DEC.,2010	Expiry Date	DEC.,2013
ITEMS	SPECIFICATIONS	TEST RESULTS	
Characteristics	A white, fine powder	Complies	
Identification	Positive	Positive	
Water	5% max	2.8%	
Residue on ignition	0.1% max	0.02%	
K-Value	27-32	30.7	
Heavy metals(Lead)	10ppm max	Complies	
Nitrogen	11.5%-12.8%	12.2%	
Vinylpyrrolidone	0.2% max	0.032%	
Aldehydes	0.05% max	Complies	
Ph Value	5.0-7.0	3.62	
Hydrazine	1ppm max	Complies	
Peroxides	400ppm max	Complies	
	Salmonella	Negative	
Microbial Limits(By annual verification test)	Coli	Negative	
	Coliforms <1CFU/gm	Conform	
	Standard Plate Count<10,000CFU/gm	Conform	
	Mold & Yeast <1,000 CFU/gm	Conform	
Conclusion: IT CONFORMS USP/BP			

Analyst: Wang li ling

Checker: li ling

Head of QC Dept: Wang xiao fang



SERTIFIKAT ANALISIS BAHAN

XANTHAN GUM

Satiaxane™ CX 800

80 mesh xanthan gum

PROPERTIES

DISPERSION

To disperse the product without lumps:

- * premix the powder with the other dry ingredients,
 - * or, disperse it in a non-solvent medium (oil, alcohol),
- and pour the preparation into the liquid whilst stirring. Continue stirring to obtain a complete dispersion.

DISSOLUTION

The dissolution of the product depends on the medium and the process: it is improved by heat-treatment (time, temperature), shear-stress (propeller, exchanger, homogenizer).

A complete dissolution can be obtained in cold conditions.

MEDIA / USES

The product can be used in aqueous, dairy, or fruit media, with various total solids contents.

The maximum dosage is about 1.5 %, according to the medium and the required final texture.

DESCRIPTION

Satiaxane™ CX 800 is a food Additive used as a texturant. It is a cold soluble thickener which providing high viscosity and pseudo-plasticity at low concentration. Its solution shows very high resistance to acid and heat treatment as well as excellent salt tolerance and an exceptional suspension properties. With their unique rheological properties, Satiaxane™ CX 800 is well suited to the manufacture of food, pharmaceutical and cosmetic products.

Xanthan gum Satiaxane™ CX 800 conforms to the definition and specifications from JECFA (FAO/WHO), FDA (21 CFR) and European Community (Directive 96/77/EEC as amended). However, we recommend that the user ensures that this product is in compliance with the local regulations in force, particularly in the country where the product is to be consumed.

The product consists of:
* XANTHAN GUM

E 415

CHARACTERISTICS

Rheology : Viscosity in a 1 % aqueous solution (+ 1 % KCl) :
1200-1700 cps

pH : 6.0 to 8.0 - measured in a 1 % aqueous solution

Aspect, Flavour : White to cream colored powder, of neutral odour and flavour.

Particle size : 95 % less than 80 mesh (ASTM screen #75)

Loss on drying : Not more than 14 %

Bacteriological : Total plate count : Not more than 2000 CFU/gram
Yeasts and molds : Not more than 200 CFU/gram
Pathogenic bacteria
(*B. coli* to 5 grams,
Salmonella at 10 grams) : Negative by tests

PACKAGING AND STORAGE

25 Kg net contents lined with a polyethylene bag. Store away from heat and moisture. The product, when stored in the previously mentioned conditions and in its original unopened packaging, will maintain its initial properties for at least 2 years.

M - PN 3724 - 14/12/06 - 01

LAMPIRAN J
TABEL Z

z	0	1	2	3	4	5	6	7	8	9
.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
.7	.7580	.7611	.7642	.7673	.7703	.7734	.7764	.7794	.7823	.7852
.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9278	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9430	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9648	.9656	.9664	.9671	.9678	.9686	.9693	.9700	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9762	.9767
2.0	.9772	.9778	.9783	.9788	.9792	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9874	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9990	.9993	.9995	.9997	.9998	.9998	.9999	.9999	1.0000

z	0	1	2	3	4	5	6	7	8	9
- 3 .	.0013	.0010	.0007	.0005	.0003	.0002	.0002	.0001	.0001	.0000
- 2 . 9	.0019	.0018	.0017	.0017	.0016	.0016	.0015	.0015	.0014	.0014
- 2 . 8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
- 2 . 7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
- 2 . 6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
- 2 . 5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
- 2 . 4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
- 2 . 3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
- 2 . 2	.0139	.0136	.0132	.0129	.0126	.0122	.0119	.0116	.0113	.0110
- 2 . 1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
- 2 . 0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
- 1 . 9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0238	.0233
- 1 . 8	.0359	.0352	.0344	.0336	.0329	.0322	.0314	.0307	.0300	.0294
- 1 . 7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
- 1 . 6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
- 1 . 5	.0668	.0655	.0643	.0630	.0618	.0606	.0593	.0582	.0570	.0559
- 1 . 4	.0806	.0793	.0778	.0764	.0749	.0735	.0722	.0708	.0694	.0681
- 1 . 3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
- 1 . 2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
- 1 . 1	.1367	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
- 1 . 0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
- . 9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
- . 8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
- . 7	.2420	.2389	.2358	.2327	.2297	.2266	.2236	.2206	.2177	.2148
- . 6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
- . 5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
- . 4	.3448	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
- . 3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
- . 2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
- . 1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
- . 0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

LAMPIRAN K
TABEL UJI R

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

Dikutip dari: Soedigdo & Soedigdo (1977)

LAMPIRAN L
TABEL UJI HSD (0,05)

k d. k.	2	3	4	5	6	7	8	9	10	11
5	3.64	4.60	5.22	5.67	6.03	6.33	6.58	6.80	6.99	7.17
6	3.46	4.34	4.90	5.30	5.63	5.90	6.12	6.32	6.49	6.65
7	3.34	4.16	4.68	5.06	5.36	5.61	5.82	6.00	6.16	6.30
8	3.26	4.04	4.53	4.89	5.17	5.40	5.60	5.77	5.92	6.05
9	3.20	3.95	4.41	4.76	5.02	5.24	5.43	5.59	5.74	5.87
10	3.15	3.88	4.33	4.65	4.91	5.12	5.30	5.46	5.60	5.72
11	3.11	3.82	4.26	4.57	4.82	5.03	5.20	5.35	5.49	5.61
12	3.08	3.77	4.20	4.51	4.75	4.95	5.12	5.27	5.39	5.51
13	3.06	3.73	4.15	4.45	4.69	4.88	5.05	5.19	5.32	5.43
14	3.03	3.70	4.11	4.41	4.64	4.83	4.99	5.13	5.25	5.36
15	3.01	3.67	4.08	4.37	4.59	4.78	4.94	5.08	5.20	5.31
16	3.00	3.65	4.05	4.33	4.56	4.74	4.90	5.03	5.15	5.26
17	2.98	3.63	4.02	4.30	4.52	4.71	4.86	4.99	5.11	5.21
18	2.97	3.61	4.00	4.28	4.49	4.67	4.82	4.96	5.07	5.17
19	2.96	3.59	3.98	4.25	4.47	4.65	4.79	4.92	5.04	5.14
20	2.95	3.58	3.96	4.23	4.45	4.62	4.77	4.90	5.01	5.11
24	2.92	3.53	3.90	4.17	4.37	4.54	4.68	4.81	4.92	5.01
30	2.89	3.49	3.85	4.10	4.30	4.46	4.60	4.72	4.82	4.92
40	2.86	3.44	3.79	4.04	4.23	4.39	4.52	4.63	4.73	4.82
60	2.83	3.40	3.74	3.98	4.16	4.31	4.44	4.55	4.65	4.73
120	2.80	3.36	3.68	3.92	4.10	4.24	4.36	4.47	4.56	4.64
∞	2.77	3.31	3.63	3.86	4.03	4.17	4.29	4.39	4.47	4.55

Catatan kaki: Dari *Annals of mathematical statistics*. Diulang cetak seizin penerbit, The Institute of Mathematical Statistics.

Sumber: Scheffler (1987).

LAMPIRAN M

TABEL UJI F

Tabel Distribusi F

Denominators for Degrees of Freedom	Numerator Degrees of Freedom								
	1	2	3	4	5	6	7	8	9
1	161.4	199.5	215.7	224.6	230.2	234.0	236.8	238.9	240.5
2	18.81	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
3	10.73	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04
120	3.92	3.07	2.68	2.45	2.29	2.17	2.09	2.02	1.96
∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88

(Sumber: John E., 1992)

LAMPIRAN N
HASIL UJI STATISTIK KEKERASAN TABLET ANTAR FORMULA

Descriptives

Kekerasan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	6,1300	,09539	,05508	5,8930	6,3670	6,02	6,19
Formula B	3	4,7200	,03606	,02082	4,6304	4,8096	4,69	4,76
Formula C	3	6,7900	,04359	,02517	6,6817	6,8983	6,76	6,84
Formula D	3	5,4567	,20108	,11609	4,9572	5,9562	5,29	5,68
Total	12	5,7742	,81001	,23383	5,2595	6,2888	4,69	6,84

Test of Homogeneity of Variances

Kekerasan

Levene Statistic	df1	df2	Sig.
4.357	3	8	.043

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ANOVA

Kekerasan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.112	3	2.371	179.819	.000
Within Groups	.105	8	.013		
Total	7.217	11			

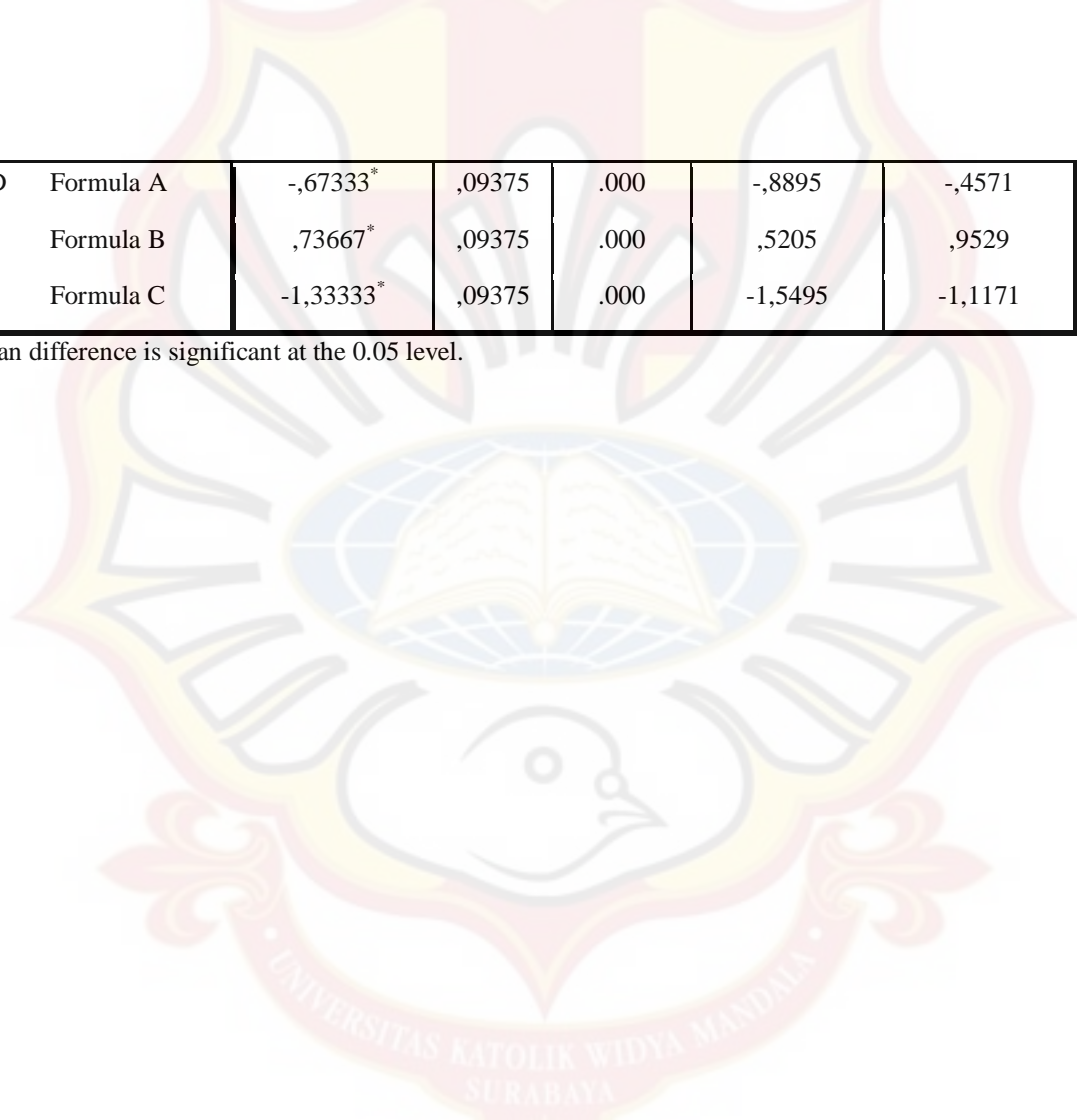
Multiple Comparisons

Kekerasan
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	1,41000*	,09375	.000	1,1938	1,6262
	Formula C	-,66000*	,09375	.000	-,8762	-,4438
	Formula D	,67333*	,09375	.000	,4571	,8895
Formula B	Formula A	-1,41000*	,09375	.000	-1,6262	-1,1938
	Formula C	-2,07000*	,09375	.000	-2,2862	-1,8538
	Formula D	-,73667*	,09375	.000	-,9529	-,5205
Formula C	Formula A	,66000*	,09375	.000	,4438	,8762
	Formula B	2,07000*	,09375	.000	1,8538	2,2862
	Formula D	1,33333*	,09375	.000	1,1171	1,5495

Formula D	Formula A	-,67333*	,09375	.000	-,8895	-,4571
	Formula B	,73667*	,09375	.000	,5205	,9529
	Formula C	-1,33333*	,09375	.000	-1,5495	-1,1171

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



LAMPIRAN O
HASIL UJI STATISTIK KERAPUHAN TABLET ANTAR FORMULA

Descriptives

Kerapuhan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	,6067	,09238	,05333	,3772	,8361	,50	,66
Formula B	3	,6167	,09238	,05333	,3872	,8461	,51	,67
Formula C	3	,1667	,00577	,00333	,1523	,1810	,16	,17
Formula D	3	,4967	,00577	,00333	,4823	,5110	,49	,50
Total	12	,4717	,19840	,05727	,3456	,5977	,16	,67

Test of Homogeneity of Variances

Kerapuhan

Levene Statistic	df1	df2	Sig.
9.339	3	8	.005

ANOVA

Kerapuhan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.399	3	.133	31.027	.000
Within Groups	.034	8	.004		
Total	.433	11			

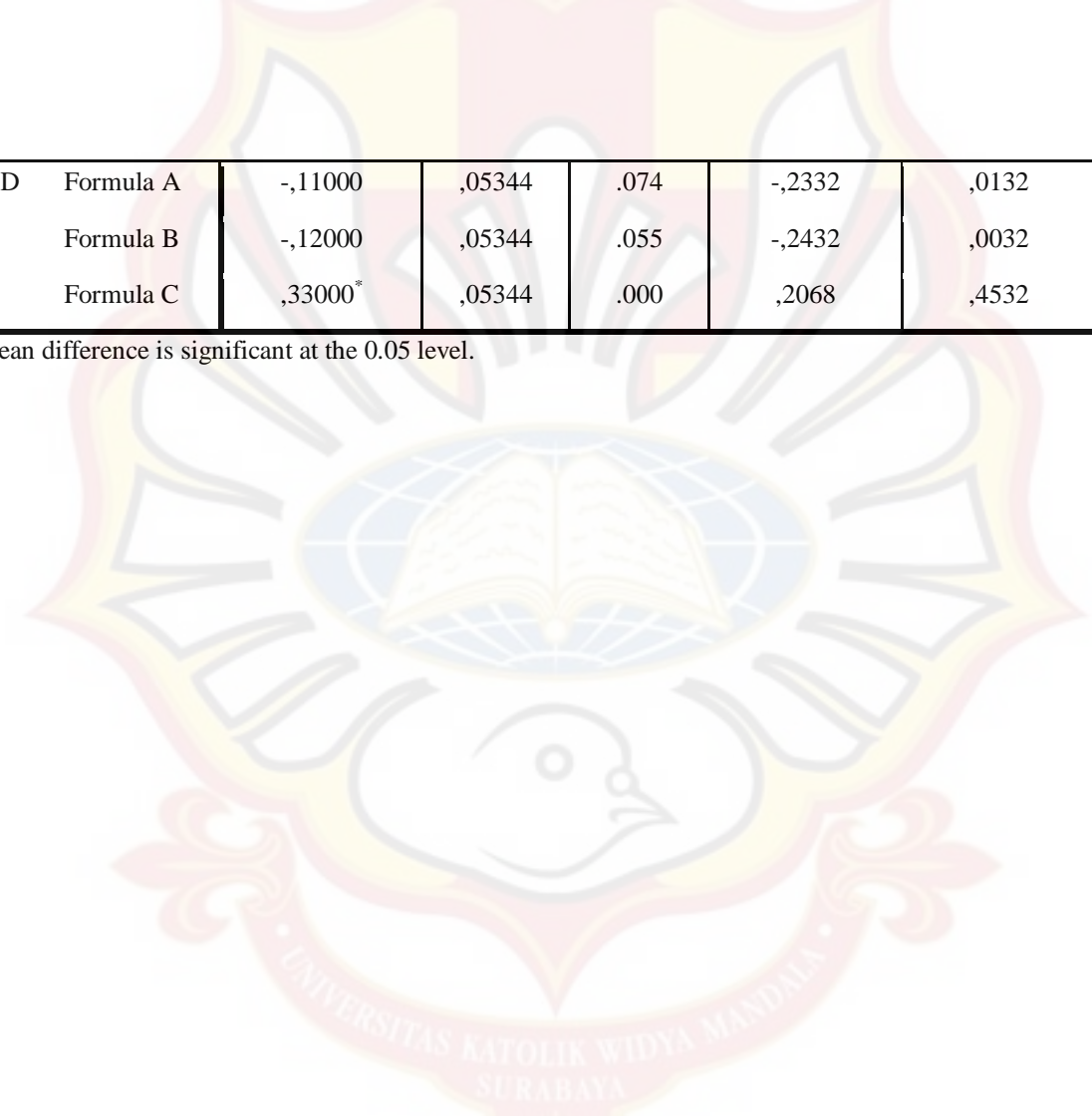
Multiple Comparisons

Kerapuhan
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	-,01000	,05344	.856	-,1332	,1132
	Formula C	,44000*	,05344	.000	,3168	,5632
	Formula D	,11000	,05344	.074	-,0132	,2332
Formula B	Formula A	,01000	,05344	.856	-,1132	,1332
	Formula C	,45000*	,05344	.000	,3268	,5732
	Formula D	,12000	,05344	.055	-,0032	,2432
Formula C	Formula A	-,44000*	,05344	.000	-,5632	-,3168
	Formula B	-,45000*	,05344	.000	-,5732	-,3268
	Formula D	-,33000*	,05344	.000	-,4532	-,2068

Formula D	Formula A	-,11000	,05344	.074	-,2332	,0132
	Formula B	-,12000	,05344	.055	-,2432	,0032
	Formula C	,33000*	,05344	.000	,2068	,4532

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



LAMPIRAN P
HASIL UJI STATISTIK WAKTU HANCUR TABLET ANTAR FORMULA

Descriptives

Waktuhancur

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	26,6667	2,30940	1,33333	20,9298	32,4035	24,00	28,00
Formula B	3	3,3333	,57735	,33333	1,8991	4,7676	3,00	4,00
Formula C	3	27,3333	1,15470	,66667	24,4649	30,2018	26,00	28,00
Formula D	3	9,3333	2,88675	1,66667	2,1622	16,5044	6,00	11,00
Total	12	16,6667	11,14641	3,21769	9,5846	23,7488	3,00	28,00

Test of Homogeneity of Variances

Waktuhancur

Levene Statistic	df1	df2	Sig.
4.638	3	8	.037

ANOVA

Waktuhancur

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1336.000	3	445.333	116.174	.000
Within Groups	30.667	8	3.833		
Total	1366.667	11			

Multiple Comparisons

Waktuhancur
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	23,33333 [*]	1,59861	.000	19,6469	27,0197
	Formula C	-,66667	1,59861	.688	-4,3531	3,0197
	Formula D	17,33333 [*]	1,59861	.000	13,6469	21,0197
Formula B	Formula A	-23,33333 [*]	1,59861	.000	-27,0197	-19,6469
	Formula C	-24,00000 [*]	1,59861	.000	-27,6864	-20,3136
	Formula D	-6,00000 [*]	1,59861	.006	-9,6864	-2,3136
Formula C	Formula A	,66667	1,59861	.688	-3,0197	4,3531
	Formula B	24,00000 [*]	1,59861	.000	20,3136	27,6864
	Formula D	18,00000 [*]	1,59861	.000	14,3136	21,6864

Formula D	Formula A	-17,33333*	1,59861	.000	-21,0197	-13,6469
	Formula B	6,00000*	1,59861	.006	2,3136	9,6864
	Formula C	-18,00000*	1,59861	.000	-21,6864	-14,3136

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

LAMPIRAN Q
HASIL UJI STATISTIK PERSEN DISOLUSI TABLET ANTAR FORMULA

Descriptives

Disolusi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Formula A	3	10,5233	,30139	,17401	9,7746	11,2720	10,24	10,84
Formula B	3	93,4367	,15631	,09025	93,0484	93,8250	93,27	93,58
Formula C	3	7,9667	,13317	,07688	7,6359	8,2975	7,82	8,08
Formula D	3	82,5933	,15631	,09025	82,2050	82,9816	82,45	82,76
Total	12	48,6300	41,34184	11,93436	22,3626	74,8974	7,82	93,58

Test of Homogeneity of Variances

Disolusi

Levene Statistic	df1	df2	Sig.
.847	3	8	.506

ANOVA

Disolusi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18800.310	3	6266.770	159223.462	.000
Within Groups	.315	8	.039		
Total	18800.625	11			

Multiple Comparisons

Disolusi
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Formula A	Formula B	-82,91333 [*]	,16198	.000	-83,2869	-82,5398
	Formula C	2,55667 [*]	,16198	.000	2,1831	2,9302
	Formula D	-72,07000 [*]	,16198	.000	-72,4435	-71,6965
Formula B	Formula A	82,91333 [*]	,16198	.000	82,5398	83,2869
	Formula C	85,47000 [*]	,16198	.000	85,0965	85,8435
	Formula D	10,84333 [*]	,16198	.000	10,4698	11,2169
Formula C	Formula A	-2,55667 [*]	,16198	.000	-2,9302	-2,1831
	Formula B	-85,47000 [*]	,16198	.000	-85,8435	-85,0965
	Formula D	-74,62667 [*]	,16198	.000	-75,0002	-74,2531

Formula D	Formula A	72,07000*	,16198	.000	71,6965	72,4435
	Formula B	-10,84333*	,16198	.000	-11,2169	-10,4698
	Formula C	74,62667*	,16198	.000	74,2531	75,0002

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

LAMPIRAN R

HASIL ANOVA UJI KEKERASAN PADA PROGRAM DESIGN EXPERT

Response 1 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	7.11	3	2.37	179.82	< 0.0001	significant
<i>A-Xanthan gum</i>	<i>5.64</i>	<i>1</i>	<i>5.64</i>	<i>428.15</i>	<i>< 0.0001</i>	
<i>B-PVP K-30</i>	<i>1.46</i>	<i>1</i>	<i>1.46</i>	<i>110.97</i>	<i>< 0.0001</i>	
<i>AB</i>	<i>4.408E-003</i>	<i>1</i>	<i>4.408E-003</i>	<i>0.33</i>	<i>0.5790</i>	
Pure Error	0.11	8	0.013			
Cor Total	7.22	11				

The Model F-value of 179.82 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

Values of "Prob > F" less than 0.0500 indicate model terms are significant.

In this case A, B are significant model terms.

Values greater than 0.1000 indicate the model terms are not significant.

If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.11	R-Squared	0.9854
Mean	5.77	Adj R-Squared	0.9799
C.V. %	1.99	Pred R-Squared	0.9671
PRESS	0.24	Adeq Precision	31.226

The "Pred R-Squared" of 0.9671 is in reasonable agreement with the "Adj R-Squared" of 0.9799.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 31.226 indicates an adequate signal. This model can be used to navigate the design space.

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Factor	Coefficient Estimate	df	Standard Error	95% CI Low	95% CI High	VIF
Intercept	5.77	1	0.033	5.70	5.85	
A-Xanthan gum	-0.69	1	0.033	-0.76	-0.61	1.00
B-PVP K-30	0.35	1	0.033	0.27	0.43	1.00
AB0.019	1	0.033	-0.057	0.096	1.00	

Final Equation in Terms of Coded Factors:

$$\text{Kekerasan} = +5.77 - 0.69 * A$$

+0.35
+0.019

* B
* A * B

Final Equation in Terms of Actual Factors:

Kekerasan =

+6.32229

-0.35729

+0.16021

+4.79167E-003

* Xanthan gum

* PVP K-30

* Xanthan gum * PVP K-30

115

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 S

HASIL ANOVA UJI KERAPUHAN PADA DESIGN EXPERT

Response 2 Kerapuhan

ANOVA for selected factorial model

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

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F	
Model	0.40	3	0.13	31.03	< 0.0001	significant
<i>A-Xanthan gum</i>	<i>0.087</i>	<i>1</i>	<i>0.087</i>	<i>20.24</i>	<i>0.0020</i>	
<i>B-PVP K-30</i>	<i>0.24</i>	<i>1</i>	<i>0.24</i>	<i>54.91</i>	<i>< 0.0001</i>	
<i>AB</i>	<i>0.077</i>	<i>1</i>	<i>0.077</i>	<i>17.93</i>	<i>0.0029</i>	
Pure Error	0.034	8	4.283E-003			
Cor Total	0.43	11				

116

The Model F-value of 31.03 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, AB are significant model terms.

Values greater than 0.1000 indicate the model terms are not significant.

If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.065	R-Squared	0.9209
Mean	0.47	Adj R-Squared	0.8912
C.V. %	13.88	Pred R-Squared	0.8219
PRESS	0.077	Adeq Precision	11.909

The "Pred R-Squared" of 0.8219 is in reasonable agreement with the "Adj R-Squared" of 0.8912.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 11.909 indicates an adequate signal. This model can be used to navigate the design space.

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Factor	Coefficient		Standard Error	95% CI		VIF
	Estimate	df		Low	High	
Intercept	0.47	1	0.019	0.43	0.52	
A-Xanthan gum	0.085	1	0.019	0.041	0.13	1.00
B-PVP K-30	-0.14	1	0.019	-0.18	-0.096	1.00
AB0.080	1	0.019	0.036	0.12	1.0	

Final Equation in Terms of Coded Factors:

$$\text{Kerapuhan} = +0.47 + 0.085 * A$$

LAMPIRAN T

HASIL ANOVA UJI WAKTU HANCUR PADA DESIGN EXPERT

Use your mouse to right click on individual cells for definitions.

Response 3 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	1336.00	3	445.33	116.17	< 0.0001	significant
<i>A-Xanthan gum</i>	<i>1281.33</i>	<i>1</i>	<i>1281.33</i>	<i>334.26</i>	<i>< 0.0001</i>	
<i>B-PVP K-30</i>	<i>33.33</i>	<i>1</i>	<i>33.33</i>	<i>8.70</i>	<i>0.0185</i>	
<i>AB</i>	<i>21.33</i>	<i>1</i>	<i>21.33</i>	<i>5.57</i>	<i>0.0460</i>	
Pure Error	30.67	8	3.83			
Cor Total	1366.67	11				

The Model F-value of 116.17 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, 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.	1.96	R-Squared	0.9776
Mean	16.67	Adj R-Squared	0.9691
C.V. %	11.75	Pred R-Squared	0.9495
PRESS	69.00	Adeq Precision	21.232

The "Pred R-Squared" of 0.9495 is in reasonable agreement with the "Adj R-Squared" of 0.9691.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 21.232 indicates an adequate signal. This model can be used to navigate the design space.

120

Factor	Coefficient		Standard Error	95% CI		VIF
	Estimate	df		Low	High	
Intercept	16.67	1	0.57	15.36	17.97	
A-Xanthan gum	-10.33	1	0.57	-11.64	-9.03	1.00
B-PVP K-30	1.67	1	0.57	0.36	2.97	1.00
AB1.33	1	0.57	0.030	2.64	1.00	

Final Equation in Terms of Coded Factors:

$$\text{Waktu hancur} = +16.67 - 10.33 * A$$



+1.67 * B
+1.33 * A * B

Final Equation in Terms of Actual Factors:

Waktu hancur =
+32.66667
-6.16667 * Xanthan gum
-0.16667 * PVP K-30
+0.33333 * Xanthan gum * PVP K-30

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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 U

HASIL ANOVA UJI PERSEN DISOLUSI PADA DESIGN EXPERT

Use your mouse to right click on individual cells for definitions.

Response 4 Persen Disolusi

ANOVA for selected factorial model

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

Source	Sum of Squares	df	Mean Square	F Value	p-value Prob > F
Model	18800.31	3	6266.77	1.592E+005	< 0.0001 significant
<i>A-Xanthan gum</i>	<i>18614.14</i>	<i>1</i>	<i>18614.14</i>	<i>4.729E+005</i>	<i>< 0.0001</i>
<i>B-PVP K-30</i>	<i>134.67</i>	<i>1</i>	<i>134.67</i>	<i>3421.64</i>	<i>< 0.0001</i>
<i>AB</i>	<i>51.50</i>	<i>1</i>	<i>51.50</i>	<i>1308.53</i>	<i>< 0.0001</i>
Pure Error	0.31	8	0.039		
Cor Total	18800.63	11			

The Model F-value of 159223.46 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, AB are significant model terms.

Values greater than 0.1000 indicate the model terms are not significant.

If there are many insignificant model terms (not counting those required to support hierarchy),

model reduction may improve your model.

Std. Dev.	0.20	R-Squared	1.0000
Mean	48.63	Adj R-Squared	1.0000
C.V. %	0.41	Pred R-Squared	1.0000
PRESS	0.71	Adeq Precision	746.201

The "Pred R-Squared" of 1.0000 is in reasonable agreement with the "Adj R-Squared" of 1.0000.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 746.201 indicates an adequate signal. This model can be used to navigate the design space.

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Factor	Coefficient		Standard Error	95% CI		VIF
	Estimate	df		Low	High	
Intercept	48.63	1	0.057	48.50	48.76	
A-Xanthan gum	39.38	1	0.057	39.25	39.52	1.00
B-PVP K-30	-3.35	1	0.057	-3.48	-3.22	1.00
AB-2.07	1	0.057	-2.20	-1.94	1.00	

Final Equation in Terms of Coded Factors:

$$\begin{aligned} \text{Persen Disolusi} &= \\ &+48.63 \\ &+39.38 * A \\ &-3.35 * B \end{aligned}$$



-2.07

* A * B

Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{Persen Disolusi} &= \\ -10.08375 & \\ +21.24625 & \quad * \text{ Xanthan gum} \\ -0.12125 & \quad * \text{ PVP K-30} \\ -0.51792 & \quad * \text{ Xanthan gum} * \text{ PVP K-30} \end{aligned}$$

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

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

LAMPIRAN V
UJI F KURVA BAKU
 Uji Kesamaan Regresi (Aquadest)

REPLIKASI 1

KONSENTRASI (X)	ABSORBANSI (Y)	X^2	Y^2	XY
2,004	0,150	4,016016	0,0225	0,3006
8,016	0,259	64,256256	0,067081	2,076144
14,028	0,374	196,784784	0,139876	5,246472
20,040	0,486	401,6016	0,236196	9,73944
26,052	0,599	678,706704	0,358801	15,605148
32,064	0,710	1028,100096	0,5041	22,76544
38,076	0,823	1449,781776	0,677329	31,336548
		3823,247232	2,005883	87,069792

REPLIKASI 2

KONSENTRASI (X)	ABSORBANSI (Y)	X^2	Y^2	XY
2,004	0,117	4,016016	0,013689	0,234468
8,016	0,239	64,256256	0,057121	1,915824
14,028	0,363	196,784784	0,131769	5,092164
20,040	0,459	401,6016	0,210681	9,19836
26,052	0,579	678,706704	0,335241	15,084108
32,064	0,698	1028,100096	0,487204	22,380672
38,076	0,801	1449,781776	0,641601	30,498876
		3823,247232	1,877306	84,404472

REPLIKASI 3

KONSENTRASI (X)	ABSORBANSI (Y)	X ²	Y ²	XY
2,008	0,132	4,032064	0,017424	0,265056
8,032	0,239	64,513024	0,057121	1,919648
14,056	0,360	197,571136	0,1296	5,06016
20,08	0,465	403,2064	0,216225	9,3372
26,104	0,585	681,418816	0,342225	15,27084
32,128	0,715	1032,208384	0,511225	22,97152
38,152	0,825	1455,575104	0,680625	31,4754
		3838,524928	1,954445	86,299824

	ΣX^2	ΣXY	ΣY^2	N	SSi	RDF
Regresi I	3823,247232	87,069792	2,005883	7	0,0229747	6
Regresi II	3823,247232	84,404472	1,877306	7	0,0139384	6
Regresi III	3838,524928	86,299824	1,954445	7	0,014205	6

11485,01939 257,774088 5,837634 0,0511181

Ssc = 0,0520556

F hitung = 0,0825

F hitung < F tabel 0,05 (4;18) 2,93

LAMPIRAN W
UJI F KURVA BAKU

Uji Kesamaan Regresi (Dapar Fosfat pH 6,8)

REPLIKASI 1

KONSENTRASI (X)	ABSORBANSI (Y)	X^2	Y^2	XY
5,02	0,288	25,2004	0,082944	1,44576
20,08	0,850	403,2064	0,7225	17,068
35,14	1,105	1234,8196	1,221025	38,8297
50,20	1,338	2520,04	1,790244	67,1676
65,26	1,686	4258,8676	2,842596	110,02836
80,32	2,073	6451,3024	4,297329	166,50336
95,38	2,177	9097,3444	4,739329	207,64226
		23990,7808	15,695967	608,68504

REPLIKASI 2

KONSENTRASI (X)	ABSORBANSI (Y)	X^2	Y^2	XY
5,01	0,252	25,1001	0,063504	1,26252
20,04	0,905	401,6016	0,819025	18,1362
35,07	1,226	1229,9049	1,503076	42,99582
50,10	1,494	2510,01	2,232036	74,8494
65,13	1,740	4241,9169	3,0276	113,3262
80,16	2,074	6425,6256	4,301476	166,25184
95,19	2,347	9061,1361	5,508409	223,41093
		23895,2952	17,455126	640,23291

REPLIKASI 3

KONSENTRASI (X)	ABSORBANSI (Y)	X ²	Y ²	XY
5,01	0,267	25,1001	0,071289	1,33767
20,04	0,870	401,6016	0,7569	17,4348
35,07	1,111	1229,9049	1,234321	38,96277
50,10	1,384	2510,01	1,915456	69,3384
65,13	1,672	4241,9169	2,795584	108,89736
80,16	1,997	6425,6256	3,988009	160,07952
95,19	2,303	9061,1361	5,303809	219,22257
350,7	9,604	23895,2952	16,065368	615,27309

	ΣX ²	ΣXY	ΣY ²	N	SSi	RDF
Regresi I	23990,7808	608,68504	15,695967	7	0,25263979	6
Regresi II	23895,2952	640,23291	17,455126	7	0,301197764	6
Regresi III	23895,2952	615,27309	16,065368	7	0,222877999	6
	71781,3712	1864,19104	49,216461		0,776715553	

$$S_{sc} = 0,802670966$$

$$F_{hitung} = 0,1504$$

$$F_{hitung} < F_{tabel} 0,05 (4;18) 2,93$$