

LAMPIRAN A
HASIL UJI MUTU FISIK MASSA TABLET

Mutu fisik yang diuji	Replika si	Formula Tablet Likuisolid ibuprofen				Persyaratan	
		F A	F B	F C	F D		
Sudut Diam (derajat)	I	31,99	25,37	28,47	27,61	25-30 = baik	30-40 = cukup baik
	II	33,34	30,18	27,69	29,5	(Banke r & Anders on, 1986)	(Banke r & Anders on, 1986)
	III	32,43	30,51	27,33	28		
	Rata-rata	32,5867	28,6867	27,837	28,37		
	SD	0,6885	2,87705	0,58275	0,99785		
Hausner Ratio	I	1,2	1,22	1,13	1,08	< 1,25 (Shervington & Shervington, 1998).	
	II	1,22	1,16	1,19	1,13		
	III	1,24	1,12	1,18	1,12		
	Rata-rata	1,22	1,16667	1,16667	1,11		
	SD	0,02	0,05033	0,03215	0,02646		
Carr's Index (%)	I	17	18	12	10	16-20 = cukup baik	
	II	18	14	15	12	11-15 = baik	(Siregar, 1992)
	III	20	11	16	11		
	Rata-rata	18,3333	14,3333	14,3333	11		
	SD	1,52753	3,51183	2,08163	1		

LAMPIRAN B

HASIL UJI KEKERASAN TABLET LIKUISOLID IBUPROFEN

REPLIKASI I

No	Kekerasan Tablet Likuisolid Ibuprofen (Kp)			
	Formula I	Formula II	Formula III	Formula IV
1	13,1	13,1	13	13,5
2	13,4	13,9	13,4	13,5
3	13,6	13,9	13,8	12,6
4	13,3	13,9	14	12,6
5	14,2	13,1	14,1	13,5
6	14,2	13,4	13,9	12,6
7	14,2	13,8	13,4	13,3
8	14,3	13,1	14	12,6
9	13,6	13,1	14	13,3
10	13,3	13,9	13,7	13,5
Rata-rata ± SD	13,72 ± 0,46	13,52 ± 0,39	13,73 ± 0,36	13,1 ± 0,45
SD rel (%)	3,35	2,88	2,62	3,44

REPLIKASI II

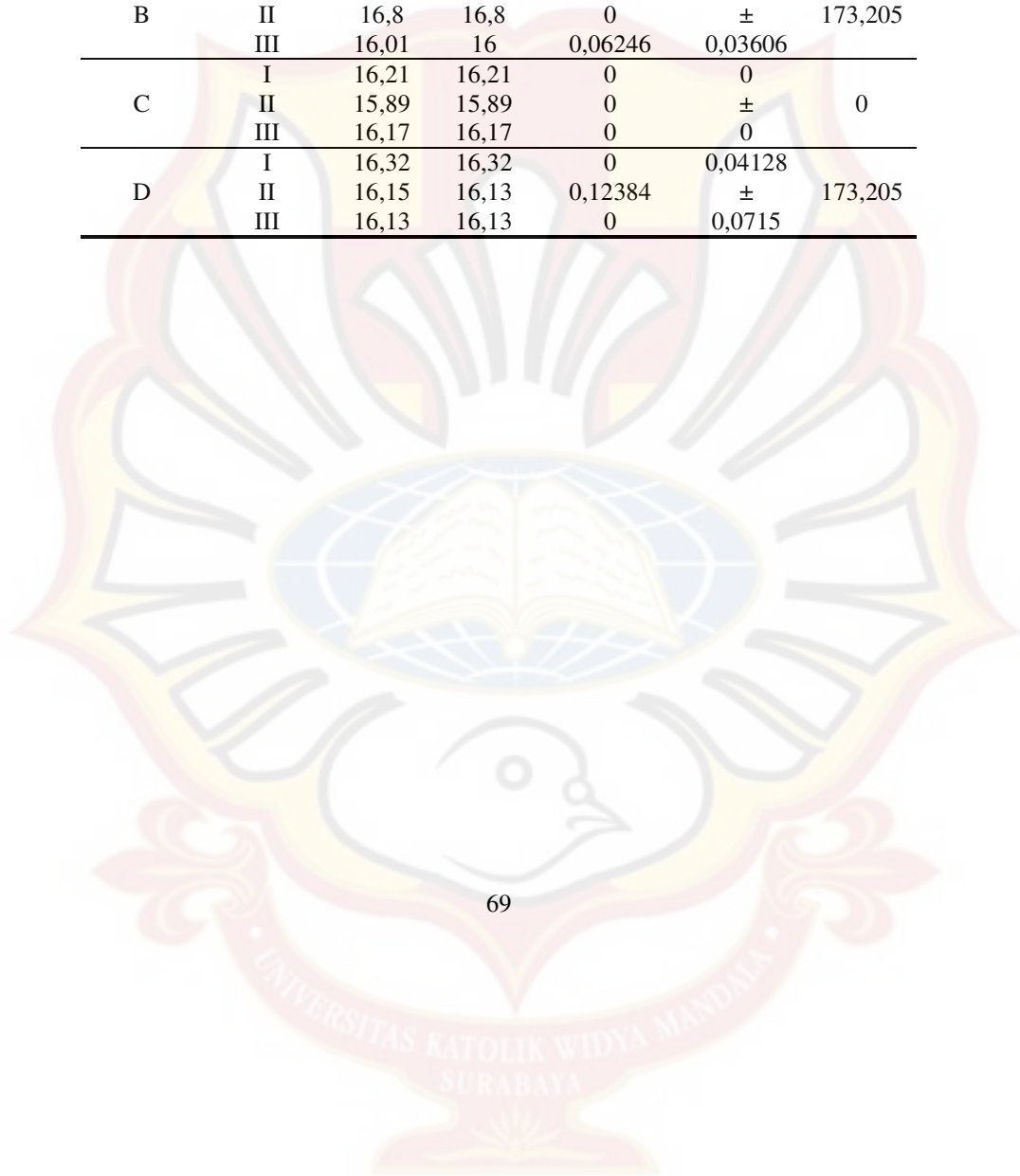
No	Kekerasan Tablet Likuisolid Ibuprofen (Kp)			
	Formula I	Formula II	Formula III	Formula IV
1	13,2	14,4	12,7	12,2
2	12,5	14	13	12,4
3	13,2	13,8	12	12,1
4	13,2	14,2	12,5	12,1
5	12,5	14,2	12,6	12,5
6	12,6	14,4	12,8	12,1
7	12,5	14,4	13	12,7
8	13	13,8	12,5	12,6
9	13,2	13,8	12,6	12,7
10	12,5	14	12,8	12,6
Rata-rata ± SD	12,84 ± 0,34	14,1 ± 0,25	12,65 ± 0,29	12,4 ± 0,25
SD rel (%)	2,65	1,77	2,29	2,02

REPLIKASI III

No	Kekerasan Tablet Likuisolid Ibuprofen (Kp)			
	Formula I	Formula II	Formula III	Formula IV
1	13,4	13,5	13	13,1
2	13	13,1	13	12,8
3	13,4	13,4	13,6	13,2
4	13	13,3	13,4	13,4
5	13,4	13,6	13,2	12,7
6	13,2	13,2	13,4	12,7
7	13,4	13,5	13,3	12,9
8	13,2	13,3	13,6	13,4
9	12,9	13,4	13,6	13,4
10	13	13,1	13,2	13
Rata-rata ± SD	13,19 ± 0,2	13,34 ± 0,17	13,33 ± 0,23	13,06 ± 0,28
SD rel (%)	1,52	1,27	1,72	2,14

LAMPIRAN C
HASIL UJI KERAPUHAN TABLET LIKUISOLID IBUPROFEN

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	Rata-rata ±SD	SDrel (%)
A	I	15,9	15,88	0,12579	0,10474	34,73
	II	15,94	15,93	0,06274	±	
	III	15,91	15,89	0,12571	0,03638	
B	I	16,2	16,2	0	0,02082	173,205
	II	16,8	16,8	0	±	
	III	16,01	16	0,06246	0,03606	
C	I	16,21	16,21	0	0	0
	II	15,89	15,89	0	±	
	III	16,17	16,17	0	0	
D	I	16,32	16,32	0	0,04128	173,205
	II	16,15	16,13	0,12384	±	
	III	16,13	16,13	0	0,0715	



LAMPIRAN D

HASIL UJI WAKTU HANCUR TABLET LIKUISOLID IBUPROFEN

Replikasi	Waktu Hancur (menit)			
	Formula A	Formula B	Formula C	Formula D
I	0,32	1,5	3,16	5,09
II	0,2	1,7	2,15	4,5
III	0,18	1,36	3,05	4,9
Rata-rata ±SD	0,23±0,08	1,52±0,17	2,79 ±0,55	4,83±0,30



LAMPIRAN E
HASIL UJI KERAGAMAN BOBOT TABLET LIKUISOLID
IBUPROFEN

Hasil Uji Keragaman Bobot Tablet Formula A

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	836,5	99,8051614	829,5	97,8324654	834,8	98,5290715
2	829,4	98,9580404	830	97,8914361	836	98,6707041
3	837,5	99,9244742	838,2	98,8585563	837,4	98,8359421
4	836,5	99,8051614	835	98,4811436	831,4	98,1277791
5	837,9	99,9721993	839,9	99,0590569	830,4	98,009752
6	838,8	100,079581	839,5	99,0118803	837,8	98,883153
7	842,7	100,544901	834,6	98,433967	833	98,3166226
8	846,9	101,046015	839,3	98,988292	841,1	99,2726426
9	835	99,6261922	833,9	98,3514079	835,6	98,6234932
10	840,7	100,306275	847,8	99,9907946	841	99,2608399
Rata-rata	838,19	100,0068	836,77	98,6899	835,85	98,653
SD		0,55762907		0,63649685		0,42936406
Sdrel (%)		0,55759116		0,64494629		0,43522656

Hasil Uji Keragaman Bobot Tablet Formula B

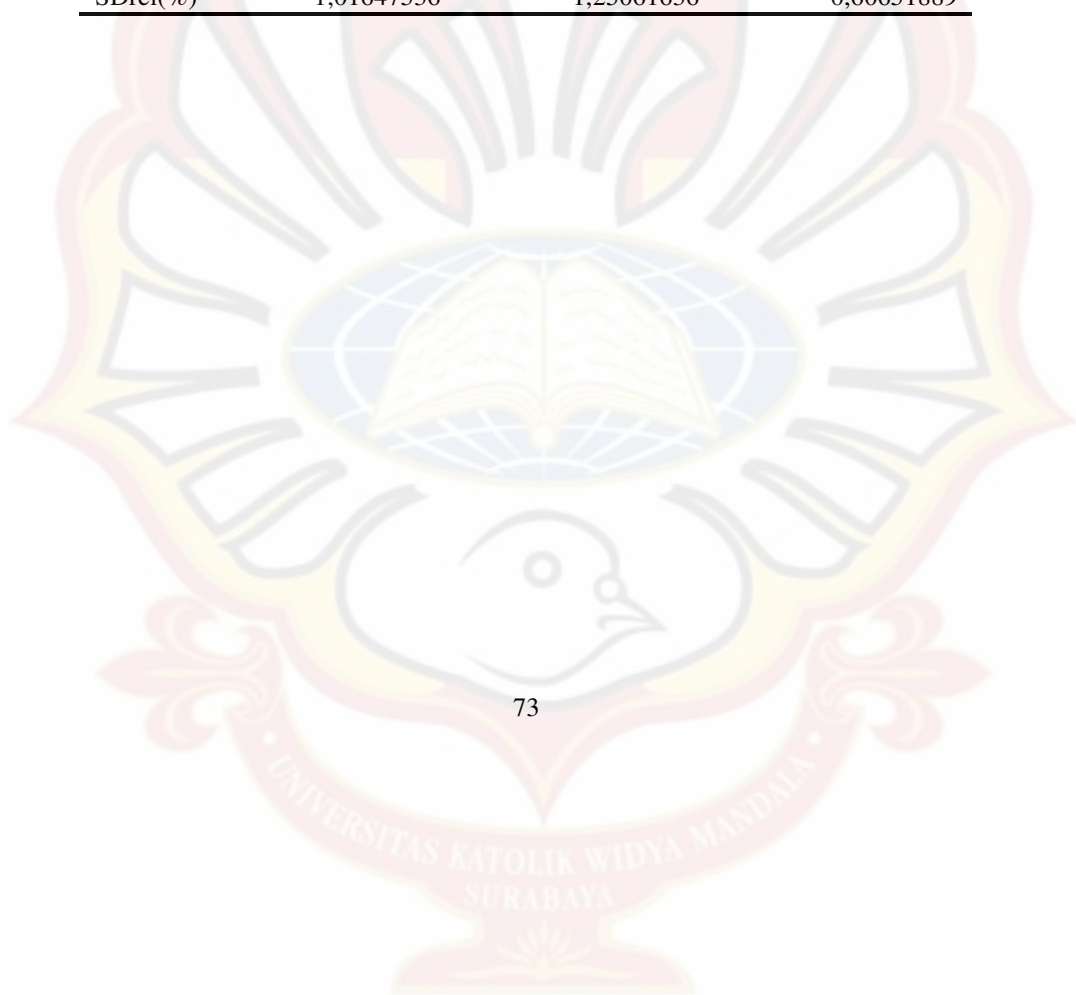
No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	839,2	99,4887964	830,2	100,6222	836	99,2072635
2	838,2	99,3702445	830,8	100,694921	836,3	99,2428642
3	832,9	98,7419191	837,9	101,555458	834,7	99,0529939
4	849,6	100,721737	837,1	101,458496	837	99,3259325
5	828,2	98,184725	823	99,749543	831,4	98,6613862
6	842,5	99,8800179	838,5	101,62818	839,6	99,6344718
7	842,5	99,8800179	837,1	101,458496	833,6	98,922458
8	842,1	99,8325971	805	97,5679005	838,5	99,503936
9	843,3	99,9748594	831,3	100,755523	826,6	98,0917752
10	839	99,465086	831,1	100,731282	831	98,6139187
Rata-rata	839,75	99,554	830,2	100,6222	834,47	99,0257
SD		0,70009809		1,22051841		0,46612896
SDrel(%)		0,70323451		1,2129713		0,47071513

Hasil Uji Keragaman Bobot Tablet Formula C

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	839,9	98,6627377	839,1	99,9282765	822,9	99,0197005
2	837,4	98,3690636	841,5	100,214092	825	99,2723939
3	839,6	98,6274968	833	99,2018285	834,1	100,367398
4	845,4	99,3088206	834,9	99,4280992	827,4	99,5611863
5	847,6	99,5672538	828,6	98,6778332	824,5	99,2122288
6	847,9	99,6024947	825,7	98,3324727	829,5	99,8138796
7	838,5	98,4982802	830,8	98,9398309	816,6	98,2616204
8	839,4	98,6040029	837,3	99,7139148	837,1	100,728389
9	827,4	97,1943674	834	99,3209183	811,6	97,6599695
10	848,3	99,6494825	836,4	99,6067339	812,4	97,7562337
Rata-rata	841,14	98,8084	834,13	99,3364	824,11	99,1653
SD		0,75676943		0,5736689		1,0311086
SDrel(%)		0,76589585		0,57750119		1,03978771

Hasil Uji Keragaman Bobot Tablet Formula D

No	Replikasi I		Replikasi II		Replikasi III	
	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)	Bobot Tablet (mg)	Y (%)
1	824,6	98,0834499	831,4	98,482602	841,9	100,586411
2	840,8	100,010386	842,4	99,7855953	840,7	100,44304
3	831,5	98,9041821	837	99,145944	840,3	100,39525
4	844	100,391016	846,1	100,223875	838	100,120456
5	840,3	99,9509131	834,9	98,8971908	843,2	100,741729
6	843,8	100,367227	830,1	98,3286119	826,9	98,7942784
7	841,9	100,141228	838,7	99,3473157	839,2	100,263827
8	832	98,9636555	814,6	96,4925759	842,1	100,610306
9	842,8	100,24828	824,4	97,6534244	842,9	100,705886
10	820,6	97,6076631	817	96,7768653	833,5	99,5828166
Rata-rata	836,23	99,4668	831,66	98,5134	838,87	100,2244
SD		1,01105551		1,2320247		0,60787992
SDrel(%)		1,01647536		1,25061636		0,60651889



LAMPIRAN F
HASIL UJI KESERAGAMAN KANDUNGAN TABLET
LIKUISOLID IBUPROFEN

Hasil Uji Keseragaman Kandungan Tablet Formula A Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,569	845,3	312,91	316,9875	98,713571
0,567	831,1	311,828	311,6625	100,05311
0,564	843	310,206	316,125	98,127486
0,566	836,6	311,287	313,725	99,222944
0,565	830,8	310,746	311,55	99,742048
0,56	836,7	308,042	313,7625	98,176865
0,576	843,5	316,696	316,3125	100,12109
0,573	843,7	315,073	316,3875	99,584532
0,578	837,9	317,777	314,2125	101,13448
0,567	837,4	311,828	314,025	99,300379
			Rata-rata	99,41765
			SD	0,9268031
			KV	0,932232

Hasil Uji Keseragaman Kandungan Tablet Formula A Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,583	842,1	320,481	315,7875	101,48639
0,572	839,6	314,532	314,85	99,899057
0,584	845,1	321,022	316,9125	101,29679
0,578	841,9	317,777	315,7125	100,65397
0,591	842,1	324,808	315,7875	102,85651
0,568	842,7	312,369	316,0125	98,846991
0,585	845,2	321,563	316,95	101,45544
0,587	838,9	322,645	314,5875	102,56119
0,574	837,8	315,614	314,175	100,45798
0,583	843,4	320,481	316,275	101,32996
			Rata-rata	101,08443
			SD	1,1885875
			KV	1,1758364

Hasil Uji Keseragaman Kandungan Tablet Formula A Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,552	836,5	303,716	313,6875	96,821047
0,573	830,7	315,073	311,5125	101,14298
0,559	831,6	307,501	311,85	98,605532
0,553	839	304,256	314,625	96,704443
0,566	836,2	311,287	313,575	99,270408
0,563	834,8	309,665	313,05	98,918602
0,557	832,7	306,42	312,2625	98,128878
0,552	833,3	303,716	312,4875	97,192855
0,56	835,7	308,042	313,3875	98,294343
0,554	838,4	304,797	314,4	96,94567
			Rata-rata	98,202475
			SD	1,3835345
			KV	1,408859

Hasil Uji Keseragaman Kandungan Tablet Formula B Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,56	839,2	308,042	314,7	97,884393
0,569	846	312,91	317,25	98,631893
0,566	844,5	311,287	316,6875	98,294749
0,557	838	306,42	314,25	97,508253
0,561	842,4	308,583	315,9	97,683766
0,568	845	312,369	316,875	98,57794
0,567	833,5	311,828	312,5625	99,765012
0,577	841,3	317,236	315,4875	100,55433
0,556	837	305,879	313,875	97,452442
0,571	840	313,991	315	99,679793
			Rata-rata	98,603257
			SD	1,0696607
			KV	1,0848127

Hasil Uji Keseragaman Kandungan Tablet Formula B Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,567	839,2	311,828	314,7	99,08739
0,564	839,4	310,206	314,775	98,548333
0,557	847,4	306,42	317,775	96,426618
0,561	838	308,583	314,25	98,196664
0,574	842,1	315,614	315,7875	99,945009
0,583	842,7	320,481	316,0125	101,41413
0,561	833,9	308,583	312,7125	98,679464
0,566	843,6	311,287	316,35	98,399615
0,571	842,7	313,991	316,0125	99,36042
0,559	839	307,501	314,625	97,735829
			Rata-rata	98,779348
			SD	1,3293578
			KV	1,3457852

Hasil Uji Keragaman Kandungan Tablet Formula B Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,551	840,7	303,175	315,2625	96,165795
0,571	833,5	313,991	312,5625	100,45714
0,566	832,2	311,287	312,075	99,747555
0,563	839	309,665	314,625	98,42342
0,552	838,4	303,716	314,4	96,601629
0,581	843,1	319,4	316,1625	101,0239
0,579	842	318,318	315,75	100,8133
0,569	835,7	312,91	313,3875	99,847531
0,558	844,6	306,961	316,725	96,917048
0,562	838,4	309,124	314,4	98,321835
			Rata-rata	98,831915
			SD	1,807947
			KV	1,829315

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,573	846,6	315,073	317,475	99,243409
0,582	840	319,941	315	101,56842
0,569	843,3	312,91	316,2375	98,947684
0,566	843,8	311,287	316,425	98,376292
0,565	845,2	310,746	316,95	98,042704
0,574	839,9	315,614	314,9625	100,2068
0,581	840,6	319,4	315,225	101,32435
0,561	834,9	308,583	313,0875	98,561271
0,561	838,4	308,583	314,4	98,149815
0,562	840,5	309,124	315,1875	98,076177
			Rata-rata	99,249691
			SD	1,3320169
			KV	1,3420866

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,578	841,9	317,777	315,7125	100,65397
0,572	838,5	314,532	314,4375	100,03011
0,582	843,1	319,941	316,1625	101,19496
0,566	838,8	311,287	314,55	98,962703
0,571	841,3	313,991	315,4875	99,525765
0,574	837,5	315,614	314,0625	100,49396
0,569	837,2	312,91	313,95	99,668635
0,567	842,4	311,828	315,9	98,710989
0,569	842,3	312,91	315,8625	99,065157
0,568	838,9	312,369	314,5875	99,294742
			Rata-rata	99,760099
			SD	0,8143533
			KV	0,8163117

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,577	839,4	317,236	314,775	100,78194
0,573	841,3	315,073	315,4875	99,86862
0,562	839,5	309,124	314,8125	98,193004
0,581	839,2	319,4	314,7	101,49338
0,574	843,3	315,614	316,2375	99,802789
0,563	845,3	309,665	316,9875	97,689872
0,57	844,5	313,451	316,6875	98,977861
0,565	837,4	310,746	314,025	98,955927
0,579	839,7	318,318	314,8875	101,08944
0,578	838,8	317,777	314,55	101,02597
			Rata-rata	99,78788
			SD	1,3091172
			KV	1,3119

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,566	822,4	311,287	308,4	100,93618
0,574	832	315,614	312	101,15828
0,571	848,7	313,991	318,2625	98,657978
0,584	845,2	321,022	316,95	101,2848
0,587	847,8	322,645	317,925	101,48452
0,541	802,9	297,766	301,0875	98,896952
0,543	800,1	298,848	300,0375	99,603558
0,563	813,7	309,665	305,1375	101,48365
0,565	835,8	310,746	313,425	99,145362
0,574	836,8	315,614	313,8	100,57803
			Rata-rata	100,32293
			SD	1,1289318
			KV	1,1252979

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,574	839	315,614	314,625	100,31429
0,569	836,5	312,91	313,6875	99,75204
0,576	840,7	316,696	315,2625	100,45455
0,559	836,3	307,501	313,6125	98,05137
0,568	833,7	312,369	312,6375	99,914069
0,571	836,4	313,991	313,65	100,10883
0,569	839,7	312,91	314,8875	99,371897
0,567	821,8	311,828	308,175	101,18537
0,558	825,8	306,961	309,675	99,123442
0,574	838,4	315,614	314,4	100,38608
			Rata-rata	99,866194
			SD	0,8641794
			KV	0,8653373

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,577	841,9	317,236	315,7125	100,48267
0,565	837,2	310,746	313,95	98,979567
0,574	839,4	315,614	314,775	100,26649
0,573	840,9	315,073	315,3375	99,916126
0,566	831,4	311,287	311,775	99,843535
0,572	831,8	314,532	311,925	100,83584
0,562	824,8	309,124	309,3	99,943049
0,576	836,7	316,696	313,7625	100,93479
0,561	827,8	308,583	310,425	99,406626
0,578	842,4	317,777	315,9	100,59423
			Rata-rata	100,12029
			SD	0,6247649
			KV	0,6240143

LAMPIRAN G
HASIL PENETAPAN KADAR TABLET LIKUISOLID IBUPROFEN

Formula	Replikasi	Absorbansi	Csampil (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	Rata-rata ±SD	SD rel (%)
A	I	0,546	300,4705246	300,45	100,006831	99,1165806	
	II	0,538	296,1438615	300,075	98,689948	±	0,77807515
	III	0,538	296,1438615	300,188	98,6529624	0,77120149	
B	I	0,543	298,848026	300,188	99,5537875	99,7338861	
	II	0,549	302,0930233	300,225	100,622208	±	0,815537
	III	0,54	297,2255273	300,15	99,0256629	0,81336674	
C	I	0,539	296,6846944	300,263	98,8084408	99,1003775	
	II	0,542	298,3071931	300,3	99,3363946	±	0,27081868
	III	0,541	297,7663602	300,3	99,1562971	0,26838233	
D	I	0,543	298,848026	300,45	99,4668084	99,4275188	
	II	0,538	296,1438615	300,375	98,5913813	±	0,82190667
	III	0,547	301,0113575	300,338	100,224367	0,8172014	

LAMPIRAN H

HASIL UJI DISOLUSI TABLET LIKUISOLID IBUPROFEN FORMULA A

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	%obat terlepas	AUC (µg menit / ml)
I	10	0,263	147,41482	132,67334	66,92792	663,36668
	20	0,291	162,55814	146,30233	73,80315	1394,8783
	30	0,331	184,19145	165,77231	83,62491	1560,3732
	45	0,346	192,30395	173,07355	87,30807	2541,344
	60	0,347	192,84478	173,5603	87,55362	2599,7539
						8759,7161
II	10	0,265	148,49648	133,647	67,419	668,234
	20	0,293	163,63981	147,276	74,2942	1404,61
	30	0,333	185,27312	166,746	84,116	1570,11
	45	0,34	189,05895	170,153	85,8348	2526,74
	60	0,348	193,38561	174,047	87,7992	2581,5
						8751,2
III	10	0,265	148,496	133,647	67,419	668,234
	20	0,294	164,181	147,763	74,5398	1407,05
	30	0,332	184,732	166,259	83,8705	1570,11
	45	0,347	192,845	173,56	87,5536	2548,65
	60	0,349	193,926	174,534	88,0447	2610,71
						8804,74

HASIL UJI DISOLUSI TABLET LIKUISOLID IBUPROFEN FORMULA B

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	% obat terlepas	AUC (µg menit / ml)
I	10	0,343	190,68145	171,6133	86,0356	858,06652
	20	0,37	205,28394	184,75554	92,62426	1781,8442
	30	0,377	209,06977	188,16279	94,33243	1864,5917
	45	0,382	211,77393	190,59654	95,55255	2840,695
	60	0,4	221,50892	199,35803	99,94498	2924,6593
						10269,857
II	10	0,335	186,35479	167,71931	84,08341	838,59654
	20	0,357	198,25311	178,4278	89,45194	1730,7355
	30	0,359	199,33478	179,4013	89,93999	1789,1455
	45	0,368	204,20227	183,78204	92,13621	2723,8751
	60	0,396	219,34559	197,41103	98,96889	2858,9481
						9941,3007
III	10	0,343	190,68145	171,6133	86,0356	858,06652
	20	0,38	210,69227	189,62304	95,0645	1806,1817
	30	0,387	214,4781	193,03029	96,77267	1913,2666
	45	0,39	216,10059	194,49054	97,50474	2906,4062
	60	0,398	220,42726	198,38453	99,45693	2946,563
						10430,484

HASIL UJI DISOLUSI TABLET LIKUISOLID IBUPROFEN FORMULA C

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	% obat terlepas	AUC (µg menit / ml)
I	10	0,285	159,313	143,382	72,3417	716,909
	20	0,333	185,273	166,746	84,1298	1550,64
	30	0,334	185,814	167,233	84,3753	1669,89
	45	0,372	206,366	185,729	93,7075	2647,21
	60	0,38	210,692	189,623	95,6722	2815,14
II	10	0,306	170,671	153,604	77,499	768,018
	20	0,315	175,538	157,984	79,7092	1557,94
	30	0,343	190,681	171,613	86,5856	1647,99
	45	0,371	205,825	185,242	93,462	2676,42
	60	0,384	212,856	191,57	96,6545	2826,09
III	10	0,305	170,13	153,117	77,2534	765,584
	20	0,318	177,161	159,445	80,446	1562,81
	30	0,341	189,6	170,64	86,0944	1650,42
	45	0,372	206,366	185,729	93,7075	2672,77
	60	0,386	213,937	192,544	97,1457	2837,04

HASIL UJI DISOLUSI TABLET LIKUISOLID IBUPROFEN FORMULA D

Replikasi	t (menit)	A	C (µg/ml)	Wt (mg)	%obat terlepas	AUC (µg menit / ml)
I	10	0,262	146,874	132,187	66,4738	660,933
	20	0,307	171,211	154,09	77,4888	1431,38
	30	0,325	180,946	162,852	81,8947	1584,71
	45	0,334	185,814	167,233	84,0977	2475,63
	60	0,339	188,518	169,666	85,3216	2526,74
						8679,4
II	10	0,259	145,251	130,726	65,7395	653,632
	20	0,31	172,834	155,551	78,2231	1431,38
	30	0,321	178,783	160,905	80,9156	1582,28
	45	0,334	185,814	167,233	84,0977	2461,03
	60	0,344	191,222	172,1	86,5455	2544,99
						8673,32
III	10	0,268	150,119	135,107	67,9425	675,535
	20	0,305	170,13	153,117	76,9992	1441,12
	30	0,326	181,487	163,339	82,1395	1582,28
	45	0,335	186,355	167,719	84,3425	2482,93
	60	0,34	189,059	170,153	85,5664	2534,04
						8715,91

LAMPIRAN I
CONTOH PERHITUNGAN

Contoh perhitungan sudut diam:

Formula B1:

$$W \text{ persegi panjang} = 4,42 \text{ gram}$$

$$W \text{ lingkaran} = 1,29 \text{ gram}$$

$$\text{Luas persegi panjang} = 626,67 \text{ cm}^2$$

$$\text{Luas lingkaran} = \frac{4,42}{1,29} \times 626,67 = 2147,195 \text{ cm}^2$$

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

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

$$= \frac{2147,195}{3,1}$$

$$r = 69,26435 \text{ cm}$$

$$\text{tg } \alpha = \frac{t}{r} = \frac{3,62}{69,26435} = 25,37^\circ$$

Contoh perhitungan indeks kompresibilitas dan Hausner ratio:

Formula B1 :

$$\text{Berat gelas} = 121,51 \text{ g } (W_1)$$

$$\text{Berat gelas + granul} = 157,70 \text{ g } (W_2)$$

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

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

$$\text{Bj nyata} = \frac{(W_2 - W_1)}{V_1} = \frac{157,70 - 121,51}{100} = 0,3619$$

$$\text{Bj mampat} = \frac{(W_2 - W_1)}{V_2} = \frac{157,70 - 121,51}{82} = 0,4413$$

$$\% \text{ kompresibilitas} = \left(1 - \frac{\text{Bj nyata}}{\text{Bj mampat}} \right) \times 100\% = 18\%$$

$$\text{HR} = \frac{\text{Bj mampat}}{\text{Bj nyata}} = 1,22$$

Contoh perhitungan akurasi & presisi:

%	Bahan aktif (mg)	Matriks (mg)	Dapar fosfat 0,2M pH7,2 ad	Pipet	Dapar fosfat 0,2M pH7,2 ad	Konsentrasi (ppm)
100	2024	600,6	100	1,5	10	313,6

$$\text{Absorbansi} = 0,566 \rightarrow y = 0,001849x - 0,00957$$

$$\text{Konsentrasi sebenarnya} = 311,287182 \text{ ppm}$$

$$\text{Konsentrasi teoritis} = 313,6 \text{ ppm}$$

$$\% \text{ perolehan kembali} = (\text{konsentrasi sebenarnya} / \text{konsentrasi teoritis}) \times 100\%$$

$$= (311,287182 / 313,6) \times 100\% = 99,26\%$$

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

$$= \frac{0,259}{99,39} \times 100\% = 0,26\%$$

Contoh perhitungan % obat terlepas:

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

Formula A replikasi 1 pada t = 10 menit

$$\% \text{ obat terlepas} = \frac{132,673}{\frac{99,1166}{100} \times 200} \times 100\% = 66,92\%$$

Contoh perhitungan AUC pada disolusi:

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

Formula A replikasi 1

$$W_{t_{n-1}} = 132,67$$

$$W_{t_n} = 146,30$$

$$t_n = 20 \text{ menit}$$

$$t_{n-1} = 10 \text{ menit}$$

$$\text{AUC} = \frac{132,67 + 146,30}{2} \times (20 - 10) = 1394,88$$

Luas □ = 60 x penetapan kadar x dosis

$$\begin{aligned} &= 60 \times 99,1166\% \times 200 \text{ mg} \\ &= 11893,99 \end{aligned}$$

$$\begin{aligned} \% \text{ ED Formula A replikasi 1} &= (\sum \text{AUC} / \text{luas } \square) \times 100\% \\ &= (8759,72/11893,99) \times 100\% \\ &= 73,65 \% \end{aligned}$$



LAMPIRAN J
SERTIFIKAT IBUPROFEN



Shasun Chemicals And Drugs Ltd.

IBUPROFEN BP/Ph.Eur. (SN Grade) CERTIFICATE OF ANALYSIS												
S.No	TESTS	RESULTS										
<table border="0" style="width: 100%; font-size: small;"> <tr> <td style="width: 50%;">Nature of Packing : Sea Worthy Fibre Drum</td> <td style="width: 50%;">Analytical Report No. : FPBU0607674</td> </tr> <tr> <td>Sample Taken By : S.Sivakumar</td> <td>Batch Number : IBU0607674</td> </tr> <tr> <td>Date of Manufacture : July 2006</td> <td>Date of Analysis : 25-07-2006</td> </tr> <tr> <td>Expiry Date : June 2011</td> <td>Date of Report : 25-07-2006</td> </tr> <tr> <td>Batch Volume(Qty) : 3000 Kg.</td> <td>Manufactured By : Shasun Chemicals And Drugs Limited, Pondicherry.</td> </tr> </table>			Nature of Packing : Sea Worthy Fibre Drum	Analytical Report No. : FPBU0607674	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.
Nature of Packing : Sea Worthy Fibre Drum	Analytical Report No. : FPBU0607674											
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.											
1.	Appearance	White crystalline powder										
2.	Solubility	Complies										
3.	Clarity and colour of solution	Complies										
4.	Identification	Conforms										
	a) By IR											
	b) By UV	1.24										
	c) By TLC	1.03										
	d) Melting point	76.1 °C										
5.	Optical rotation	0.20 °										
6.	Heavy metals	LT 10 PPM										
7.	Related substances (by HPLC)											
	a) 2-(4-Isobutyl) Phenyl Propanoic Acid (Impurity J)	0.06 % (Area %)										
	b) 2-(4-Butyl phenyl)propanoic acid (Impurity D)	Not Detected										
	c) 4-Isobutylacetophenone (Impurity E)	Not Detected										
	d) Any unidentified impurity (Apart from impurity B)	0.04 % (Area %)										
	e) Total impurities	0.14 % (Area %)										
8.	Sulphated ash	0.04 % (w/w)										
9.	Loss on drying	0.10 % (w/w)										
10.	Assay (dry basis)	99.8 % (w/w)										

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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. : FPIBU0607674	
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 ϕ	Not Detected	NMT 500 PPM
OPINION: The Material Complies As Per BP/Ph.Eur. Standard.			
Note :NMT = Not more than NLT = Not less than LT = Less than			
ϕ NOT USED IN THE PROCESS, TEST INCLUDED FOR COMPLIANCE WITH CERTIFICATE OF SUITABILITY.			
Compiled by : <i>CS</i> Date : 25/07/2006 (E.Senthikumar) Senior Chemist		Reviewed by : <i>SR</i> Date : 25/07/2006 (S.Rajasudalaiimuthu) Senior Chemist	Approved by : <i>[Signature]</i> Date : 25/07/2006 (N.Vinayaperumal) Dy.QC-Incharge

SCQC/F-024/F/06

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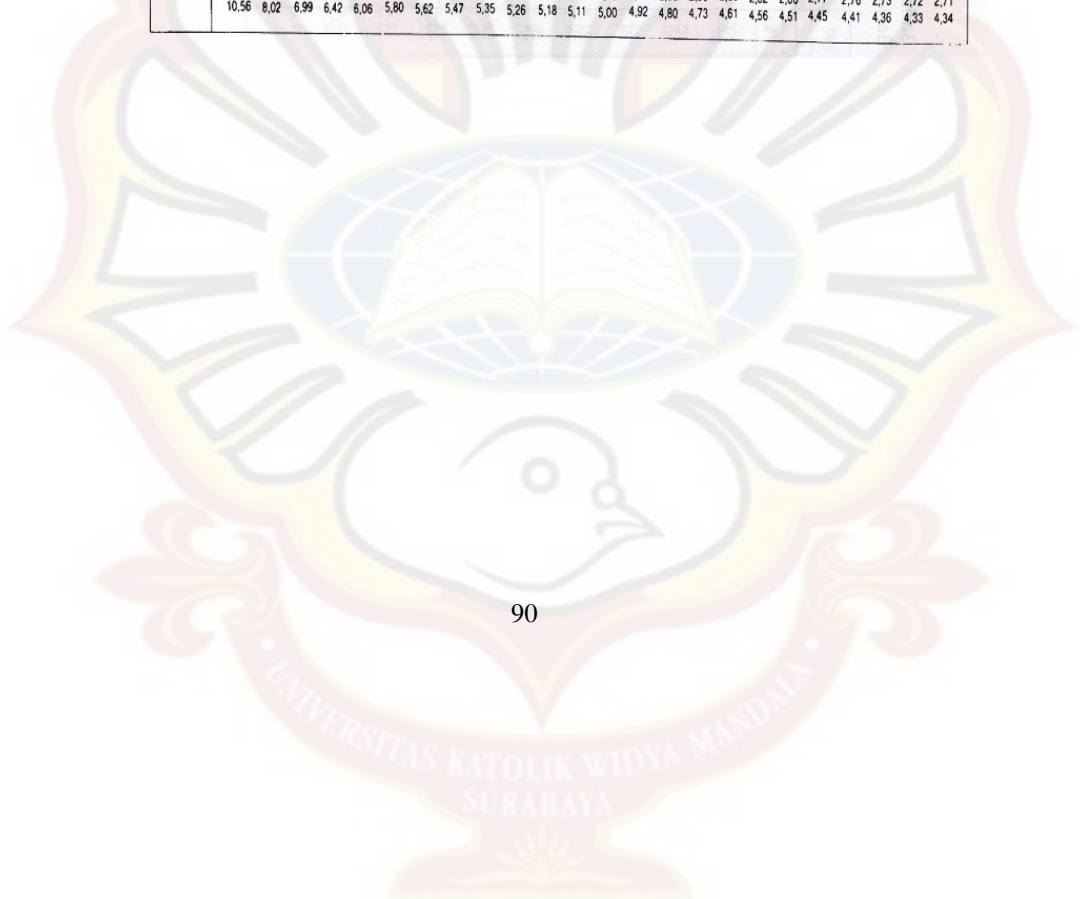
LAMPIRAN K

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 5825	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 99,36	19,37 99,36	19,38 99,36	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 99,50	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	5,63 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				



LAMPIRAN L

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

Dikutip dari: Soedigdo & Soedigdo (1977)

LAMPIRAN M
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 N

HASIL UJI STATISTIK KEKERASAN TABLET ANTAR FORMULA

ANOVA

VAR00002

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.961	3	.320	1.588	.267
Within Groups	1.613	8	.202		
Total	2.574	11			

keterangan:

$F_{hitung} < F_{(3,8)}$, ($1,588 < 4,07$) sehingga H_0 diterima

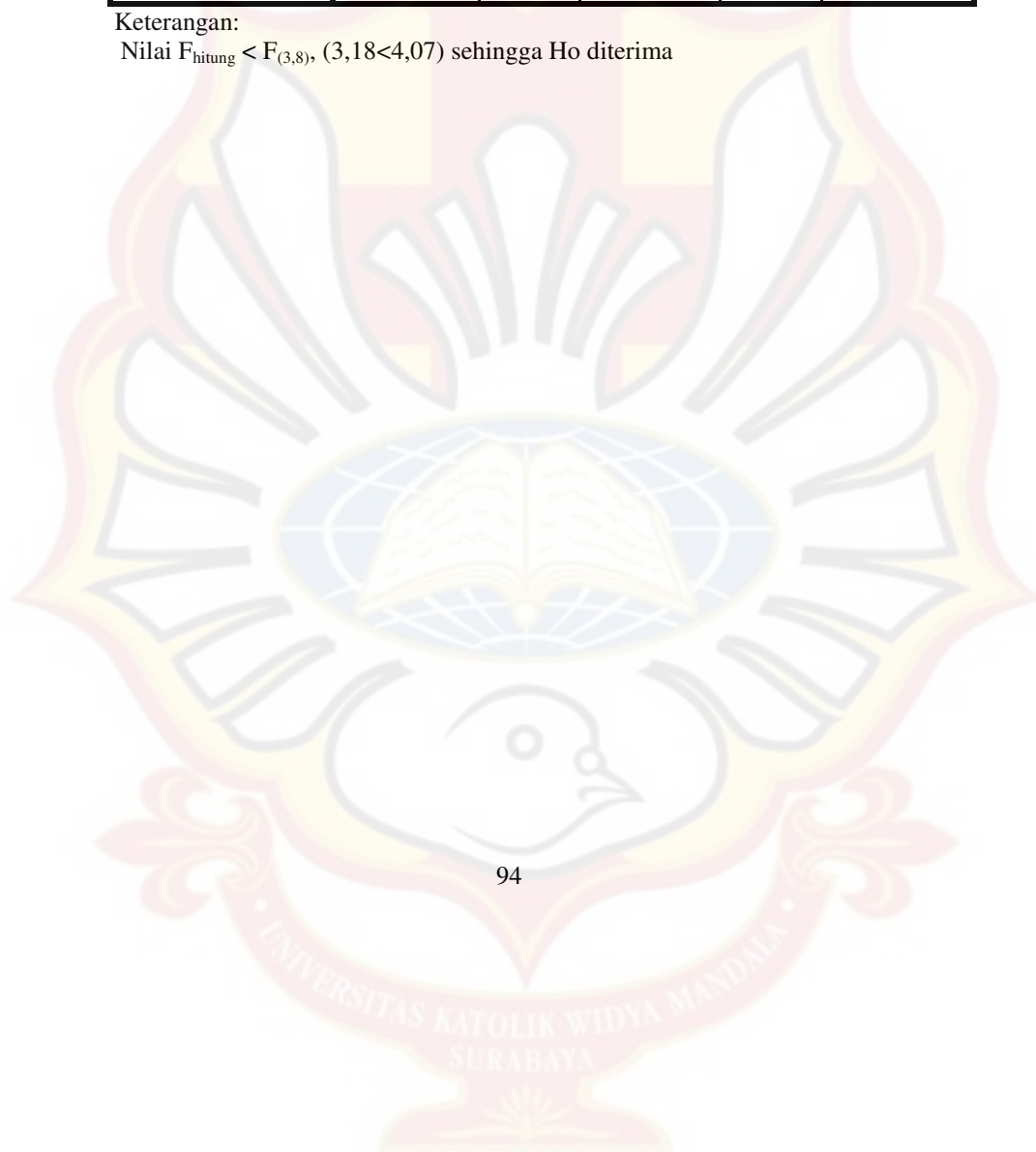
LAMPIRAN O
HASIL UJI STATISTIK KERAPUHAN ANTAR FORMULA
ANOVA

VAR00002

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.018	3	.006	3.181	.085
Within Groups	.015	8	.002		
Total	.034	11			

Keterangan:

Nilai $F_{hitung} < F_{(3,8)}$, ($3,18 < 4,07$) sehingga H_0 diterima



LAMPIRAN P
HASIL UJI STATISTIK WAKTU HANCUR ANTAR FORMULA
ANOVA

VAR00004

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34.530	3	11.510	106.410	.000
Within Groups	.865	8	.108		
Total	35.395	11			

Keterangan:
 Nilai $F_{hitung} > F_{(3,8)}$

Hasil uji HSD waktu hancur
Multiple Comparisons

VAR00004
 Tukey HSD

(I) VAR000 01	(J) VAR000 01	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-1.28667*	.26854	.006	-2.1466	-.4267
	3.00	-2.55333*	.26854	.000	-3.4133	-1.6934
	4.00	-4.59667*	.26854	.000	-5.4566	-3.7367
2.00	1.00	1.28667*	.26854	.006	.4267	2.1466
	3.00	-1.26667*	.26854	.007	-2.1266	-.4067
	4.00	-3.31000*	.26854	.000	-4.1699	-2.4501
3.00	1.00	2.55333*	.26854	.000	1.6934	3.4133
	2.00	1.26667*	.26854	.007	.4067	2.1266
	4.00	-2.04333*	.26854	.000	-2.9033	-1.1834
4.00	1.00	4.59667*	.26854	.000	3.7367	5.4566
	2.00	3.31000*	.26854	.000	2.4501	4.1699
	3.00	2.04333*	.26854	.000	1.1834	2.9033

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

LAMPIRAN Q
UJI F KURVA BAKU PENETAPAN KADAR

REPLIKASI I

KONSENTRASI	ABSORBANSI	X ²	Y ²	XY
100,8	0,211	10160,64	0,044521	21,2688
201,6	0,387	40642,56	0,149769	78,0192
302,4	0,558	91445,76	0,311364	168,7392
403,2	0,742	162570,24	0,550564	299,1744
504	0,906	254016	0,820836	456,624
		558835,2	1,877054	1023,8256

REPLIKASI II

KONSENTRASI	ABSORBANSI	X ²	Y ²	XY
100,4	0,21	10080,16	0,0441	21,084
200,8	0,385	40320,64	0,148225	77,308
301,2	0,572	90721,44	0,327184	172,2864
401,6	0,747	161282,56	0,558009	299,9952
502	0,908	252004	0,824464	455,816
			554408,8	1,901982

REPLIKASI III

KONSENTRASI	ABSORBANSI	X ²	Y ²	XY
100,5	0,183	10100,25	0,033489	18,3915
210	0,379	44100	0,143641	79,59
301,5	0,559	90902,25	0,312481	168,5385
402	0,743	161604	0,552049	298,686
502,5	0,922	252506,25	0,850084	463,305
			559212,75	1,891744

	∑ X ²	∑ XY	∑ Y ²	N	Residual SS	RDF
Replikasi 1	558835,2	1023,8256	1,877054	5	0,001333109	3
Replikasi 2	554408,8	1026,4896	1,901982	5	0,001433345	3
Replikasi 3	559212,75	1028,511	1,891744	5	9,38595E-05	3
<i>Pooled regression</i>					0,002860314	9
<i>Common regression</i>	1672456,75	3078,8262	5,67078		0,002967801	11

LAMPIRAN R

HASIL UJI STATISTIK DISOLUSI BERDASARKAN HARGA K
DISOLUSI

ANOVA

VAR00006

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.005	3	.002	9.065	.006
Within Groups	.001	8	.000		
Total	.006	11			

Nilai $F_{hitung} > F_{(3,8)}$

Multiple Comparisons

VAR00006

Tukey HSD

(I) VAR00001	(J) VAR00001	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-.04418*	.01072	.014	-.0785	-.0098
	3.00	-.01720	.01072	.428	-.0515	.0171
	4.00	.00713	.01072	.907	-.0272	.0415
2.00	1.00	.04418*	.01072	.014	.0098	.0785
	3.00	.02698	.01072	.131	-.0074	.0613
	4.00	.05131*	.01072	.006	.0170	.0856
3.00	1.00	.01720	.01072	.428	-.0171	.0515
	2.00	-.02698	.01072	.131	-.0613	.0074
	4.00	.02433	.01072	.185	-.0100	.0587
4.00	1.00	-.00713	.01072	.907	-.0415	.0272
	2.00	-.05131*	.01072	.006	-.0856	-.0170
	3.00	-.02433	.01072	.185	-.0587	.0100

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