

LAMPIRAN 1. Certificate Of Analysis (COA)

PT. Kao Indonesia Chemicals
Jl. Hutanpinang Raya Lot 11-10 Kawasan Industri PIRI, Kecamatan A1204, Jember Barat - Jember

Brenntag Specialties, Inc. **BRENNTAG**
SPECIALTIES

HS
Health & Beauty Solutions
2870 Fortis Ave
Hoffman Estates, IL 60192
Phone: 847-358-8731
Fax: 847-506-6199

CERTIFICATE OF ANALYSIS

Product: Volclay NFBC (Bentonite) **Cosmetic Grade**
MFG. DATE: 04/07/15 RETEST DATE: 04/07/18
Lot Number: J09715A

Test Description	Analysis	Specification	Method
pH (2% solids)	10.2	9.5 - 10.5	USP <791>
Viscosity (5% solids)	28.2	8-30 cps	NF 32 Bentonite
L.O.D.	6.0	5.0 - 8.0%	USP <731>
Fineness of Powder	99.99	99.75% minimum	NF 32 Bentonite
Swelling Power	45	24 ml minimum	NF 32 Bentonite
Gel Formation	1	2 ml maximum	NF 32 Bentonite
LD. Glycol Oriented	16.9	15.0 - 17.2 A	USP <941>
LD. Random Powder	1.495	1.492 - 1.502 A	USP <941>
Arsenic	Passes 2.9	5 ppm maximum	USP <211>
Lead	Passes 15	40 ppm maximum	USP <231>
Microbial Limits			
Aerobic Plate Count	<10 CFU/g	<10 CFU/g	USP <61/62>
Yeast & Mold	<10 CFU/g	<10 CFU/g	USP <61/62>
P. aeruginosa	Negative /10 g	Negative /10 g	USP <61/62>
S. aureus	Negative /10 g	Negative /10 g	USP <61/62>
E. coli	Negative /10 g	Negative /10 g	USP <61/62>
Gram Negatives	Negative /10 g	Negative /10 g	USP <61/62>
Salmonella	Negative /10 g	Negative /10 g	USP <61/62>

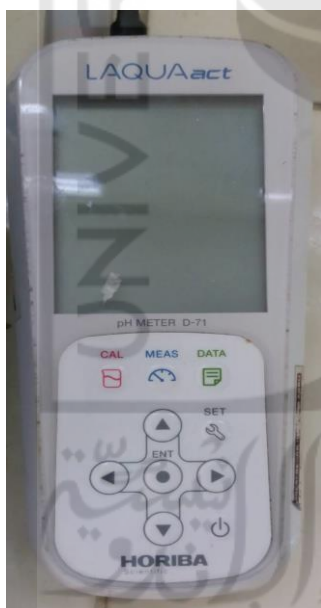
We hereby certify that the results shown above represents this shipment.
Testing conducted by: Jeff Helmer
Shipment approved by: Janelle Austin

Any correspondences regarding this particular lot, please call Melissa Duhon 337-354-1042
MFG SITE: Colon East Plant: 664 HWY 212, Belle Fourche, SD 57717
Reference numbers:
Purchase Order Number: 147616
Order Number: 1251125

F-200 REVISION A

All information provided is believed to be accurate and complete. The data provided is representative of the product quality of analysis for the lot number indicated. This certificate of analysis may not include all of the constituents of the product. This information should make their own determination regarding its suitability for their particular application. This certificate of analysis shall not in any way limit or preclude the operation and effect of the applicable terms and conditions of sale.

Technical Services Department | 1000 Coolidge Street | South Plainfield, NJ 07080 | 800.732.0562 | 800.254.9856 (Fax)

LAMPIRAN 2. Alat Penelitian**Timbangan Analitik****Viskometer****pH meter****Moisture Balance**

LAMPIRAN 3. Viskositas 13 Sediaan Masker *Peel-Off* clay bentonit

RPM	Viskositas Sediaan												
	1	2	3	4	5	6	7	8	9	10	11	12	13
10	29034	58428	26994	51949	15597	59807	18356	12477	50929	55435	34567	53899	24595
20	22465	-	23065	-	9178	-	15237	9238	29304	-	-	-	21445
50	-	-	-	-	6911	-	11446	11614	-	-	-	-	-
100	-	-	-	-	-	-	-	-	-	-	-	-	-



LAMPIRAN 4. Data Respon Viskositas 13 Formula

Formula	1	29029	X = 29034 cp
		29033	
		29040	
	2	58419	X = 58428 cp
		58427	
		58438	
	3	26991	X = 26994 cp
		26996	
		26995	
	4	51944	X = 51949 cp
		51953	
		51950	
	5	15587	X = 15597 cp
15594			
15610			
6	59808	X = 59807 cp	
	59803		
	59810		
7	18344	X = 18356 cp	
	18366		
	18358		
8	12473	X = 12477 cp	
	12478		
	12480		
9	50925		

		50931	X = 50929 cp
		50931	
10		55432	X = 55435 cp
		55436	
		55437	
11		34564	X = 34567 cp
		34569	
		34568	
12		53905	X = 53899 cp
		53897	
		53895	
13		24590	X = 24595 cp
		24597	
		24598	

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LAMPIRAN 5. Data Respon Daya Sebar 13 Formula

Formula	1	6,5	6,3 cm ²
		6,2	
		6,3	
	2	5,2	5,5 cm ²
		5,7	
		5,7	
	3	6,5	6,6 cm ²
		6,8	
		6,6	
	4	5,1	5,1 cm ²
		5,0	
		5,3	
	5	6,0	6,3 cm ²
6,4			
6,4			
6	5,0	5,1 cm ²	
	5,3		
	5,1		
7	5,9	5,7 cm ²	
	5,6		
	5,5		
8	6,4	6,4 cm ²	
	6,5		
	6,3		
9	5,6	5,6 cm ²	
	5,4		
	5,7		
10	6,1	6,0 cm ²	
	5,9		
	6,0		
11	6,0	6,0 cm ²	
	5,9		
	6,1		
12	6,2	6,1 cm ²	
	6,0		
	6,1		
13	5,6	5,7 cm ²	
	5,6		
	5,9		

LAMPIRAN 6. Data Respon Waktu Mengering 13 Formula

Formula	1	30	31 menit
		33	
		31	
	2	30	30 menit
		29	
		30	
	3	31	31 menit
		32	
		31	
	4	49	49 menit
		47	
		50	
	5	37	37 menit
37			
38			
6	46	48 menit	
	48		
	49		
7	47	49 menit	
	49		
	50		
8	52	50 menit	
	50		
	49		
9	56	54 menit	
	53		
	54		
10	51	51 menit	
	51		
	50		
11	48	47 menit	
	45		
	48		
12	55	55 menit	
	55		
	54		
13	49	50 menit	
	50		
	50		

LAMPIRAN 7. Data Verifikasi Formula Optimal Replikasi 1, 2, dan 3

Formula Optimal		Replikasi 1			Replikasi 2			Replikasi 3		
		I	II	III	I	II	III	I	II	III
% HPMC		1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502
% Amilopektin		2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998
Viskositas (cp)	Prediksi	14999	14999	14999	14999	14999	14999	14999	14999	14999
	Observasi	14577	14997	15777	14337	14817	15957	11698	11757	11817
	% Bias	0,03	0,02	0,05	0,04	0,01	0,06	0,22	0,22	0,21
Daya Sebar (cm ²)	Prediksi	6,3	6,3	6,3	6,3	6,3	6,3	6,3	6,3	6,3
	Observasi	6,1	6,4	6,5	6,2	6,3	6,3	6,4	6,5	6,6
	% Bias	0,03	0,02	0,04	0,01	0,01	0,01	0,02	0,04	0,05
Waktu Mengering (menit)	Prediksi	44,8	44,8	44,8	44,8	44,8	44,8	44,8	44,8	44,8
	Observasi	49	47	45	49	47	46	49	47	46
	% Bias	0,08	0,06	0,01	0,08	0,04	0,02	0,08	0,04	0,02

Rumus:

$$\% \text{ Bias} = \frac{\text{Observasi} - \text{Prediksi}}{\text{Prediksi}} \times 100\%$$

LAMPIRAN 8. Data Hasil Karakterisasi Formula Optimal Replikasi 1, 2, dan 3

Formula Optimal		Replikasi 1			Replikasi 2			Replikasi 3		
		I	II	III	I	II	III	I	II	III
Viskositas (cp)	Observasi	14577	14997	15777	14337	14817	15957	11698	11757	11817
	Rata-rata	15117			15037			11757		
	X ± SD	15117 ± 608,93			15037 ± 832,11			11757 ± 59,50		
Daya Sebar (cm ²)	Observasi	6,1	6,4	6,5	6,2	6,3	6,3	6,4	6,5	6,6
	Rata-rata	6,3			6,3			6,5		
	X ± SD	6,3 ± 0,21			6,3 ± 0,06			6,5 ± 0,10		
Waktu Mengering (menit)	Observasi	49	47	45	49	47	46	49	47	46
	Rata-rata	47			47			47		
	X ± SD	47 ± 1,59			47 ± 1,42			47 ± 1,43		
pH	Observasi	5,6	5,6	5,6	5,4	5,4	5,5	5,6	5,6	5,6
	Rata-rata	5,6			5,4			5,6		
	X ± SD	5,6 ± 0,01			5,4 ± 0,02			5,6 ± 0,01		

Rumus:

$$\text{Rata-rata} = \frac{\text{I} + \text{II} + \text{III}}{3}$$

$$\text{SD} = \sqrt{\frac{\sum (X - X_i)^2}{n-1}}$$

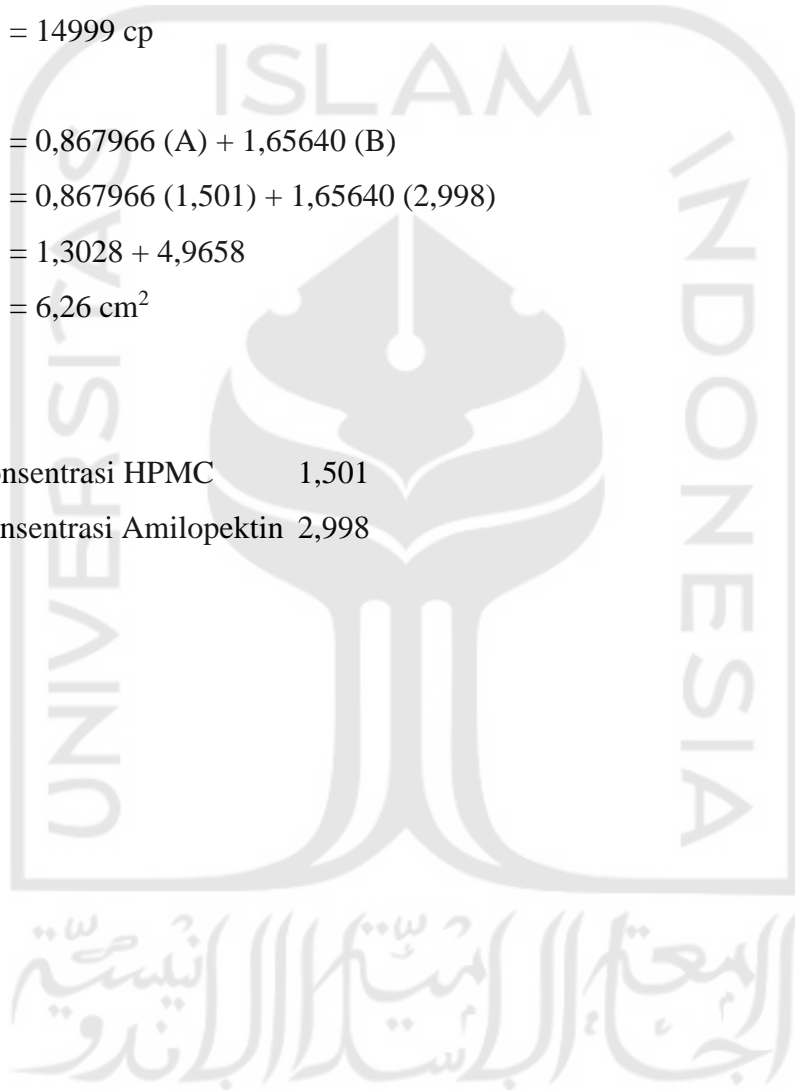
LAMPIRAN 9. Hasil Penjumlahan dari Persamaan Komponen

$$\begin{aligned}
 (Y_1) &= 1,61013 \text{ E}+07 (A) + 6,00795 \text{ E}+06 (B) + 9,82064 \text{ E}+06 (AB) - 1,00806 \\
 &\text{E}+06 (AB) (A-B) - 4,71296 \text{ E}+05 (AB) (A-B)^2 \\
 &= (1,61013 \cdot 10^{-10} +07 (1,501)) + (6,00795 \cdot 10^{-10} +06 (2,998)) + (9,82064 \\
 &\cdot 10^{-10} +06 (1,501*2,998)) - (1,00806 \cdot 10^{-10} +06 (1,501*2,998) (1,501- \\
 &2,998)) - (4,71296 \cdot 10^{-10} +05 (1,501*2,998) (1,501-2,998)^2) \\
 &= 14999 \text{ cp}
 \end{aligned}$$

$$\begin{aligned}
 (Y_2) &= 0,867966 (A) + 1,65640 (B) \\
 &= 0,867966 (1,501) + 1,65640 (2,998) \\
 &= 1,3028 + 4,9658 \\
 &= 6,26 \text{ cm}^2
 \end{aligned}$$

A= Konsentrasi HPMC 1,501

B= Konsentrasi Amilopektin 2,998



LAMPIRAN 10. Optimasi 13 formula

LAMPIRAN 11. Formula Optimal Masker *Peel-Off Clay Bentonit*