

**LAMPIRAN A**  
**HASIL UJI MUTU FISIK GRANUL**

Pengujian	Replikasi	Formula			
		1	2	3	4
Kadar air (persen)	I	3,64	4,71	4,38	2,78
	II	4,66	3,11	3,29	3,39
	III	2,80	3,71	3,62	3,78
	Rata-rata	3,70	3,84	3,76	3,32
	SD	0,93	0,81	0,56	0,50
Waktu alir (detik)	I	9,60	9,80	9,70	9,90
	II	9,80	9,90	9,60	9,80
	III	9,90	9,80	9,80	9,60
	Rata-rata	9,77	9,83	9,70	9,77
	SD	0,15	0,06	0,10	0,15
Sudut diam (derajat)	I	32,50	32,60	31,40	32,10
	II	31,90	32,10	31,50	31,90
	III	31,40	33,10	32,50	32,50
	Rata-rata	31,93	32,60	31,80	32,17
	SD	0,55	0,50	0,61	0,31
Indeks kompresibilitas (persen)	I	18,00	17,00	16,00	18,00
	II	19,00	18,00	17,00	16,00
	III	18,00	18,00	16,00	19,00
	Rata-rata	18,33	17,67	16,33	17,67
	SD	0,58	0,58	0,58	1,53

**LAMPIRAN B**  
**HASIL UJI KEKERASAN TABLET LEPAS LAMBAT IBUPROFEN**

Replikasi I

No	Kekerasan tablet formula			
	I	II	III	IV
1	16,21	16,07	16,21	16,24
2	16,15	16,26	16,24	16,01
3	16,24	16,12	15,92	15,96
4	16,24	16,07	16,30	16,10
5	16,15	15,95	16,45	16,21
6	16,01	15,98	16,30	15,92
7	16,35	16,02	16,30	16,24
8	16,31	16,12	15,84	15,94
9	16,21	16,21	15,84	16,23
10	16,40	16,10	16,02	16,12
Rata-rata	16,23	16,09	16,14	16,10
SD	0,11	0,10	0,22	0,13

Replikasi II

No	Kekerasan tablet formula			
	I	II	III	IV
1	16,28	16,01	16,30	16,21
2	15,90	16,21	16,54	16,24
3	16,01	16,25	16,30	16,02
4	16,24	16,12	16,12	15,97
5	16,21	16,15	16,30	16,21
6	16,20	15,89	16,66	16,20
7	15,96	16,24	16,02	16,21
8	15,84	16,01	16,30	16,20
9	16,21	16,05	16,01	16,01
10	16,35	16,09	15,98	16,34
Rata-rata	16,12	16,10	16,25	16,16
SD	0,18	0,12	0,23	0,12

Replikasi III

No	Kekerasan tablet formula			
	I	II	III	IV
1	16,24	16,12	16,02	16,12
2	16,21	16,06	15,95	16,01
3	16,12	16,11	16,21	16,02
4	16,32	15,98	16,24	15,95
5	16,12	16,11	15,95	16,21
6	16,10	15,84	16,21	15,84
7	16,01	16,12	16,05	15,92
8	16,21	16,15	16,12	16,15
9	16,21	16,21	16,21	16,21
10	16,24	16,04	15,95	16,21
Rata-rata	16,18	16,07	16,09	16,06
SD	0,09	0,10	0,12	0,13

**LAMPIRAN C**  
**HASIL UJI KERAPUHAN TABLET LEPAS LAMBAT IBUPROFEN**

<b>Formula</b>	<b>Replikasi</b>	<b>Berat awal (gram)</b>	<b>Berat akhir (gram)</b>	<b>Kerapuhan (persen)</b>	<b>Rata-rata</b>	<b>SD</b>	<b>KV</b>
1	I	16,91	16,89	0,12	0,12	0,00	0,65
	II	16,00	15,98	0,12			
	III	17,03	17,01	0,12			
2	I	14,71	14,69	0,16	0,13	0,03	21,68
	II	14,70	14,68	0,13			
	III	14,67	14,65	0,11			
3	I	15,34	15,32	0,15	0,14	0,01	6,47
	II	16,70	16,68	0,13			
	III	15,57	15,55	0,13			
4	I	14,90	14,88	0,11	0,13	0,03	23,78
	II	16,44	16,42	0,12			
	III	14,85	14,83	0,17			

**LAMPIRAN D**  
**HASIL PENETAPAN KADAR TABLET LEPAS LAMBAT IBUPROFEN**

Formula	Replikasi	Absorbansi	Csampil ( $\mu\text{g/ml}$ )	Cteoritis ( $\mu\text{g/ml}$ )	Kadar (persen)	Rata-rata	SD	KV
1	I	0,705	402,3	399,0	100,83	100,52	0,44	0,44
	II	0,703	401,3	401,3	100,01			
	III	0,706	402,6	399,8	100,71			
2	I	0,696	397,3	398,9	99,60	99,58	0,39	0,39
	II	0,699	399,1	402,4	99,18			
	III	0,698	398,5	398,7	99,95			
3	I	0,699	398,9	399,4	99,88	99,97	0,42	0,42
	II	0,705	402,5	400,8	100,43			
	III	0,698	398,2	399,8	99,60			
4	I	0,697	397,9	399,5	99,60	99,78	0,71	0,71
	II	0,704	401,5	399,2	100,57			
	III	0,697	398,0	401,3	99,18			

**LAMPIRAN E**  
**CONTOH PERHITUNGAN**

**Contoh perhitungan sudut diam:**

Formula 1:

Berat kertas persegi panjang = 4,7400 gram

Berat kertas lingkaran = 1,3808 gram

Luas persegi panjang =  $21,5 \times 27,9$   
= 599,85 cm<sup>2</sup>

Luas lingkaran =  $\frac{1,3808}{4,7400} \times 599,85 = 174,74 \text{ cm}^2$

$$A = \pi r^2$$

$$r^2 = \frac{A}{\pi}$$

$$= \frac{174,74}{3,14} = 55,65$$

$$r = 7,46 \text{ cm}$$

$$\operatorname{tg} \alpha = \frac{t}{r} = \frac{4,75}{7,46} = 0,6371$$

$$\alpha = 32,5^\circ$$

**Contoh perhitungan indeks kompresibilitas:**

Formula 1:

Volume 1 = 100 ml

Volume 2 = 82 ml

$$\text{persen kompresibilitas} = \left(1 - \frac{\text{Volume 2}}{\text{Volume 1}}\right) \times 100\% = 18\%$$

**Contoh perhitungan akurasi & presisi:**

$$\text{Absorbansi} = 0,701 \rightarrow Y = 1,8432 \cdot 10^{-3} X + 1,91 \cdot 10^{-2}$$

$$C_{\text{sampel}} = 400,1 \text{ ppm}$$

$$C_{\text{teoritis}} = 400,5 \text{ ppm}$$

$$\begin{aligned} \text{persen perolehan kembali} &= \frac{C_{\text{sampel}}}{C_{\text{teoritis}}} \times 100\% \\ &= \frac{400,1}{400,5} \times 100\% \\ &= 99,89\% \end{aligned}$$

$$\begin{aligned} \text{Untuk menghitung persen KV} &= \frac{SD}{X} \times 100\% \\ &= 0,81\% \end{aligned}$$

**Contoh perhitungan AUC pada disolusi:**

$$\text{Rumus} = \frac{(W_{t_n} + W_{t_{n-1}})}{2} \times (t_n - t_{n-1})$$

Formula 1

$$W_{t_n} = 244,55$$

$$W_{t_{n-1}} = 239,05$$

$$t_n = 60 \text{ menit}$$

$$t_{n-1} = 30 \text{ menit}$$

$$\begin{aligned} \text{AUC} &= \frac{(244,55 + 239,05)}{2} \times (60 - 30) \\ &= 7254,00 \end{aligned}$$

**Contoh perhitungan persen DE<sub>360</sub>:**

$$\begin{aligned} \text{Luas persegi} &= 360 \times \text{rata-rata penetapan kadar} \times \text{dosis} \\ &= 360 \times 100,52\% \times 400 \\ &= 144754 \end{aligned}$$

$$\begin{aligned}
 \text{Persen DE360} &= \left( \frac{\Sigma \text{AUC}}{\text{luas persegi}} \right) 100\% \\
 &= \left( \frac{98169,75}{144754} \right) \times 100\% \\
 &= 67,82\%
 \end{aligned}$$

**Contoh perhitungan persen obat terlarut:**

Formula 1

$$\text{PK} = 100,52\%$$

$$\begin{aligned}
 \text{Persen obat terlarut} &= \frac{Wt}{\frac{PK}{100} \times \text{dosis}} \times 100\% \\
 &= \frac{239,05}{\frac{100,52}{100} \times 400} \times 100\% \\
 &= 59,45\%
 \end{aligned}$$

**Contoh perhitungan konversi dari bentuk tingkat menjadi bentuk sesungguhnya:**

Misal : tingkat PVP K-30 = -1,0; tingkat rendah = 3%; tingkat tinggi = 5%

$$X = \frac{X' - \text{rata} - \text{rata 2level}}{\frac{1}{2} \times \text{perbedaan level}}$$

$$-1,0 = \frac{X' - \left( \frac{3+5}{2} \right)}{\frac{1}{2} \times (5-3)}$$

$$X' = 3,0$$



**LAMPIRAN F**  
**HASIL UJI DISOLUSI FORMULA 1**

Replikasi	t (menit)	Absorbansi	Csampel ( $\mu\text{g/ml}$ )	Wt (mg)	AUC (mg.menit)
A	30	0,459	265,6	239,05	3585,75
	60	0,470	271,7	244,55	7254,00
	90	0,490	282,8	254,55	7486,50
	120	0,498	287,3	258,55	7696,50
	180	0,527	303,4	273,05	15948,00
	240	0,594	340,6	306,55	17388,00
	300	0,629	360,1	324,05	18918,00
	360	0,659	376,7	339,05	19893,00
					$\Sigma = 98169,75$
B	30	0,397	231,2	208,05	3120,75
	60	0,442	256,2	230,55	6579,00
	90	0,478	276,2	248,55	7186,50
	120	0,513	295,6	266,05	7719,00
	180	0,555	318,9	287,05	16593,00
	240	0,585	335,6	302,05	17673,00
	300	0,606	347,3	312,55	18438,00
	360	0,642	367,3	330,55	19293,00
					$\Sigma = 96602,25$
C	30	0,435	252,3	227,05	3405,75
	60	0,484	279,5	251,55	7179,00
	90	0,534	307,3	276,55	7921,50
	120	0,537	308,9	278,05	8319,00
	180	0,574	329,5	296,55	17238,00
	240	0,627	358,9	323,05	18588,00
	300	0,648	370,6	333,55	19698,00
	360	0,670	382,8	344,55	20343,00
					$\Sigma = 102692,25$

Ket : Wt = Obat yang terlarut

AUC = Area under curve

**LAMPIRAN G**  
**HASIL UJI DISOLUSI FORMULA 2**

Replikasi	t (menit)	Absorbansi	Csampil ( $\mu\text{g/ml}$ )	Wt (mg)	AUC (mg.menit)
A	30	0,304	179,5	161,55	2423,25
	60	0,405	235,6	212,05	5604,00
	90	0,466	269,5	242,55	6819,00
	120	0,489	282,3	254,05	7449,00
	180	0,517	297,8	268,05	15663,00
	240	0,522	300,6	270,55	16158,00
	300	0,559	321,2	289,05	16788,00
	360	0,609	348,9	314,05	18093,00
					$\Sigma = 88997,25$
B	30	0,245	146,7	132,05	1980,75
	60	0,327	192,3	173,05	4576,50
	90	0,396	230,6	207,55	5709,00
	120	0,446	258,4	232,55	6601,50
	180	0,481	277,8	250,05	14478,00
	240	0,514	296,2	266,55	15498,00
	300	0,547	314,5	283,05	16488,00
	360	0,571	327,8	295,05	17343,00
					$\Sigma = 82674,75$
C	30	0,284	168,4	151,55	2273,25
	60	0,306	180,6	162,55	4711,50
	90	0,408	237,3	213,55	5641,50
	120	0,443	256,7	231,05	6669,00
	180	0,489	282,3	254,05	14553,00
	240	0,506	291,7	262,55	15498,00
	300	0,536	308,4	277,55	16203,00
	360	0,588	337,3	303,55	17433,00
					$\Sigma = 82982,25$

**LAMPIRAN H**  
**HASIL UJI DISOLUSI FORMULA 3**

Replikasi	t (menit)	Absorbansi	Csampil ( $\mu\text{g/ml}$ )	Wt (mg)	AUC (mg.menit)
A	30	0,136	86,2	77,55	1163,25
	60	0,179	110,1	99,05	2649,00
	90	0,210	127,3	114,55	3204,00
	120	0,276	163,9	147,55	3931,50
	180	0,304	179,5	161,55	9273,00
	240	0,342	200,6	180,55	10263,00
	300	0,387	225,6	203,05	11508,00
	360	0,434	251,7	226,55	12888,00
					$\Sigma = 54879,75$
B	30	0,197	120,1	108,05	1620,75
	60	0,203	123,4	111,05	3286,50
	90	0,219	132,3	119,05	3451,50
	120	0,254	151,7	136,55	3834,00
	180	0,289	171,2	154,05	8718,00
	240	0,305	180,1	162,05	9483,00
	300	0,345	202,3	182,05	10323,00
	360	0,373	217,8	196,05	11343,00
					$\Sigma = 52059,75$
C	30	0,181	111,2	100,05	1500,75
	60	0,206	125,1	112,55	3189,00
	90	0,226	136,2	122,55	3526,50
	120	0,250	149,5	134,55	3856,50
	180	0,281	166,7	150,05	8538,00
	240	0,324	190,6	171,55	9648,00
	300	0,377	220,1	198,05	11088,00
	360	0,418	242,8	218,55	12498,00
					$\Sigma = 53844,75$

**LAMPIRAN I**  
**HASIL UJI DISOLUSI FORMULA 4**

Replikasi	t (menit)	Absorbansi	Csampil ( $\mu\text{g/ml}$ )	Wt (mg)	AUC (mg.menit)
A	30	0,346	202,8	182,55	2738,25
	60	0,379	221,2	199,05	5724,00
	90	0,433	251,2	226,05	6376,50
	120	0,445	257,8	232,05	6871,50
	180	0,482	278,4	250,55	14478,00
	240	0,513	295,6	266,05	15498,00
	300	0,516	297,3	267,55	16008,00
	360	0,589	337,8	304,05	17148,00
					$\Sigma = 84842,25$
B	30	0,236	141,7	127,55	1913,25
	60	0,306	180,6	162,55	4351,50
	90	0,428	248,4	223,55	5791,50
	120	0,441	255,6	230,05	6804,00
	180	0,477	275,6	248,05	14343,00
	240	0,508	292,8	263,55	15348,00
	300	0,558	320,6	288,55	16563,00
	360	0,565	324,5	292,05	17418,00
					$\Sigma = 82532,25$
C	30	0,346	202,8	182,55	2738,25
	60	0,384	223,9	201,55	5761,50
	90	0,411	238,9	215,05	6249,00
	120	0,439	254,5	229,05	6661,50
	180	0,489	282,3	254,05	14493,00
	240	0,545	313,4	282,05	16083,00
	300	0,558	320,6	288,55	17118,00
	360	0,593	340,1	306,05	17838,00
					$\Sigma = 86942,25$

**LAMPIRAN J**  
**UJI F KURVA BAKU**

Replikasi 1

<b>Konsentrasi</b>	<b>Absorbansi</b>	<b>x<sup>2</sup></b>	<b>y<sup>2</sup></b>	<b>xy</b>
52,45	0,083	2751,00	0,0069	4,35
104,9	0,172	11004,01	0,0296	18,04
209,8	0,377	44016,04	0,1421	79,09
314,7	0,540	99036,09	0,2916	169,94
419,6	0,747	176064,16	0,5580	313,44
524,5	0,968	275100,25	0,9370	507,72
629,4	1,136	396144,36	1,2905	715,00

Replikasi 2

<b>Konsentrasi</b>	<b>Absorbansi</b>	<b>X<sup>2</sup></b>	<b>Y<sup>2</sup></b>	<b>XY</b>
53,2	0,172	2830,24	0,0296	9,15
106,4	0,282	11320,96	0,0795	30,00
212,8	0,431	45283,84	0,1858	91,72
319,2	0,627	101888,64	0,3931	200,14
425,6	0,825	181135,36	0,6806	351,12
532,0	1,033	283024,00	1,0671	549,56
638,4	1,225	407554,56	1,5006	782,04

Replikasi 3

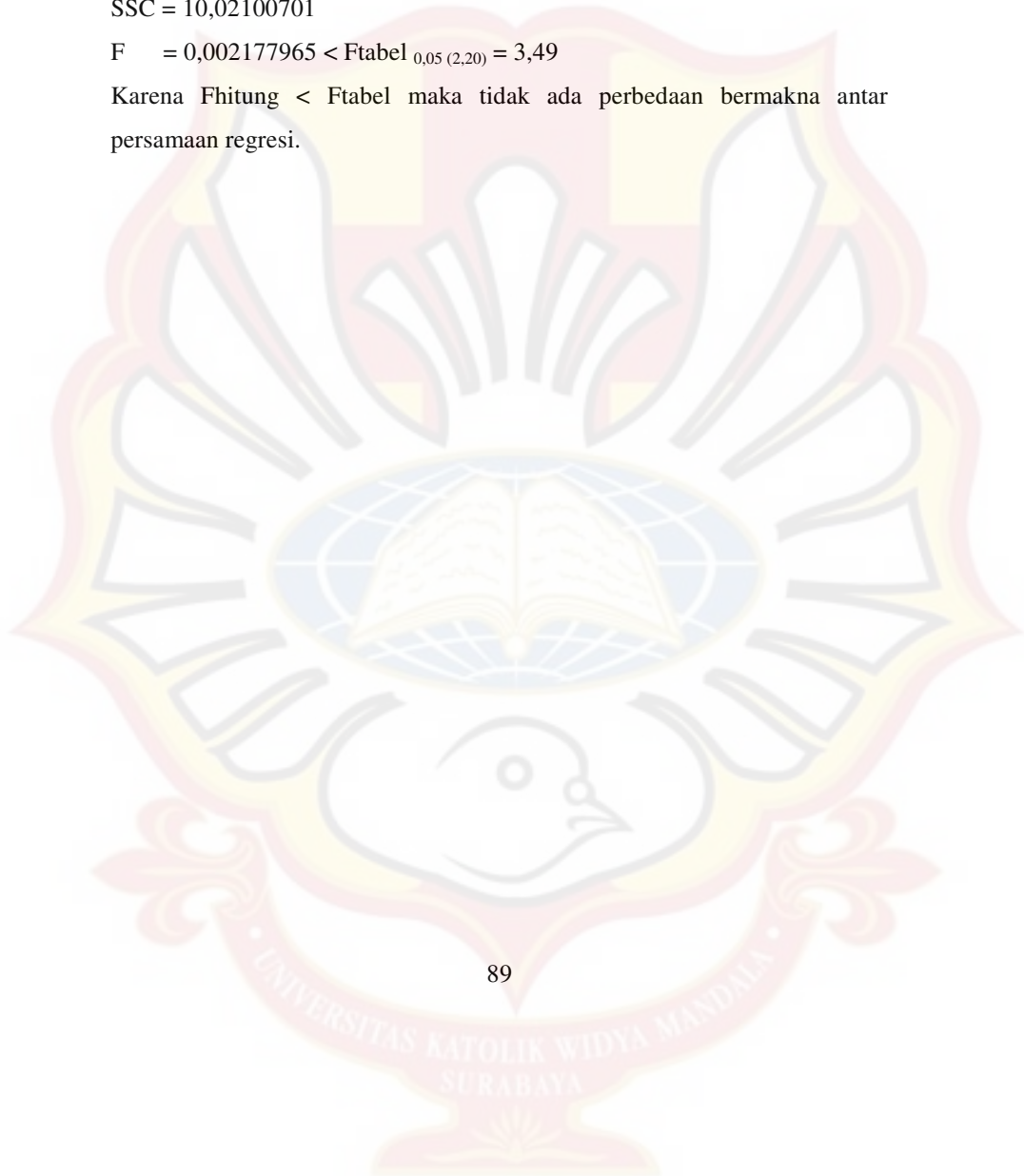
<b>Konsentrasi</b>	<b>Absorbansi</b>	<b>X<sup>2</sup></b>	<b>Y<sup>2</sup></b>	<b>XY</b>
51,5	0,082	2652,25	0,0067	4,22
103,0	0,179	10609,00	0,0320	18,44
206,0	0,352	42436,00	0,1239	72,51
309,0	0,497	95481,00	0,2470	153,57
412,0	0,671	169744,00	0,4502	276,45
515,0	0,871	265225,00	0,7586	448,57
618,0	1,101	381924,00	1,2122	680,42

	$\Sigma X^2$	$\Sigma XY$	$\Sigma Y^2$	N	SSi	RDF
Replikasi 1	1004115,91	1807,58	3,2557	7	3.2539	6
Replikasi 2	1033037,60	2013,73	3,9363	7	3,9344	6
Replikasi 3	968071,25	1654,18	2,8308	7	2,8291	6
	3005224,76	5475,49	10,0228		10,0174	

SSC = 10,02100701

F = 0,002177965 < Ftabel<sub>0,05 (2,20)</sub> = 3,49

Karena Fhitung < Ftabel maka tidak ada perbedaan bermakna antar persamaan regresi.



**LAMPIRAN K**  
**HASIL UJI STATISTIK KEKERASAN TABLET LEPAS LAMBAT**  
**IBUPROFEN**

Anova: Single Factor

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Column 1	3	48,52	16,18	0,00
Column 2	3	48,27	16,09	0,00
Column 3	3	48,49	16,16	0,01
Column 4	3	48,32	16,11	0,00

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0,02	3	0,01	1,69	0,25	4,07
Within Groups	0,02	8	0,00			
Total	0,04	11				

Karena  $F_{hitung} 1,69 < F_{tabel} 0,05 (3,11) = 3,59$ ; maka  $H_0$  diterima dan tidak ada perbedaan bermakna antar formula.

**LAMPIRAN L**  
**HASIL UJI STATISTIK KERAPUHAN TABLET LEPAS LAMBAT**  
**IBUPROFEN**

Anova: Single Factor

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Column 1	3	0,36	0,12	0,00
Column 2	3	0,40	0,13	0,00
Column 3	3	0,41	0,14	0,00
Column 4	3	0,39	0,13	0,00

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	0,00	3	0,00	0,37	0,78	4,07
Within Groups	0,00	8	0,00			
Total	0,00	11				

Karena Fhitung  $0,37 < F_{tabel_{0,05(3,11)}} = 3,59$ ; maka  $H_0$  diterima dan tidak ada perbedaan bermakna antar formula.



**LAMPIRAN M**  
**HASIL UJI STATISTIK KADAR TABLET LEPAS LAMBAT**  
**IBUPROFEN**

Anova: Single Factor

**SUMMARY**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Column 1	3	301,55	100,52	0,20
Column 2	3	298,73	99,58	0,15
Column 3	3	299,91	99,97	0,18
Column 4	3	299,35	99,78	0,51

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1,46	3	0,49	1,89	0,21	4,07
Within Groups	2,06	8	0,26			
Total	3,53	11				

Karena Fhitung  $1,89 < F_{\text{tabel}}_{0,05 (3,11)} = 3,59$ ; maka  $H_0$  diterima dan tidak ada perbedaan bermakna antar formula.

**LAMPIRAN N**  
**HASIL UJI STATISTIK PERSEN DE<sub>360</sub>**

Anova: Single Factor

**SUMMARY**

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Column 1	3	205,50	68,50	4,77
Column 2	3	177,60	59,20	6,18
Column 3	3	111,69	37,23	0,98
Column 4	3	176,99	59,00	2,36

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1583,18	3	527,73	147,70	0,00	4,07
Within Groups	28,58	8	3,57			
Total	1611,77	11				

Karena Fhitung  $147,70 > F_{\text{tabel } 0,05 (3,11)} = 3,59$ ; maka  $H_0$  ditolak dan ada perbedaan bermakna antar formula.

	<b>FA</b>	<b>FB</b>	<b>FC</b>	<b>FD</b>
Mean	68,50	59,20	37,23	59,00
FA	68,50	0	-9,30 *	-31,27 *
FB	59,20	0	-21,97 *	-0,20
FC	37,23		0	21,77 *
FD	59,00			0

Keterangan:

Nilai HSD = 3,818255

\* = Perbedaannya signifikan, karena selisihnya > nilai HSD

**LAMPIRAN O**  
**SERTIFIKAT ANALISIS IBUPROFEN**



**Shasun Chemicals And Drugs Ltd.**

IBUPROFEN BP/Ph.Eur. (SN Grade) CERTIFICATE OF ANALYSIS			
S.No	TESTS	RESULTS	LIMITS
Nature of Packing : Sea Worthy Fibre Drum Sample Taken By : S.Sivakumar Date of Manufacture : July 2006 Expiry Date : June 2011 Batch Volume(Qty) : 3000 Kg.		Analytical Report No. : FPBU0607674 Batch Number : IBU0607674 Date of Analysis : 25-07-2006 Date of Report : 25-07-2006 Manufactured By : Shasun Chemicals And Drugs Limited, Pondicherry.	
1.	Appearance	White crystalline powder	White, crystalline powder or colourless crystals
2.	Solubility	Complies	Freely soluble in acetone, in methanol and in methylene chloride. Dissolves in dilute solutions of alkali hydroxides and carbonates. Practically insoluble in water.
3.	Clarity and colour of solution	Complies	10 % w/v solution (5g in 50 mL of the solution) in methanol should be clear and colourless
4.	Identification	Conforms	The IR spectrum of sample should be concordant with the spectrum of Ibuprofen RS
	a) By IR		
	b) By UV	1.24  1.03	The ratio of absorbance at the max. at 264 nm to that at 258 nm is 1.20 to 1.30  The ratio of absorbance at the max. at 272 nm to that at 258 nm is 1.00 to 1.10
	c) By TLC	Complies	Principal spot should be similar in position, colour and size compared to Ibuprofen RS
	d) Melting point	76.1 °C	75.0°C to 78.0 °C
5.	Optical rotation	0.00 °	-0.05° to +0.05°
6.	Heavy metals	LT 10 PPM	NMT 10 PPM
7.	Related substances (by HPLC)		
	a) 2-(4-Isobutyl Phenyl) Propanoic Acid (Impurity I)	0.06 % (Area %)	NMT 0.20 % (Area %)
	b) 2-(4-Butyl phenyl)propanoic acid (Impurity B)	Not Detected	NMT 0.30 % (w/w)
	c) 4-Isobutylacetophenone (Impurity E)	Not Detected	NMT 0.30 % (Area %)
	d) Any unidentified impurity	0.04 % (Area %)	NMT 0.10 % (Area %)
	e) Total impurities (Apart from impurity B)	0.14 % (Area %)	NMT 0.50 % (Area %)
8.	Sulphated ash	0.04 % (w/w)	NMT 0.10 % (w/w)
9.	Loss on drying	0.10 % (w/w)	NMT 0.50 % (w/w)
10.	Assay (dry basis)	99.8 % (w/w)	98.5 % - 101.0 % (w/w)

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 \_\_\_\_\_ 2655827, 2655828, 2655829, 2655830 \_\_\_\_\_  
 \_\_\_\_\_ Fax : 091 - 413 - 2655154, e-mail : shapondy@md4.vsnl.net.in \_\_\_\_\_  
 \_\_\_\_\_ shapdy@shasun.com \_\_\_\_\_



# Shasun Chemicals And Drugs Ltd.

IBUPROFEN BP/Ph.Eur. (SN Grade) CERTIFICATE OF ANALYSIS			
S.No	TESTS	RESULTS	LIMITS
Nature of Packing : Sea Worthy Fibre Drum		Analytical Report No. : FPB U0607674	
Sample Taken By : S.Sivakumar		Batch Number : IBU0607674	
Date of Manufacture : July 2006		Date of Analysis : 25-07-2006	
Expiry Date : June 2011		Date of Report : 25-07-2006	
Batch Volume(Qty) : 3000 Kg.		Manufactured By : Shasun Chemicals And Drugs Limited, Pondicherry.	
ADDITIONAL TESTS			
a.	Bulk Density		
	Untapped	0.45 g/mL	0.35- 0.55 g/mL
	Tapped (1250 tappings)	0.64 g/mL	0.50- 0.75 g/mL
b.	Mean Particle Size	76.4 microns	60.0 - 130.0 microns
c.	Residual solvents		
	i) Acetone	17 PPM	NMT 100 PPM
	ii) isopropyl alcohol	LT 0.89 PPM	NMT 250 PPM
	iii) Hexanes	29 PPM	NMT 290 PPM
	iv) Tri chloro ethylene	LT 0.19 PPM	NMT 80 PPM
	v) Methanol $\phi$	Not Detected	NMT 500 PPM
<b>OPINION:</b> The Material Complies As Per BP/Ph.Eur. Standard.			
Note : NMT = Not more than NLT = Not less than LT = Less than			
$\phi$ NOT USED IN THE PROCESS, TEST INCLUDED FOR COMPLIANCE WITH CERTIFICATE OF SUITABILITY.			
Compiled by : <i>Clr</i> Date : <i>25/07/2006</i> (E.Senthilkumar) Senior Chemist		Reviewed by : <i>Sre</i> Date : <i>25/07/2006</i> (S.Rajasudalaiathu) Senior Chemist	
		Approved by : <i>[Signature]</i> Date : <i>25/07/2006</i> (N.Vinayagaperumal) Dy.QC-Incharge	
SCQC/F-024/F/06			

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 shapdy@shasun.com



LAMPIRAN P  
TABEL UJI F

TABEL DISTRIBUSI F UNTUK 5% DAN 1%

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

$V_2 = dk$ penyebut	$V_1 = dk$ pembilang																									
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞		
1	161 4052	200 4999	216 5403	225 5625	230 5764	234 5859	237 5928	239 5961	241 6022	242 6056	243 6082	244 6106	245 6142	246 6169	248 6208	249 6234	250 6258	251 6286	252 6302	253 6323	253 6334	254 6352	254 6361	254 6366		
2	18,51 98,49	19,00 99,01	19,16 99,17	19,25 99,25	19,30 99,30	19,33 99,33	19,36 99,34	19,37 99,36	19,38 97,38	19,39 99,40	19,40 99,41	19,41 99,42	19,42 99,43	19,43 99,44	19,44 99,45	19,45 99,46	19,46 99,47	19,47 99,48	19,47 99,48	19,48 99,49	19,49 99,49	19,49 99,49	19,50 99,50	19,50 99,50		
3	10,13 34,12	9,55 30,81	9,28 29,46	9,12 28,71	9,01 28,24	8,94 27,91	8,88 27,67	8,84 27,49	8,81 27,34	8,78 27,23	8,76 27,13	8,74 27,05	8,71 26,92	8,69 26,83	8,66 26,69	8,64 26,60	8,62 26,50	8,60 26,41	8,58 26,30	8,57 26,27	8,56 26,23	8,54 26,18	8,54 26,14	8,53 26,12		
4	7,71 21,20	6,94 18,00	6,59 16,69	6,39 15,98	6,26 15,52	6,16 15,21	6,09 14,98	6,04 14,80	6,00 14,66	5,96 14,54	5,93 14,45	5,91 14,37	5,87 14,24	5,84 14,15	5,80 14,02	5,77 13,93	5,74 13,83	5,71 13,74	5,70 13,69	5,68 13,61	5,66 13,57	5,65 13,52	5,64 13,48	5,53 13,46		
5	6,61 16,26	5,79 13,27	5,41 12,06	5,19 11,39	5,05 10,97	4,95 10,67	4,88 10,45	4,82 10,27	4,78 10,15	4,74 10,05	4,70 9,96	4,68 9,89	4,64 9,77	4,60 9,68	4,56 9,55	4,53 9,47	4,50 9,38	4,46 9,29	4,44 9,24	4,42 9,17	4,40 9,13	4,38 9,07	4,37 9,04	4,36 9,02		
6	5,99 13,74	5,14 10,92	4,76 9,78	4,53 9,15	4,39 8,75	4,28 8,47	4,21 8,26	4,15 8,10	4,10 7,98	4,06 7,87	4,03 7,79	4,00 7,72	3,96 7,60	3,92 7,52	3,87 7,39	3,84 7,31	3,81 7,23	3,77 7,14	3,75 7,09	3,72 7,02	3,71 6,99	3,69 6,94	3,68 6,90	3,67 6,88		
7	5,59 12,25	4,74 9,55	4,35 8,45	4,12 7,85	3,97 7,46	3,87 7,19	3,79 7,00	3,73 6,84	3,68 6,71	3,63 6,62	3,60 6,54	3,57 6,47	3,52 6,35	3,49 6,27	3,44 6,15	3,41 6,07	3,38 5,98	3,34 5,90	3,32 5,85	3,29 5,78	3,28 5,75	3,25 5,70	3,24 5,67	3,23 5,65		
8	5,32 11,26	4,46 8,65	4,07 7,59	3,84 7,01	3,69 6,63	3,58 6,37	3,50 6,19	3,44 6,03	3,39 5,91	3,34 5,82	3,31 5,74	3,28 5,67	3,23 5,56	3,20 5,48	3,15 5,36	3,12 5,28	3,08 5,20	3,05 5,11	3,03 5,06	3,00 5,00	2,98 4,96	2,96 4,91	2,94 4,88	2,93 4,86		
9	5,12 10,56	4,26 8,02	3,86 6,99	3,63 6,42	3,48 6,06	3,37 5,80	3,29 5,62	3,23 5,47	3,18 5,35	3,13 5,26	3,10 5,18	3,07 5,11	3,02 5,00	2,98 4,92	2,93 4,80	2,90 4,73	2,86 4,61	2,82 4,56	2,80 4,51	2,77 4,45	2,76 4,41	2,73 4,36	2,72 4,33	2,71 4,34		

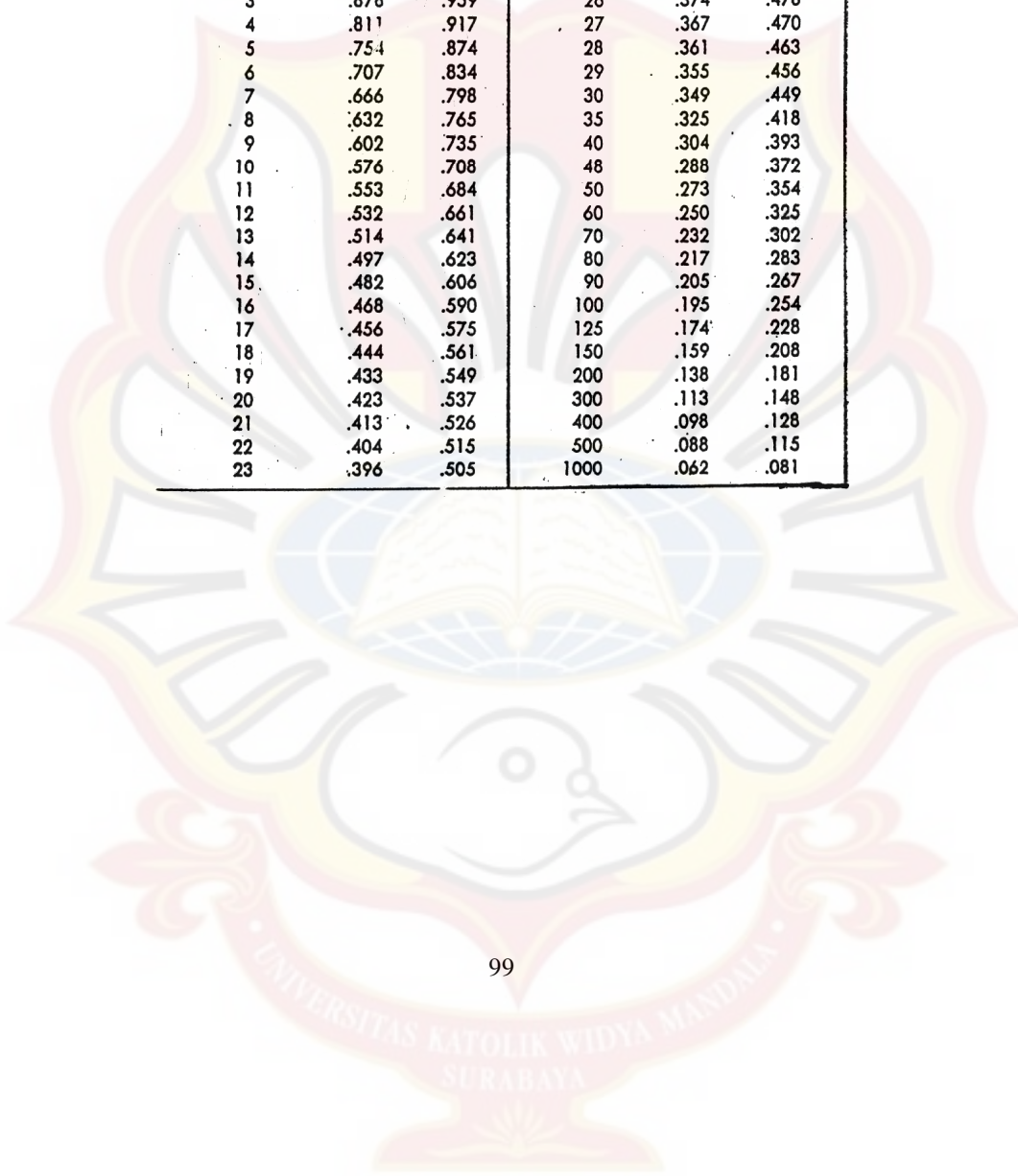
$V_2 = dk$ penyebut	$V_1 = dk$ pembilang																							
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	X
10	4,96 10,04	4,10 7,56	3,71 6,55	3,48 5,99	3,33 5,64	3,22 5,39	3,14 5,21	3,07 5,06	3,02 4,95	2,97 4,85	2,94 4,78	2,91 4,71	2,86 4,60	2,82 4,52	2,77 4,41	2,74 4,33	2,70 4,25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

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

LAMPIRAN Q

TABEL UJI R

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





LAMPIRAN R  
TABEL UJI HSD

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	4.01	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
$\infty$	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 S**  
**ANOVA PERSEN OBAT LEPAS 3 JAM**

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

Response 1 persen obat lepas 3 jam

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	1793,389	3	597,7965	140,8975	< 0.0001
A-kons komb matriks	865,131	1	865,131	203,9069	< 0.0001
B-kons PVP	233,4654	1	233,4654	55,02658	< 0.0001
AB	694,793	1	694,793	163,7591	< 0.0001
Pure Error	33,9422	8	4,242775		
Cor Total	1827,332	11			

significant

The Model F-value of 140.90 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.	2,0598	R-Squared	0,981425
Mean	59,3275	Adj R-Squared	0,97446
C.V. %	3,471914	Pred R-Squared	0,958207
PRESS	76,36995	Adeq Precision	27,07644

The "Pred R-Squared" of 0.9582 is in reasonable agreement with the "Adj R-Squared" of 0.9745.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 27.076 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient		Standard Error	95% CI		VIF
	Estimate	df		Low	High	
Intercept	59,3275	1	0,594613	57,95632	60,69868	
A-kons komb matriks	-8,49083	1	0,594613	-9,86201	-7,11965	1
B-kons PVP	4,410833	1	0,594613	3,039653	5,782013	1
AB	7,609167	1	0,594613	6,237987	8,980347	1

Final Equation in Terms of Coded Factors:

$$\begin{aligned}
 \text{persen obat lepas 3 jam} &= \\
 &59,3275 \\
 &-8,49083 * A \\
 &4,410833 * B \\
 &* A \\
 &7,609167 * B
 \end{aligned}$$

Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{persen obat lepas 3 jam} &= \\ &59,3275 \\ &-8,49083 * \text{kons komb matriks} \\ &4,410833 * \text{kons PVP} \\ &7,609167 * \text{kons komb matriks} * \text{kons PVP} \end{aligned}$$

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 T**  
**ANOVA PERSEN OBAT LEPAS 6 JAM**

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

Response 2 persen obat lepas 6 jam

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	1559,525	3	519,8416	74,15591	< 0.0001	significant
A-kons komb matriks	751,7667	1	751,7667	107,2403	< 0.0001	
B-kons PVP	151,23	1	151,23	21,57311	0.0017	
AB	656,5281	1	656,5281	93,65438	< 0.0001	
Pure Error	56,08093	8	7,010117			
Cor Total	1615,606	11				

The Model F-value of 74.16 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.	2,647662	R-Squared	0,965288
Mean	72,31167	Adj R-Squared	0,952271
C.V. %	3,66146	Pred R-Squared	0,921898
PRESS	126,1821	Adeq Precision	20,03321

The "Pred R-Squared" of 0.9219 is in reasonable agreement with the "Adj R-Squared" of 0.9523.

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Your ratio of 20.033 indicates an adequate signal. This model can be used to navigate the design space.

Factor	Coefficient		Standard Error	95% CI		VIF
	Estimate	df		Low	High	
Intercept	72,31167	1	0,764314	70,54915	74,07418	
A-kons komb matriks	-7,915	1	0,764314	-9,67751	-6,15249	1
B-kons PVP	3,55	1	0,764314	1,787488	5,312512	1
AB	7,396667	1	0,764314	5,634155	9,159179	1

Final Equation in Terms of Coded Factors:

$$\begin{aligned}
 \text{persen obat lepas 6 jam} &= \\
 &72,31167 \\
 &-7,915 * A \\
 &3,55 * B \\
 &* A \\
 &7,396667 * B
 \end{aligned}$$



Final Equation in Terms of Actual Factors:

$$\begin{aligned} \text{persen obat lepas 6 jam} &= \\ &72,31167 \\ &-7,915 \quad * \text{ kons komb matriks} \\ &3,55 \quad * \text{ kons PVP} \\ &7,396667 \quad * \text{ kons komb matriks} * \text{ kons PVP} \end{aligned}$$

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.