LAMPIRAN A

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	764,6	99,25	756,8	99,96	758,9	101,12
2	763,1	99,06	775,3	102,4	774,2	103,20
3	763,0	99,05	754,9	99,71	756,2	100,76
4	763,8	99,15	757,9	100,10	756,7	100,82
5	756,8	98,24	760,0	100,38	755,8	100,70
6	770,2	99,98	764,2	100,94	756,3	100,77
7	768,3	99,73	759,9	100,37	770,3	102,64
8	773,5	100,41	755,8	99,83	754,8	100,57
9	767,8	99,67	763,2	100,8	749,9	99,92
10	764,7	99,27	762,5	100,7	745,6	99,35
Rata-rata	765,58	99,38	761,05	100,52	757,87	100,98
PK (%)	99,38		100,52		100,98	
SD	0,60		0,78		1,14	
KV	0,60		0,78		1,13	

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	751,7	100,86	764,3	100,25	747,0	98,71
2	751,1	100,78	773,5	101,45	751,6	99,32
3	748,0	100,36	757,4	99,34	753,3	99,55
4	758,3	101,74	761,6	99,89	754,2	99,67
5	747,5	100,29	773,2	101,41	755,3	99,81
6	749,8	100,60	757,6	99,37	759,1	100,31
7	750,1	100,64	760,1	99,70	750,8	99,22
8	748,3	100,40	761,5	99,88	749,1	98,99
9	750,9	100,75	763,3	100,12	759,3	100,34
10	751,1	100,78	771,5	101,19	761,1	100,58
Rata-rata	750,68	100,72	764,4	100,26	754,08	99,65
PK (%)	100,72		100,26		99,65	
SD	0,40		0,80		0,62	
KV	0,41		0,81		0,62	

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	748,0	100,35	757,7	99,46	748,2	100,16
2	744,8	99,92	762,0	100,03	748,3	100,17
3	751,0	100,75	766,0	100,55	760,5	101,81
4	751,9	100,87	758,3	99,54	760,3	101,78
5	746,2	100,11	755,4	99,16	750,1	100,41
6	744,7	99,91	760,0	99,76	748,3	100,17
7	739,4	99,20	751,3	98,62	741,1	99,21
8	739,6	99,22	757,6	99,45	758,3	101,51
9	750,6	100,70	756,0	99,24	750,1	100,41
10	747,4	100,27	757,1	99,38	758,7	101,56
Rata-rata	746,36	100,13	758,14	99,52	752,39	100,72
PK(%)	100,13		99,52		100,72	
SD		0,59		0,52		0,88
KV		0,59		0,52		0,88

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	728,4	100,04	758,0	99,49	757,8	99,79
2	739,6	101,58	757,9	99,48	775,4	102,10
3	739,2	101,53	751,0	98,57	768,1	101,14
4	744,4	102,24	750,1	98,45	766,3	100,90
5	739,0	101,50	761,2	99,91	742,7	97,80
6	731,1	100,41	753,4	98,89	750,9	98,88
7	729,4	100,18	760,8	99,86	761,4	100,26
8	732,7	100,63	761,8	99,99	770,3	101,43
9	734,8	100,92	754,5	99,03	769,5	101,33
10	735,9	101,07	756,0	99,23	754,7	99,38
Rata-rata	735,45	101,01	756,47	99,29	761,71	100,30
PK(%)	101,01		99,29		100,30	
SD		0,71		0,55		1,34
KV		0,70		0,55		1,33

LAMPIRAN B

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 (%)
0,534	764,6	287,90	286,73	100,41
0,524	763,1	282,45	286,16	98,70
0,528	763,0	284,63	286,13	99,48
0,531	763,8	286,26	286,43	99,94
0,520	756,8	280,27	283,80	98,75
0,533	770,2	287,36	288,83	99,49
0,541	768,3	291,72	288,11	101,25
0,528	773,5	284,63	290,06	98,13
0,527	767,8	284,08	287,93	98,67
0,526	764,7	283,54	286,76	98,88
			Rata-rata	99,37
			SD	0,95
			KV	0,95

Hasil Uji Keseragaman Kandungan Tablet Formula A ReplikasiII

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,522	756,8	281,36	283,80	99,14
0,541	775,3	291,72	290,74	100,34
0,519	754,9	279,72	283,09	98,81
0,532	757,9	286,81	284,21	100,91
0,530	760,0	285,72	285,00	100,25
0,526	764,2	283,54	286,58	98,94
0,527	759,9	284,08	284,96	99,69
0,521	755,8	280,81	283,43	99,08
0,531	763,2	286,26	286,20	100,02
0,533	762,5	287,36	285,94	100,50
			Rata-rata	99,77
			SD	0,74
			KV	0,74

Hasil Uji Keseragaman Kandungan Tablet Formula A Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,522	758,9	281,36	284,59	98,86
0,536	774,2	288,99	290,33	99,54
0,523	756,2	281,90	283,58	99,41
0,534	756,7	287,90	283,76	101,46
0,522	755,8	281,36	283,43	99,27
0,531	756,3	286,26	283,61	100,94
0,526	770,3	283,54	288,86	98,16
0,525	754,8	282,99	283,05	99,98
0,520	749,9	280,27	281,21	99,66
0,523	745,6	281,90	279,60	100,82
			Rata-rata	99,81
			SD	1,01
			KV	1,01

Hasil Uji Keseragaman Kandungan Tablet Formula B Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,524	751,7	282,45	281,89	100,2
0,513	751,1	276,45	281,66	98,10
0,518	748,0	279,17	280,50	99,53
0,531	758,3	286,26	284,36	100,67
0,515	747,5	277,54	280,31	99,01
0,519	749,8	279,72	281,18	99,48
0,523	750,1	281,90	281,29	100,22
0,530	748,3	285,72	280,61	101,82
0,515	750,9	277,54	281,59	98,56
0,520	751,1	280,27	281,66	99,50
			Rata-rata	99,71
			SD	1,07
			KV	1,07

Hasil Uji Keseragaman Kandungan Tablet Formula B Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,529	764,3	285,17	286,61	99,50
0,526	773,5	283,54	290,06	97,75
0,527	757,4	284,08	284,03	100,02
0,535	761,6	288,45	285,60	101,00
0,535	773,2	288,45	289,95	99,48
0,517	757,6	278,63	284,10	98,07
0,529	760,1	285,17	285,04	100,05
0,538	761,5	290,08	285,56	101,58
0,531	763,3	286,26	286,24	100,01
0,525	771,5	282,99	289,31	97,82
			Rata-rata	99,53
			SD	1,31
			KV	1,31

Hasil Uji Keragaman Kandungan Tablet Formula B ReplikasiIII

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,518	747,0	279,17	280,13	99,66
0,518	751,6	279,17	281,85	99,05
0,520	753,3	280,27	282,49	99,21
0,527	754,2	284,08	282,83	100,44
0,530	755,3	285,72	283,24	100,88
0,527	759,1	284,08	284,66	99,80
0,531	750,8	286,26	281,55	101,67
0,522	749,1	281,00	280,91	100,16
0,525	759,3	282,99	284,74	99,39
0,530	761,1	285,72	285,41	100,11
			Rata-rata	100,04
			SD	0,81
			KV	0,81

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,518	748,0	279,17	280,50	99,53
0,516	744,8	278,08	279,30	99,56
0,531	751,0	286,30	281,63	101,60
0,524	751,9	282,45	281,96	100,17
0,522	746,2	281,36	279,83	100,55
0,516	744,7	278,08	279,26	99,58
0,516	739,4	278,08	277,28	100,29
0,514	739,6	276,99	277,35	99,87
0,518	750,6	279,17	281,48	99,18
0,528	747,4	284,63	280,28	101,55
			Rata-rata	100,19
			SD	0,85
			KV	0,84

Hasil Uji Keseragaman Kandungan Tablet Formula C ReplikasiII

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,521	757,7	280,81	284,14	98,83
0,529	762,0	285,17	285,75	99,80
0,533	766,0	287,36	287,25	100,04
0,524	758,3	282,45	284,36	99,33
0,527	755,4	284,08	283,28	100,29
0,523	760,0	281,90	285,00	98,91
0,520	751,3	280,27	281,74	99,48
0,529	757,6	285,17	284,10	100,38
0,524	756,0	282,45	283,50	99,63
0,533	757,1	287,36	283,91	101,21
			Rata-rata	99,79
			SD	0,72
			KV	0,72

Hasil Uji Keseragaman Kandungan Tablet Formula C Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,519	748,2	279,72	280,58	99,70
0,518	748,3	279,17	280,61	99,49
0,532	760,5	286,81	285,19	100,57
0,529	760,3	285,17	285,11	100,02
0,519	750,1	279,72	281,29	99,44
0,527	748,3	284,08	280,61	101,24
0,510	741,1	274,81	277,91	98,88
0,530	758,3	285,72	284,36	100,48
0,516	750,1	278,08	281,29	98,86
0,527	758,7	284,08	284,51	99,85
			Rata-rata	99,85
			SD	0,75
			KV	0,75

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi I

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,515	728,4	277,54	273,15	101,61
0,515	739,6	277,54	277,35	100,07
0,511	739,2	275,36	277,20	99,34
0,528	744,4	284,63	279,15	101,96
0,511	739,0	275,36	277,13	99,36
0,518	731,1	279,17	274,16	101,83
0,502	729,4	270,45	273,53	98,88
0,517	732,7	278,63	274,76	101,41
0,503	734,8	270,99	275,55	98,35
0,511	735,9	275,36	275,96	99,78
			Rata-rata	100,26
			SD	1,33
			KV	1,33

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi II

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,521	758,0	280,81	284,25	98,79
0,523	757,9	281,90	284,21	99,19
0,529	751,0	285,17	281,63	101,26
0,520	750,1	280,27	281,29	99,64
0,523	761,2	281,90	285,45	98,76
0,525	753,4	283,00	282,53	100,17
0,519	760,8	279,72	285,30	98,04
0,529	761,8	285,17	285,68	99,82
0,531	754,5	286,26	282,94	101,18
0,522	756,0	281,36	283,50	99,24
			Rata-rata	99,61
			SD	1,04
			KV	1,04

Hasil Uji Keseragaman Kandungan Tablet Formula D Replikasi III

Abs	W sampel (mg)	C sampel (µg/ml)	C teoritis (µg/ml)	Kadar (%)
0,535	757,8	288,45	284,18	101,5
0,534	775,4	287,90	290,78	99,01
0,531	768,1	286,26	288,04	99,38
0,537	766,3	289,50	287,36	100,76
0,512	742,7	275,90	278,51	99,06
0,521	750,9	280,81	281,59	99,72
0,535	761,4	288,45	285,53	101,02
0,527	770,3	284,08	288,86	98,35
0,524	769,5	282,45	288,56	97,88
0,520	754,7	280,27	283,01	99,03
			Rata-rata	99,57
			SD	1,18
			KV	1,18

LAMPIRAN C

HASIL PENETAPAN KADAR TABLET LIKUISOLID IBUPROFEN

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	Rata-rata ±SD	KV
A	I	0,553	298,26	300,11	99,38	100,30 ± 0,82	0,82
	II	0,559	301,54	299,96	100,52		
	III	0,562	303,17	300,23	100,98		
B	I	0,561	302,63	300,45	100,72	100,21 ± 0,54	0,54
	II	0,559	301,54	300,75	100,26		
	III	0,555	299,35	300,41	99,65		
C	I	0,557	300,44	300,04	100,13	100,13 ± 0,60	0,60
	II	0,553	298,26	299,70	99,52		
	III	0,560	302,08	299,92	100,72		
D	I	0,562	303,17	300,15	101,01	100,20 ± 0,86	0,86
	II	0,552	297,72	299,85	99,29		
	III	0,558	300,99	300,08	100,30		

LAMPIRAN D

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	0,224	118,83	106,9	53,31	534,74
	20	0,249	132,47	119,2	59,43	1130,84
	30	0,275	146,65	132,0	65,79	1256,01
	45	0,330	176,64	159,0	79,25	2182,20
	60	0,347	185,91	167,3	83,41	2447,26
						7551,06
II	10	0,225	119,38	107,4	53,56	537,20
	20	0,251	133,56	120,2	59,92	1138,21
	30	0,278	148,28	133,5	66,53	1268,28
	45	0,329	176,10	158,5	79,01	2189,57
	60	0,349	187,00	168,3	83,90	2450,94
						7584,19
III	10	0,223	118,29	106,5	53,07	532,29
	20	0,247	131,38	118,2	58,94	1123,48
	30	0,279	148,83	133,9	66,77	1260,92
	45	0,325	173,92	156,5	78,03	2178,52
	60	0,343	183,73	165,4	82,43	2414,13
						7509,34

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	0,288	153,74	138,4	69,04	691,81
	20	0,311	166,28	149,7	74,67	1440,08
	30	0,349	187,01	168,3	83,98	1589,78
	45	0,389	208,82	187,9	93,77	2671,82
	60	0,393	211,00	189,9	94,75	2833,8
						9227,3
II	10	0,289	154,28	138,9	69,28	694,27
	20	0,310	165,74	149,2	74,42	1440,08
	30	0,351	188,10	169,3	84,47	1592,24
	45	0,388	208,28	187,4	93,53	2675,5
	60	0,394	211,55	190,4	95,00	2833,8
						9235,89
III	10	0,289	154,28	138,9	69,28	694,27
	20	0,312	166,83	150,1	74,91	1444,99
	30	0,352	188,64	169,8	84,71	1599,6
	45	0,387	207,73	187,0	93,30	2675,5
	60	0,391	209,91	188,9	94,30	2819,08
						9233,43

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	0,281	149,92	134,9	67,38	674,64
	20	0,307	164,10	147,7	73,75	1413,08
	30	0,338	181,01	162,9	81,35	1552,97
	45	0,376	201,73	181,6	90,66	2583,47
	60	0,383	205,55	185,0	92,38	2749,13
						8973,3
II	10	0,280	149,37	134,4	67,13	672,18
	20	0,305	163,01	146,7	73,26	1405,72
	30	0,336	179,92	161,9	80,86	1543,15
	45	0,375	201,19	181,1	90,42	2572,43
	60	0,385	206,64	186,0	92,87	2752,81
						8946,29
III	10	0,283	151,01	135,9	67,87	679,54
	20	0,307	164,1	147,7	73,75	1417,99
	30	0,337	180,46	162,4	81,10	1550,52
	45	0,375	201,19	181,1	90,42	2576,11
	60	0,383	205,55	185,0	92,38	2745,45
						8969,6

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	0,277	147,74	132,96	66,30	664,82
	20	0,310	165,74	149,16	74,43	1410,63
	30	0,332	177,73	159,96	79,82	1545,61
	45	0,352	188,64	169,78	84,72	2473,03
	60	0,369	197,91	178,12	88,88	2609,24
						8703,32
II	10	0,274	146,1	131,49	65,61	657,46
	20	0,311	166,28	149,65	74,68	1405,72
	30	0,331	177,19	159,47	79,58	1545,61
	45	0,353	189,19	170,27	84,96	2473,03
	60	0,368	197,37	177,63	88,64	2609,2
						8691,05
III	10	0,275	146,65	131,98	65,86	659,91
	20	0,299	159,74	143,76	71,74	1378,72
	30	0,334	178,82	160,94	80,31	1523,52
	45	0,351	188,1	169,29	84,47	2476,71
	60	0,368	197,37	177,63	88,64	2601,88
						8640,74

LAMPIRAN E

HASIL UJI JUMLAH IBUPROFEN TERLARUT DALAM TWEEN 80 DAN *AQUADEST*

IBUPROFEN TERLARUT DALAM TWEEN 80

W sampel (gram)	Abs.	C sampel (µg/ml)	Cs x FP (mg/ml)	Rata-rata (mg/ml) ± SD
10,4973	0,452	243,18	243,18	
11,0759	0,444	238,82	238,82	247,00 ± 10,62
11,5237	0,481	259,00	259,00	

IBUPROFEN TERLARUT DALAM *AQUADEST*

W sampel (gram)	Abs.	C sampel (µg/ml)	Cs x FP (µg/ml)	Rata-rata (mg/ml) ± SD
0,9881	0,072	35,93	0,18	
0,9285	0,063	31,03	0,16	0,17± 0,01
0,9747	0,067	33,21	0,17	

LAMPIRAN F

CONTOH PERHITUNGAN

Contoh perhitungan indeks kompresibilitas dan *Hausner ratio*:

Formula A :

Berat gelas = 111,29 g (W1)

Berat gelas + granul = 148,3 g (W2)

V1 = 100 ml

V2 = 84 ml

Bj nyata $= \frac{(W_2 - W_1)}{V_1} = \frac{(148{,}3-111{,}29)}{100} = 0{,}3701$

Bj mampat $= \frac{(W_2 - W_1)}{V_2} = \frac{(148{,}3-111{,}29)}{84} = 0{,}4460$

% kompresibilitas $= \left(1 - \frac{Bj.nyata}{Bj.\ Bj\ mampat}\right) x100\% = 16\%$

Formula A:

HR = $\frac{Bjmampat}{Bjnyata} = 1{,}19$

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	200	600	100	1,5	10	300

Absorbansi = 0,558 → y = 0,0018x + 0,0061

Konsentrasi sebenarnya = 300,99 ppm

Konsentrasi teoritis = 300,45 ppm

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

= (300,99/ 300,45) x 100%

= 100,18%

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

= $\frac{1,01}{99,83} x\ 100\%$

= 1,01 %

Contoh perhitungan % obat terlepas:

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

Formula A replikasi 1 pada t = 10 menit

% obat terlepas = $\frac{106,9}{\frac{100,30}{100} \times 200} \times 100\% = 53,31\%$

Contoh perhitungan AUC pada disolusi:

Rumus:

Formula A replikasi 1

Wtn-1 = 106,9

Wtn = 119,2

tn = 20 menit

tn-1 = 10 menit

AUC = $\frac{1006,9 + 119,2}{2} x(20 - 10)$

= 534,74

Luas □ = 60 x penetapan kadar x dosis

= 60 x 100,30% x 200 mg

= 12035,6

% ED Formula A replikasi 1= (∑ AUC / luas □) x 100%

= (7551,06/12035,6) x 100%

= 62,74 %

LAMPIRAN G

HASIL UJI STATISTIK KEKERASAN TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

Kekerasan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	7.2900	1.45523	.84018	3.6750	10.9050	5.61	8.16
B	3	5.1067	.25482	.14712	4.4737	5.7397	4.94	5.40
C	3	5.4767	.38527	.22244	4.5196	6.4337	5.10	5.87
D	3	5.2400	.36346	.20984	4.3371	6.1429	4.93	5.64
Total	12	5.7783	1.13928	.32888	5.0545	6.5022	4.93	8.16

Test of Homogeneity of Variances

Kekerasan

Levene Statistic	df1	df2	Sig.
7.405	3	8	.011

ANOVA

Kekerasan

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	9.351	3	3.117	5.062	.030
Within Groups	4.926	8	.616		
Total	14.278	11			

F hitung = 5,062> F tabel$_{0,05(3,8)}$ = 4,07, maka H_0 ditolak dan ada perbedaan bermakna antar formula.

Kekerasan
LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	2.18333*	.64072	.009	.7058	3.6608
	C	1.81333*	.64072	.022	.3358	3.2908
	D	2.05000*	.64072	.013	.5725	3.5275
B	A	-2.18333*	.64072	.009	-3.6608	-.7058
	C	-.37000	.64072	.580	-1.8475	1.1075
	D	-.13333	.64072	.840	-1.6108	1.3442
C	A	-1.81333*	.64072	.022	-3.2908	-.3358
	B	.37000	.64072	.580	-1.1075	1.8475
	D	.23667	.64072	.721	-1.2408	1.7142
D	A	-2.05000*	.64072	.013	-3.5275	-.5725
	B	.13333	.64072	.840	-1.3442	1.6108
	C	-.23667	.64072	.721	-1.7142	1.2408

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

LAMPIRAN H

HASIL UJI STATISTIK KERAPUHAN TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

Kerapuhan

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	.4400	.07000	.04041	.2661	.6139	.37	.51
B	3	.3367	.03786	.02186	.2426	.4307	.31	.38
C	3	.4600	.07810	.04509	.2660	.6540	.37	.51
D	3	.4333	.10693	.06173	.1677	.6990	.31	.50
Total	12	.4175	.08259	.02384	.3650	.4700	.31	.51

Test of Homogeneity of Variances

Kerapuhan

Levene Statistic	df1	df2	Sig.
1.593	3	8	.266

ANOVA

Kerapuhan

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.027	3	.009	1.525	.281
Within Groups	.048	8	.006		
Total	.075	11			

F hitung = 1,525< F tabel$_{0,05(3,8)}$ = 4,07, maka H_0 diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN I

HASIL UJI STATISTIK WAKTU HANCUR TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

WaktuHancur

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	1.4800	.25515	.14731	.8462	2.1138	1.29	1.77
B	3	.9233	.09504	.05487	.6872	1.1594	.83	1.02
C	3	1.2967	.02517	.01453	1.2342	1.3592	1.27	1.32
D	3	1.4167	.33292	.19221	.5897	2.2437	1.20	1.80
Total	12	1.2792	.29072	.08392	1.0945	1.4639	.83	1.80

Test of Homogeneity of Variances

WaktuHancur

Levene Statistic	df1	df2	Sig.
5.893	3	8	.020

ANOVA

WaktuHancur

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.558	3	.186	4.012	.052
Within Groups	.371	8	.046		
Total	.930	11			

F hitung = 4.012< F tabel$_{0,05(3,8)}$ = 4,07, maka H_0 diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN J

HASIL UJI STATISTIK KADAR TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

PK

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	100.2933	.82373	.47558	98.2471	102.3396	99.38	100.98
B	3	100.2100	.53675	.30989	98.8766	101.5434	99.65	100.72
C	3	100.1233	.60003	.34643	98.6328	101.6139	99.52	100.72
D	3	100.2000	.86435	.49903	98.0528	102.3472	99.29	101.01
Total	12	100.2067	.61726	.17819	99.8145	100.5989	99.29	101.01

Test of Homogeneity of Variances

PK

Levene Statistic	df1	df2	Sig.
.380	3	8	.770

ANOVA

PK

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.044	3	.015	.028	.993
Within Groups	4.148	8	.518		
Total	4.191	11			

F hitung = 0, 028< F tabel$_{0,05(3,8)}$ = 4,07, maka H_0 diterima dan tidak ada perbedaan bermakna antar formula.

LAMPIRAN K

HASIL UJI STATISTIK DISOLUSI BERDASARKAN %ED_{60}

TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

ED

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	62.7135	.31164	.17993	61.9393	63.4877	62.39	63.01
B	3	76.7738	.03679	.02124	76.6824	76.8652	76.73	76.80
C	3	74.5952	.12184	.07034	74.2925	74.8979	74.46	74.68
D	3	72.1754	.27580	.15923	71.4903	72.8605	71.86	72.38
Total	12	71.5645	5.60427	1.61781	68.0037	75.1253	62.39	76.80

Test of Homogeneity of Variances

ED

Levene Statistic	df1	df2	Sig.
2.493	3	8	.134

ANOVA

ED

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	345.107	3	115.036	2429.665	.000
Within Groups	.379	8	.047		
Total	345.486	11			

F hitung = 2429,66> F tabel$_{0,05(3,8)}$ = 4,07, maka H_0 ditolak dan ada perbedaan bermakna antar formula.

disolusi_ED

LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	-14.06033*	.17766	.000	-14.4700	-13.6506
	C	-11.88169*	.17766	.000	-12.2914	-11.4720
	D	-9.46189*	.17766	.000	-9.8716	-9.0522
B	A	14.06033*	.17766	.000	13.6506	14.4700
	C	2.17864*	.17766	.000	1.7689	2.5883
	D	4.59844*	.17766	.000	4.1887	5.0081
C	A	11.88169*	.17766	.000	11.4720	12.2914
	B	-2.17864*	.17766	.000	-2.5883	-1.7689
	D	2.41980*	.17766	.000	2.0101	2.8295
D	A	9.46189*	.17766	.000	9.0522	9.8716
	B	-4.59844*	.17766	.000	-5.0081	-4.1887
	C	-2.41980*	.17766	.000	-2.8295	-2.0101

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

LAMPIRAN L

HASIL UJI STATISTIK KONSTANTA LAJU DISOLUSI TABLET LIKUISOLID IBUPROFEN ANTAR FORMULA

Descriptives

LajuDisolusi

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
A	3	.0544	.00215	.00124	.0490	.0597	.05	.06
B	3	.0904	.00625	.00361	.0749	.1059	.08	.09
C	3	.0724	.00465	.00268	.0609	.0840	.07	.08
D	3	.0503	.00187	.00108	.0456	.0549	.05	.05
Total	12	.0669	.01702	.00491	.0560	.0777	.05	.09

Test of Homogeneity of Variances

LajuDisolusi

Levene Statistic	df1	df2	Sig.
2.449	3	8	.138

ANOVA

LajuDisolusi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.003	3	.001	59.019	.000
Within Groups	.000	8	.000		
Total	.003	11			

F hitung = 59,019> F tabel$_{0,05(3,8)}$ = 4,07, maka H_0 ditolak dan ada perbedaan bermakna antar formula.

disolusi_kdisolusi

LSD

(I) Formula	(J) Formula	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A	B	-.03603*	.00339	.000	-.0438	-.0282
	C	-.01805*	.00339	.001	-.0259	-.0102
	D	.00409	.00339	.262	-.0037	.0119
B	A	.03603*	.00339	.000	.0282	.0438
	C	.01798*	.00339	.001	.0102	.0258
	D	.04012*	.00339	.000	.0323	.0479
C	A	.01805*	.00339	.001	.0102	.0259
	B	-.01798*	.00339	.001	-.0258	-.0102
	D	.02214*	.00339	.000	.0143	.0299
D	A	-.00409	.00339	.262	-.0119	.0037
	B	-.04012*	.00339	.000	-.0479	-.0323
	C	-.02214*	.00339	.000	-.0299	-.0143

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

LAMPIRAN M

HASIL UJI KURVA BAKU

REPLIKASI I

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
75,45	0,129	5692,703	0,0166	9,7330
100,6	0,178	10120,36	0,0317	17,9068
201,2	0,359	40481,44	0,1289	72,2308
301,8	0,563	91083,24	0,3170	169,9134
402,4	0,728	161925,8	0,5300	292,9472
503	0,928	253009	0,8612	466,784

REPLIKASI II

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
75,38	0,144	5682,144	0,0207	10,8547
100,5	0,184	10100,25	0,0338	18,492
201	0,378	40401	0,1429	75,978
301,5	0,568	90902,25	0,3226	171,252
402	0,742	161604	0,5506	298,284
502,5	0,923	252506,3	0,8519	463,8075

REPLIKASI III

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
75,3	0,169	5670,09	0,0286	12,7257
100,4	0,211	10080,16	0,0445	21,1844
200,8	0,386	40320,64	0,1490	77,5088
301,2	0,571	90721,44	0,3260	171,9852
401,6	0,747	161282,6	0,5580	299,9952
502	0,91	252004	0,8281	456,82

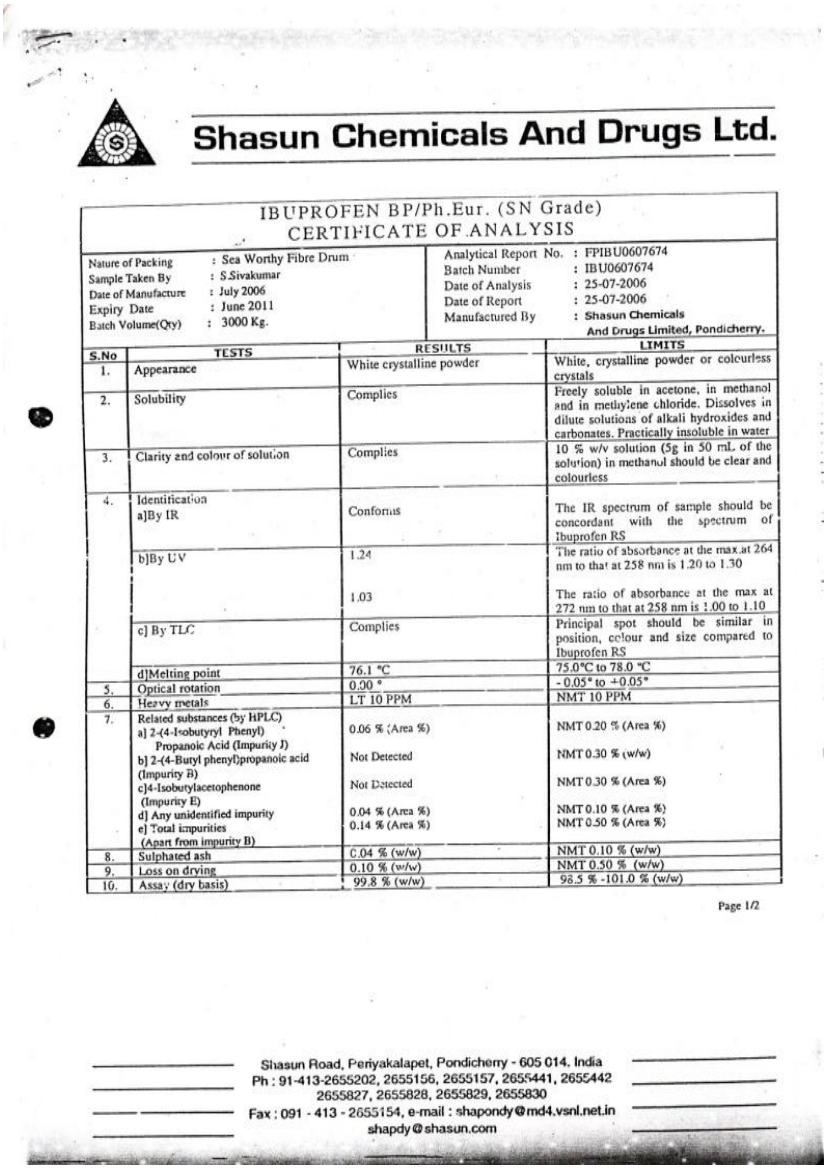
	ΣX^2	ΣXY	ΣY^2	N	Residual SS	RDF
Replikasi I	562312,5	1029,5153	1,8853	6	$4{,}45.10^{-4}$	3
Replikasi II	561195,9	1038,6682	1,9226	6	$2{,}13.\ 10^{-4}$	3
Replikasi III	560078,9	1040,2193	1,9342	6	$2{,}266.\ 10^{-3}$	3
Pooled regression					$2{,}91.\ 10^{-3}$	9
Common regression	1683587	3108,4028	5,7422		$3{,}13.10^{-3}$	11

F hitung < F tabel $_{0,05\ (3,9)}$ = 0,3287 < 4,26

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

LAMPIRAN N

SERTIFIKAT ANALISIS IBUPROFEN



Shasun Chemicals And Drugs Ltd.

IBUPROFEN BP/Ph.Eur. (SN Grade)
CERTIFICATE OF ANALYSIS

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.

S.No	TESTS	RESULTS	LIMITS
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 a]By IR	Conforms	The IR spectrum of sample should be concordant with the spectrum of Ibuprofen RS
	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-Isobutyryl Phenyl) Propanoic Acid (Impurity J) b] 2-(4-Butyl phenyl)propanoic acid (Impurity B) c]4-Isobutylacetophenone (Impurity E) d] Any unidentified impurity e] Total impurities (Apart from impurity B)	0.06 % (Area %) Not Detected Not Detected 0.04 % (Area %) 0.14 % (Area %)	NMT 0.20 % (Area %) NMT 0.30 % (w/w) NMT 0.30 % (Area %) NMT 0.10 % (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)

Page 1/2

Shasun Road, Periyakalapet, Pondicherry - 605 014, India
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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

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.

S.No	TESTS	RESULTS	LIMITS
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	Reviewed by	Approved by
Date : 25/07/2006	Date : 25/07/2006	Date : 25/7/2006
(E.Senthilkumar)	(S.Rajasudalaimuthu)	(N.Vinayagaperumal)
Senior Chemist	Senior Chemist	Dy.QC-Incharge

SCQC/F-024/F/06

STATE BANK OF TRAVANCORE Chennai Main

Shasun Road, Periyakalapet, Pondicherry - 605 014. India
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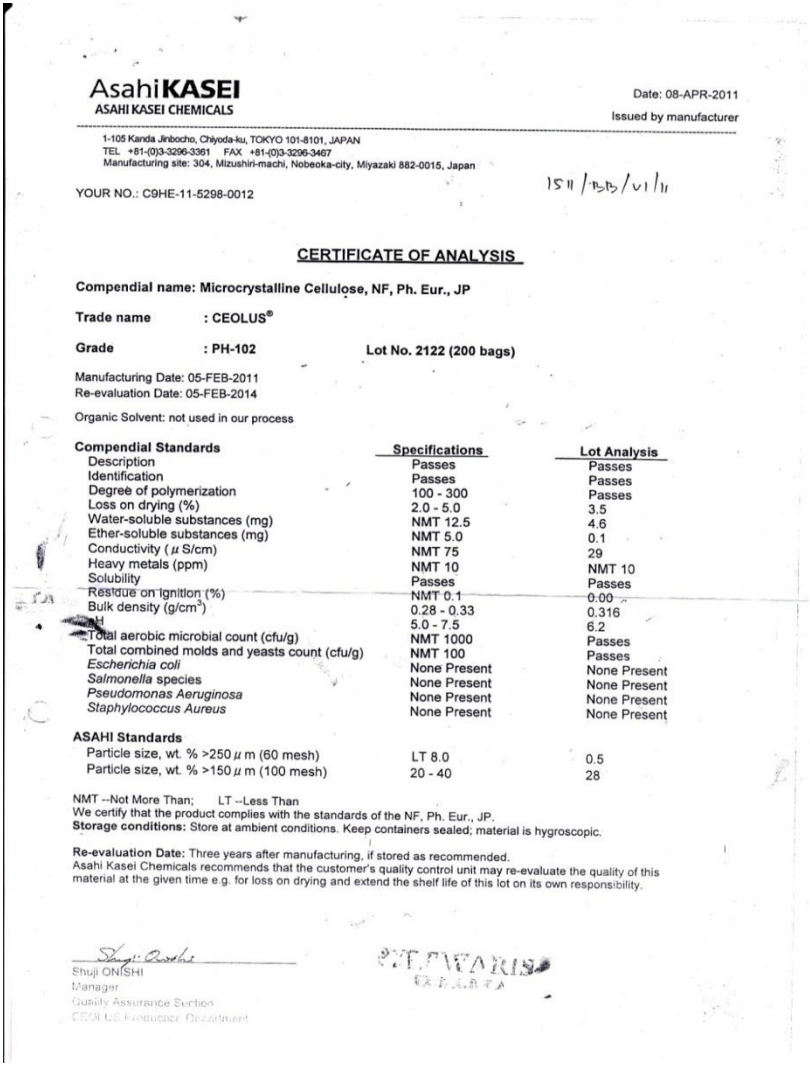
Fax : 091 - 413 - 2655154, e-mail : shapondy@md4.vsnl.net.in
shapdy@shasun.com

LAMPIRAN O

SERTIFIKAT ANALISIS AVICEL PH 102



AsahiKASEI
ASAHI KASEI CHEMICALS

Date: 08-APR-2011
Issued by manufacturer

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

YOUR NO.: C9HE-11-5298-0012

1511/ヨシ/01/11

CERTIFICATE OF ANALYSIS

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

Trade name : CEOLUS®

Grade : PH-102 **Lot No. 2122 (200 bags)**

Manufacturing Date: 05-FEB-2011
Re-evaluation Date: 05-FEB-2014

Organic Solvent: not used in our process

Compendial Standards	**Specifications**	**Lot Analysis**
Description	Passes	Passes
Identification	Passes	Passes
Degree of polymerization	100 - 300	Passes
Loss on drying (%)	2.0 - 5.0	3.5
Water-soluble substances (mg)	NMT 12.5	4.6
Ether-soluble substances (mg)	NMT 5.0	0.1
Conductivity (μ S/cm)	NMT 75	29
Heavy metals (ppm)	NMT 10	NMT 10
Solubility	Passes	Passes
Residue on ignition (%)	NMT 0.1	0.00
Bulk density (g/cm^3)	0.28 - 0.33	0.316
pH	5.0 - 7.5	6.2
Total aerobic microbial count (cfu/g)	NMT 1000	Passes
Total combined molds and yeasts count (cfu/g)	NMT 100	Passes
Escherichia coli	None Present	None Present
Salmonella species	None Present	None Present
Pseudomonas Aeruginosa	None Present	None Present
Staphylococcus Aureus	None Present	None Present
ASAHI Standards		
Particle size, wt. % >250 μ m (60 mesh)	LT 8.0	0.5
Particle size, wt. % >150 μ m (100 mesh)	20 - 40	28

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

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

Shuji ONISHI
Manager
Quality Assurance Section
CEOLUS Production Department

P.T. FMC INDONESIA

LAMPIRAN P

SERTIFIKAT ANALISIS MAGNESIUM STEARAT

PETER GREVEN

Partner der Industrie

QUALITÄTSMANAGEMENT

CERTIFICATE OF ANALYSIS

customer: PT BRATACO

contact person:

FAX:

your order-number: PTB0735/V1104 **our order-number:** 4011746

delivered on: 04.08.2004 **quantity:** 9000

brand: LIGA MAGNESIUM STEARATE MF-2-V VEGETABLE **charge-no.** C447176

manufacturing date: 2004-07-19 **expiry date:** 2006-07-18

product is in accordance with the USPZ7/NF22/BP2003/Ph.Eur 4rd ed./DAB10/JP 14th ed./FCC 5th ed.

parameter	unit	method	result
ntification A	oC	Ph.Eur	59
ation A	metal reaction	USP/NF	passes test
rification B	retention time GC	USP/NF	retentions match
ity as	ml 0,01N HCl	Ph.Eur	<0,6
alinity	ml 0,01 N NaOH	Ph.Eur	<0,6
ıy metals as Pb	ppm	JP	<20
ad	ppm	BAE 300-B	<1
admium	ppm	BAE 300-B	<1
ckel	ppm	BAE 300-B	<1
hloride	%	Ph.Eur	<0,1
ılfate	%	Ph.Eur	<0,5
id value of the fatty acid	mg KOH/g	Ph.Eur	204,8
ontent of stearic acid	%	USP/NF	65,1
ıl. cont. of stearic and palmetic acid	%	USP/NF	98,9
erobic microbial count	cfu/g	USP/NF	<10
lds & Yeasts	cfu/g	USP/NF	106
Escherichia coli	cfu/g	USP/NF	absent
nella Species	cfu/g	USP/NF	absent
ganic volatile impurities		USP/NF	meets USP/NF
s on drying	%	BAE 600	3,9
agnesium content	%	BAE 200 c	4,7
ee fatty acid	%	BAE 400	0,6
e residue at 200 mesh	%	BAE 605	0,2
ulk density tapped	g/ml	BAE 611a	0,32
ecific surface area BET	qm/g	USP/NF	10,0
ntamination		BAE 601	in accordance

Venlo, 27.08.04

data of the above mentioned delivery are based upon careful test according to the guidelines of our ity assurance system. They do not release the customer from entry control. Besides we do not guarantee ical properties for concrete applications

s certificate was issued by EDV and does not bear a signature

LAMPIRAN Q

SERTIFIKAT ANALISIS *SODIUM STARCH GLYCOLATE*

YUNG ZIP CHEMICAL IND. CO., LTD.
59, Yu Shih Road
Youth Industrial District
Tachia, Taiwan, 437
R. O. C.
TEL: 886-4-26818780, 26811344 FAX: 886-4-26812911

CERTIFICATE OF ANALYSIS

D S T

(Sodium Starch Glycolate)

Lot No.: SSG0010162 **Mfg. Date:** Jun. 20, 2010

Analysis Following: BP2010/EP 6.0 **Retest Date:** Jun. 19, 2013

ITEMS	SPECIFICATIONS	RESULTS
Appearance	A white or almost white, fine, free-flowing powder, very hygroscopic	A white free-flowing powder
Examined under microscope	Conformed to the test	Conformed
Solubility	Practically insoluble in methylene chloride. A translucent suspension in water	Conformed
Identification		
A. pH	Between 5.5 and 7.5	5.7
B. Suspension test	Suspension forms settles after standing.	Conformed
C. Iodine test	The solution becomes blue to violet.	Conformed
D. Sodium test	A dense white precipitate is formed.	Conformed
Appearance of solution S1		
Clear	The opalescence is not more pronounced than reference suspension I.	Conformed
Colorless	Not more intensely colored than reference solution B_9.	Conformed
Sodium chloride	Not more than 7.0 %	6.1 %
Sodium glycolate	Not more than 2.0 %	1.7 %
Iron	Not more than 20 ppm	< 20 ppm
Heavy metals	Not more than 20 ppm	< 20 ppm
Loss on drying	Not more than 10.0 %	2.9 %
Microbial contamination	Absence of *Salmonella* species and *Escherichia Coli*	Negative
Assay	2.8 % ~ 4.2 % of sodium	2.9 %

Conclusion : Passed

LAMPIRAN R

SERTIFIKAT ANALISIS *HYDROXY PROPYL METHYL CELLULOSE* K4M

货物运输条件鉴定书

Certification for Safe Transport of Chemical Goods NO. 2010010879

Page 1 / 2

样品名称 Name of Goods	中文 Chinese	羟丙甲纤维素；美多秀
	英文 English	METHOCEL(Hypromellose)
送检单位 Shipper		上海卡乐康包衣技术有限公司
生产单位 Manufacturer		DOW CHEMICAL
检查方法、程序 Insepection Methods and Procedures		联合国《关于危险货物运输的建议书》 UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"
样品外观与性状 Appearance & Odor		白色粉末，无臭 white powder, odorless

TRANSPORT INFORMATION 鉴定结果

1. 危险性识别(Hazards identification)

无。
None.

2. 空运按照IATA DGR办理的类项(Suggestion according to IATA DGR)

可按普通货物条件办理。
The substance is not subject to IATA DGR.

3. 包装要求(Packaging requirements)

可按普通货物条件办理。
The goods are packaged according to the packaging requirement of ordinary goods.

检查日期：2009年12月15日至 2009年12月15日 生效日期：2010年01月01日

备注 Comment	无。 None.

批准 Approver: 张小欧 审核 Checker: 董学胜 主检 Appraiser:

LAMPIRAN S

TABEL UJI F

Tabel F

Tabel VII Nilai gawat dari *F*

F yang diperoleh adalah besar/ sama atau *lebih besar daripada* nilai yang dimuatkan dalam tabel.
Baris pertama pada setiap pasangan baris adalah titik pada distribusi *F* untuk area 0.05; baris kedua untuk area 0.01.

Derajat kebebasan untuk pembilang (rataan kuadrat yang lebih besar)																								
Derajat kebebasan untuk penyebut (rataan kuadrat yang lebih kecil)	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 5981	241 6022	242 6056	243 6083	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 99.38	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
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 26.35	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	4.41 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	3.24 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 4.64	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 4.31
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	2.53 3.80	2.47 3.74	2.45 3.70	2.43 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 3.42	2.32 3.37	2.28 3.30	2.26 3.27	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

(bersambung)

Tabel VII (*lanjutan*)

Baris pertama pada setiap pasangan baris adalah titik pada distribusi F untuk area 0,05; baris kedua untuk area 0,01.

Derajat kebebasan untuk rataan kuadrat yang lebih kecil	Derajat kebebasan untuk rataan kuadrat yang lebih besar																					
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.45	2.42	2.37	2.33	2.28	2.24	2.20	2.16	2.13	2.09	2.07	2.04	2.02	2.01
	8.53	6.23	5.29	4.77	4.44	4.20	4.03	3.89	3.78	3.69	3.61	3.55	3.45	3.37	3.25	3.18	3.10	3.01	2.96	2.89	2.86	2.80	2.77	2.75
17	4.45	3.59	3.20	2.96	2.81	2.70	2.62	2.55	2.50	2.45	2.41	2.38	2.33	2.29	2.23	2.19	2.15	2.11	2.08	2.04	2.02	1.99	1.97	1.96
	8.40	6.11	5.18	4.67	4.34	4.10	3.93	3.79	3.68	3.59	3.52	3.45	3.35	3.27	3.16	3.08	3.00	2.92	2.86	2.79	2.76	2.70	2.67	2.65
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37	2.34	2.29	2.25	2.19	2.15	2.11	2.07	2.04	2.00	1.98	1.95	1.93	1.92
	8.28	6.01	5.09	4.58	4.25	4.01	3.85	3.71	3.60	3.51	3.44	3.37	3.27	3.19	3.07	3.00	2.91	2.83	2.78	2.71	2.68	2.62	2.59	2.57
19	4.38	3.52	3.13	2.90	2.74	2.63	2.55	2.48	2.43	2.38	2.34	2.31	2.26	2.21	2.15	2.11	2.07	2.02	2.00	1.96	1.94	1.91	1.90	1.88
	8.18	5.93	5.01	4.50	4.17	3.94	3.77	3.63	3.52	3.43	3.36	3.30	3.19	3.12	3.00	2.92	2.84	2.76	2.70	2.63	2.60	2.54	2.51	2.49
20	4.35	3.49	3.10	2.87	2.71	2.60	2.52	2.45	2.40	2.35	2.31	2.28	2.23	2.18	2.12	2.08	2.04	1.99	1.96	1.92	1.90	1.87	1.85	1.84
	8.10	5.85	4.94	4.43	4.10	3.87	3.71	3.56	3.45	3.37	3.30	3.23	3.13	3.05	2.94	2.86	2.77	2.69	2.63	2.56	2.53	2.47	2.44	2.42
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28	2.25	2.20	2.15	2.09	2.05	2.00	1.96	1.93	1.89	1.87	1.84	1.82	1.81
	8.02	5.78	4.87	4.37	4.04	3.81	3.65	3.51	3.40	3.31	3.24	3.17	3.07	2.99	2.88	2.80	2.72	2.63	2.58	2.51	2.47	2.42	2.38	2.36
22	4.30	3.44	3.05	2.82	2.66	2.55	2.47	2.40	2.35	2.30	2.26	2.23	2.18	2.13	2.07	2.03	1.98	1.93	1.91	1.87	1.84	1.81	1.80	1.78
	7.94	5.72	4.82	4.31	3.99	3.76	3.59	3.45	3.35	3.26	3.18	3.12	3.02	2.94	2.83	2.75	2.67	2.58	2.53	2.46	2.42	2.37	2.33	2.31
23	4.28	3.42	3.03	2.80	2.64	2.53	2.45	2.38	2.32	2.28	2.24	2.20	2.14	2.10	2.04	2.00	1.96	1.91	1.88	1.84	1.82	1.79	1.77	1.76
	7.88	5.66	4.76	4.26	3.94	3.71	3.54	3.41	3.30	3.21	3.14	3.07	2.97	2.89	2.78	2.70	2.62	2.53	2.48	2.41	2.37	2.32	2.28	2.26
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	2.86	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	2.22	2.29	2.23	2.19	2.17
26	4.22	3.37	2.98	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	3.32	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

(*bersambung*)

Dikutip dari: Schefler (1987)

LAMPIRAN T

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 U

TABEL UJI HSD (0,05)

d.k. \ 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: Schefler (1987).