LAMPIRAN A

HASIL UJI MUTU FISIK GRANUL

Mutu fisik yang diuji	*Batch*	Di Uji	Formula Tablet Metformin HCl				Persyaratan
			FA	FB	FC	FD	
Kadar air (persen)	I	1	3.25	3.5	3.44	4.22	3-5 (Voigt, 1995)
	II	2	3.66	3.48	3.68	3.66	
	III	3	3.25	3.5	4.03	3.5	
	$\overline{X}$		3.38	3.49	3.71	3.79	
	SD		0.24	0.01	0.29	0.38	
Waktu alir (detik)	I	1	8,07	8,25	8,30	8,78	Tidak lebih dari 10 detik (Banker & Anderson, 1986)
		2	8,09	8,34	8,75	8,79	
		3	8,03	8,45	8,53	8,73	
	II	1	8,00	8,44	8,70	8,87	
		2	7,81	8,40	8,63	8,66	
		3	8,10	8,35	8,43	8,87	
	III	1	8,07	8,43	8,73	8,86	
		2	8,16	8,39	8,40	8,79	
		3	8,02	8,30	8,51	8,74	
	$\overline{X}$		8,04	8,38	8,57	8,80	
	SD		0,09	0,06	0,14	0,078	
Sudut diam (derajat)	I	1	29,25	34,58	38,72	35,57	25-40 (Banker & Anderson, 1986)
		2	28,95	34,32	38,74	34,91	
		3	29,15	34,43	38,71	35,10	
	II	1	29,07	34,62	38,69	35,51	
		2	29,30	34,43	38,72	34,83	
		3	29,03	34,51	38,63	34,99	
	III	1	29,10	34,60	38,79	35,49	
		2	29,15	34,52	38,65	34,75	
		3	29,11	34,30	38,70	34,89	
	$\overline{X}$		29,12	34,48	38,71	35,12	
	SD		0,11	0,12	0,05	0,32	
Indeks kompresi bilitas (persen)	I	1	13,00	13,50	12,50	12,50	5-15 = baik (Siregar, 1992)
		2	12,50	13,00	13,00	13,00	
		3	13,00	12,50	13,00	13,00	
	II	1	13,50	12,50	12,50	13,00	
		2	13,00	12,50	12,50	12,50	
		3	12,50	13,50	13,00	12,50	
	III	1	12,50	13,00	13,00	13,00	
		2	13,00	13,00	13,00	13,00	
		3	13,50	13,50	12,50	13,00	
	$\overline{X}$		12,94	13,00	12,78	12,83	
	SD		0,39	0,43	0,26	0,25	

LAMPIRAN B

HASIL UJI KEKERASAN TABLET METFORMIN HIDROKLORIDA

Batch I

No	Kekerasan Tablet Metformin hidroklorida (kp)			
	Formula A	**Formula B**	**Formula C**	**Formula D**
1	14.2	14.9	14.9	15.1
2	14.5	14.8	14.9	15
3	14.5	14.9	14.8	15
4	14.2	14.6	15	14.7
5	14.6	14.6	14.6	14.8
6	13.9	14.7	14.8	15
7	14.2	14.7	15	14.9
8	14.5	14.8	14.9	14.8
9	13.8	14.6	14.6	14.9
10	14.5	14.5	15	15
$\overline{X}$ ±SD	14.29 ± 0.28	14,71± 0.14	14.85 ± 0.15	14.92 ± 0.12

Batch II

No	Kekerasan Tablet Metformin hidroklorida (kp)			
	Formula A	**Formula B**	**Formula C**	**Formula D**
1	13.9	14.6	14.6	15
2	14.2	14.6	14.8	15
3	14	14.5	14.8	14.7
4	13.7	14.8	14.9	14.7
5	14.4	14.5	14.6	14.8
6	13.9	14.6	15	14.8
7	14.2	14.8	14.9	15
8	14.1	14.6	15	15
9	13.8	14.5	15	14.7
10	14.3	14.8	14.9	14.9
$\overline{X}$ ± SD	14.05±0.23	14.63±0.13	14.85±0.15	14,92±0,11

Batch III

No	Kekerasan Tablet Metformin hidroklorida (kp)			
	Formula A	**Formula B**	**Formula C**	**Formula D**
1	13.9	14.8	14.8	15
2	14	14.5	15	15
3	14.4	14.8	14.9	14.8
4	14.5	14.6	14.8	15
5	14.2	14.6	14.8	14.7
6	14	14.5	15	15
7	13.9	14.6	15	15
8	14.5	14.6	14.6	14.8
9	14	14.5	14.8	14.9
10	13.8	14.8	15	15
$\overline{X}$ ± SD	14.12±0.26	14.63±0.13	14.87±0.13	14.92±0.11

LAMPIRAN C

HASIL UJI KERAPUHAN TABLET METFORMIN HIDROKLORIDA

Batch I

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\overline{X}$ ±SD
A	1	15,690	15,669	0,13	0,13
	2	16,001	15,970	0,19	0,19
	3	16,032	16,010	0,18	0,18
B	1	15,950	15,922	0,18	0,18
	2	15,861	15,840	0,13	0,13
	3	15,677	15,645	0,18	0,18
C	1	15,691	15,670	0,13	0,13
	2	15,680	15,650	0,12	0,12
	3	16,033	16,014	0,18	0,18
D	1	15,690	15,672	0,13	0,13
	2	15,682	15,664	0,13	0,13
	3	15,680	15,650	0,12	0,12

Batch II

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\overline{X}$ ± SD
A	1	15,690	15,669	0,13	0,13
	2	16,001	15,970	0,19	0,19
	3	16,032	16,010	0,18	0,18
B	1	15,950	15,922	0,18	0,18
	2	15,861	15,840	0,13	0,13
	3	15,677	15,645	0,18	0,18
C	1	15,691	15,670	0,13	0,13
	2	15,680	15,650	0,12	0,12
	3	16,033	16,014	0,18	0,18
D	1	15,690	15,672	0,13	0,13
	2	15,682	15,664	0,13	0,13
	3	15,680	15,650	0,12	0,12

Batch III

Formula	Replikasi	Berat awal (gram)	Berat akhir (gram)	Kerapuhan (%)	$\overline{X}$ ± SD
A	1	15,690	15,669	0,13	0,13
	2	16,001	15,970	0,19	0,19
	3	16,032	16,010	0,18	0,18
B	1	15,950	15,922	0,18	0,18
	2	15,861	15,840	0,13	0,13
	3	15,677	15,645	0,18	0,18
C	1	15,691	15,670	0,13	0,13
	2	15,680	15,650	0,12	0,12
	3	16,033	16,014	0,18	0,18
D	1	15,690	15,672	0,13	0,13
	2	15,682	15,664	0,13	0,13
	3	15,680	15,650	0,12	0,12

LAMPIRAN D

HASIL PENETAPAN KADAR TABLET LEPAS LAMBAT METFORMIN HIDROKLORIDA

Batch I

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\overline{X}$ ±SD	SD rel (%)
A	1	0.470	4.1384	4.0050	103.33	102.14	0.01258
	2	0.466	4.1036	4.0100	102.33		
	3	0.460	4.0513	4.0200	100.78	1.28	
B	1	0.451	3.9730	4.0050	99.20	98.6	0.00750
	2	0.445	3.9208	4.0100	97.78		
	3	0.451	3.9730	4.0200	98.83	0.74	4
C	1	0.477	4.1993	4.0300	101.20	101.11	0.00954
	2	0.473	4.1645	4.0200	100.59		
	3	0.482	4.2428	4.0200	101.54	0.99	6
D	1	0.446	3.9295	4.0050	98.11	99.98	0.01616
	2	0.460	4.0513	4.0100	101.03		
	3	0.460	4.0513	4.0200	100.78	1.61	3

Batch II

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\overline{X}$ ± SD	SD rel (%)
A	1	0.459	4.0426	4.0050	100.94	101.87	0.01687
	2	0.473	4.1645	4.0100	103.85		
	3	0.459	4.0426	4.0100	100.81	1.72	6
B	1	0.460	4.0513	4.0250	100.65	99.23	0.01451
	2	0.445	3.9208	4.0100	97.78		
	3	0.453	3.9904	4.0200	99.26	1.44	
C	1	0.475	4.1819	4.0050	101.42	101.22	0.00555

	2	0.477	4.1993	4.0100	100.72		7
	3	0.482	4.2428	4.0200	101.54	0.58	
D	1	0.475	4.1819	4.0050	104.42	103.45	
	2	0.471	4.1471	4.0100	103.42		0.00921
	3	0.468	4.1210	4.0200	102.51	0.95	1

Batch III

Formula	Replikasi	Absorbansi	Csampel (µg/ml)	Cteoritis (µg/ml)	Kadar (%)	$\overline{X}$ ± SD	SD rel (%)
A	1	0.448	3.9469	4.0050	98.55	100.1	
	2	0.457	4.0252	4.0100	100.38		0.014315
	3	0.461	4.0601	4.0050	101.37	1.43	
B	1	0.453	3.9904	4.0150	99.39	99.43	
	2	0.458	4.0339	4.0100	100.60		0.011536
	3	0.448	3.9469	4.0150	98.30	1.15	
C	1	0.482	4.2428	4.0200	101.54	101.17	
	2	0.477	4.1993	4.0300	100.20		0.013324
	3	0.468	4.1210	4.0100	101.77	1.39	
D	1	0.452	3.9817	4.0050	99.42	100.28	
	2	0.462	4.0688	4.0100	101.47		0.010596
	3	0.455	4.0078	4.0100	99.95	1.06	

LAMPIRAN E

CONTOH PERHITUNGAN

Contoh perhitungan sudut diam:

Formula A:

W persegi panjang = 2,36 gram

W lingkaran = 0,88 gram

Luas persegi panjang = 15,1 x 20,5

= 309,55 cm^2

Luas lingkaran $= \frac{0,88}{2,36} \times 309,55$ = 115,71 cm^2

A $= \pi.r^2$

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

$= \frac{115,71}{3,14} = 36,85$

r = 6,07 cm

tg $\alpha = \frac{t}{r} = \frac{3,4}{6,07} = 0,5600$

α = 29,25°

α

Contoh perhitungan indeks kompresibilitas:

Formula A :

Berat gelas = 134,92 g (W_1)

Berat gelas + granul = 200,24 g (W_2)

V_1 = 100 ml

V_2 = 87 ml

Bj nyata $= \frac{(W_2 - W_1)}{V_1} = \frac{(200,24 - 134,92)}{100} = 0,6532$

Bj mampat $= \frac{(W_2 - W_1)}{V_2} = \frac{(200,24 - 134,92)}{87} = 0,7870$

% kompresibilitas $= \left(1 - \frac{\text{Bj.nyata}}{\text{Bj.mampat}}\right) x\,100\% = 13{,}0\%$

Contoh perhitungan akurasi & presisi:

%	Bahan aktif (mg)	Matriks (mg)	+Dapar fosfat pH 6,8 ad	Pipet (ml)	+Dapar fosfat pH 6,8 ad	Konsentrasi (ppm)
100	500	300	100	0,008	10	4

Absorbansi = 0,458→ y = 0,1149x – 0,0055
Konsentrasi sebenarnya = 4,03 ppm
Konsentrasi teoritis = 4,02 ppm

% perolehan kembali = (konsentrasi sebenarnya / konsentrasi teoritis)x100% = (4,03 / 4,02) x 100%
= 100,24 %

Untuk menghitung % KV = $\frac{SD}{\overline{X}} x100\%$
=0,39/100,70x 100%
= 0,39 %

Contoh perhitungan % obat terlepas:

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

Formula A replikasi 1 pada t = 30 menit

$$\% \text{ obat terlepas} = \frac{96{,}140}{\frac{100{,}24}{100} \times 500} \times 100\% = 19{,}18\%$$

Contoh perhitungan AUC pada disolusi:

Rumus: $\frac{Wt_n + W\,t_{n-1}}{2} \times t_n - t_{n-1}$

Formula A *batch* 1
Wt_{n-1} = 155,5523
Wt_n = 179,9318
t_n = 90 menit

t_{n-1} = 60 menit

$$AUC = \frac{179,9318 + 155,5523}{2} x(90 - 60)$$

= 5032.2615

Luas □ = 360 x penetapan kadar x dosis
= 360 x 100,24% x 500 mg
= 180432

% ED Formula A *batch* 1= (∑ AUC / luas □) x 100%
= (92332,3577/180432) x 100%
= 51,17 %

Perhitungan persamaan orde satu:

Rumus: ln ($\overline{X}$ -C_t) = ln C_0 - k . t

Dari persamaan regresi ln ($\overline{X}$-C_t) *versus* t (waktu), maka didapatkan suatu persamaan regresi dan nilai r, *slope* serta *intersept*. Nilai k_{diss} adalah –*slope*.

$\overline{X}$ adalah rata-rata penetapan kadar.

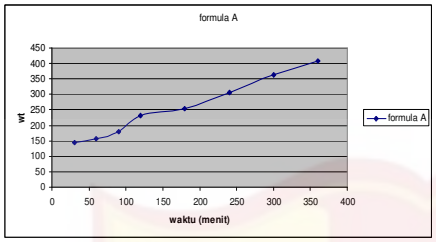
Perhitungan persamaan orde nol:

Rumus: Ct = Co + k.t
Dari persamaan regresi Wt *versus* t (waktu)

LAMPIRAN F

PERSAMAAN FORMULA A

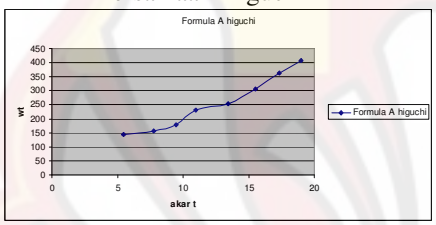
Persamaan Orde Nol



r = 0,9956

r tabel = 0,404

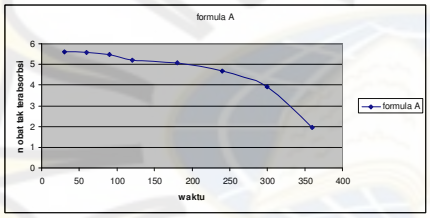
Persamaan Higuchi



r = 0.983648

r tabel = 0,404

Persamaan Orde Satu



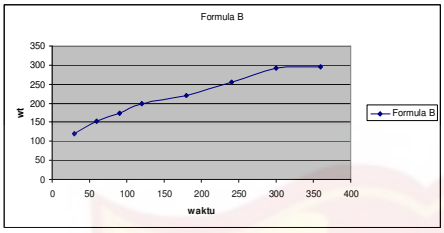
r = 0,90376

r tabel = 0,404

LAMPIRAN G

PERSAMAAN FORMULA B

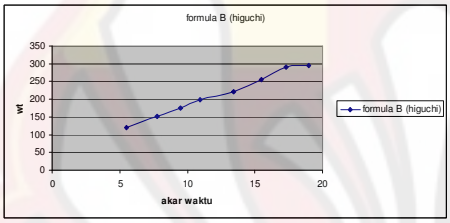
Persamaan Orde Nol



r = 0,9957

r tabel = 0,404

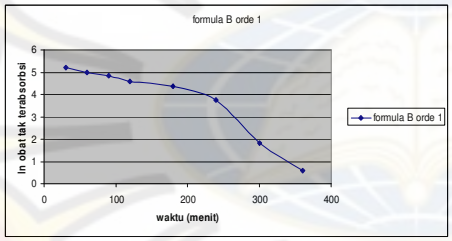
Persamaan Higuchi



r = 0,9830

r tabel = 0,404

Persamaan Orde Satu



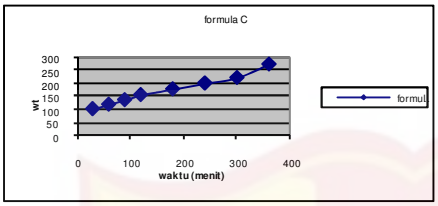
r = 0,94424

r tabel = 0,404

LAMPIRAN H

PERSAMAAN FORMULA C

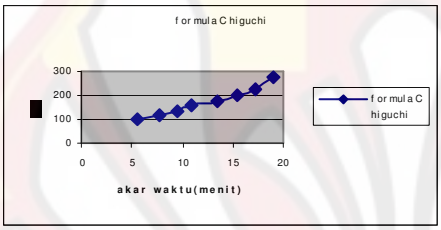
Persamaan Orde Nol



r = 0,9918

r tabel = 0,404

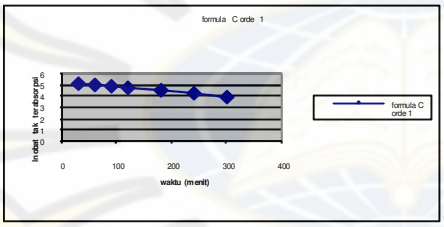
Persamaan Higuchi



r = 0,9817

r tabel = 0,404

Persamaan Orde Satu



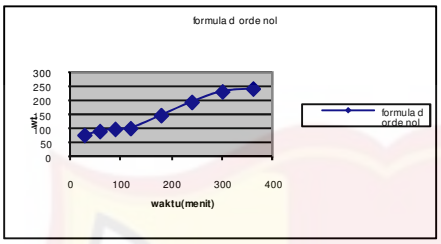
r = 0,9907

r tabel = 0,404

LAMPIRAN I

PERSAMAAN FORMULA D

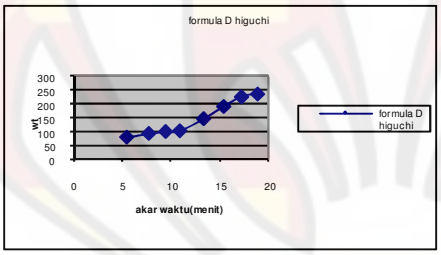
Persamaan Orde Nol



r = 0,9873

r tabel = 0,404

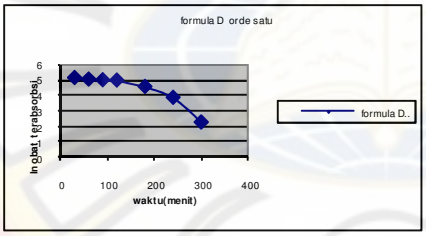
Persamaan Higuchi



r = 0,9685

r tabel = 0,404

Persamaan Orde Satu



r = 0,9125

r tabel = 0,404

LAMPIRAN J

SERTIFIKAT ANALISIS ETIL SELULOSA

ORIGINAL

HERCULES

Certificate of Analysis

Date: 09/20/2006
Order Number: 1812774
Shipped from: HOPEWELL PLANT
Quantity: 1400 LBS
Customer Order: 1510
Delivery: 81715704
Date Shipped: 09/20/2006
Customer Number: 1000006073

AQUALON« N22 PHARM ethylcellulose 112134
Internal Material Description: EC-N22 PHARM 40 LB PRNT BAG
Delivery Line Quantity: 1400 LBS

Characteristics	Specification Min	Specification Max	Lot/Batch 42577		
Assay, % Ethoxyl	48.0	49.5	49.0		
Visc. NF Method, cps, 25 C	18	24	20		
R.O.I., % as Na2SO4	0.0	0.5	0.4		
Chlorides as NaCl, %	0.00	0.10	0.00		
Loss on Drying, as Packaged, %	0.0	3.0	1.3		
Heavy Metals, ppm	0	10	6		
Lead, ppm	0	3	1		
Acidity/Alkalinity, 1 = P 0 = F			1		
Acetaldehyde, < 100 ppm 1 = Y 0 = N 1			1		
Date of manufacture			08/16/2006		
Package Quantity:			35		

Data shown above are from actual lot(s) analyses.

NOTE: The viscosity unit of cps.is equivalent to mPa.s.
Certified based on knowledge of the manufacturing process where there is no potential for the solvents listed in the USP/NF to be present and upon controlled handling & storages:
Organic Volatile Impurities: meets USP/NF requirements
The quality of the above lot(s) conforms to the NF,Ph,Eur., and JP current editions.
OTHER IMPURITIES / RESIDUAL SOLVENTS (ICH Q3C): Solvent by-products of the EC reaction include ethyl ether (diethyl ether) & ethyl

Aqualon Division / Site of Mfg.
1111 Hercules Road
Hopewell, VA 23860-0271
Customer Service: 1-(877)546-2782
20SEP2006 16:04:59

The Quality Systems of this facility have been registered by LQRA to the ISO9001 Standards.

Reviewed By:

Q. C. Coordinator for L. D. Winston,
Q. C. Laboratory Supervisor

LAMPIRAN K

SERTIFIKAT ANALISIS POLIVINIL PIROLIDON K-30

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

CERTIFICATE OF ANALYSIS

Product	PVP K-30 USP/BP		
I	0051213	Quantity	2025KGS

Char	A white, fine powder	Complies
Ident	Positive	Positive
Wate	5% max	2.8%
Residue on ignition	0.1% max	0.02%
K-Value	27-32	30.7
Heavy metals(Lead)	10ppm max	Complies
Nitrogen	11.5%-12.8%	12.2%
Vinylpyrrolidone	0.2% max	0.032%
Aldehydes	0.05% max	Complies
Ph Value	3.0-7.0	3.62
Hydrazine	1ppm max	Complies
Peroxides	400ppm max	Complies
Microbial Limits(By annual verification test)	Salmonalla	Negative
	Coli	Negative
	Coliforms <1CFU/gm	Conform
	Standard Plate Count<10,000CFU/gm	Conform
	Mold & Yeast <1,000 CFU/gm	Conform

Conclusion: IT CONFORMS USP/BP

Analyst: Wang liu ling Checker: li ling Head of Q.C.Dept: Wang xiao fang

LAMPIRAN L

SERTIFIKAT ANALISIS TALKUM

SUN PLAN DEVELOPMENT LTD.

CERTIFICATE OF ANALYSIS

INVOICE NO. 1514

TO: PT BRATACO JL. KELENTENG NO. 8
BANDUNG QQ PT BRATACO JL. MANGGA
BESAR V/5 JAKARTA, INDONESIA
NPWP.01.130.689.1-032.001

RE: 48 MT TALC POWDER HAICHEN SHIPPED PER V. SL. "HUANDAO" V.3192 FROM BAYUQUAN,
CHINA SEAPORT TO TG.PRIOK PORT, JAKARTA, INDONESIA ON/ABOUT 18 OCT 2003
DRAWN UNDER IRREVOCABLE DC NO.02/03U/0645 DD 19SEPT03 OF BANK NISP PT (SWIFT
ADDRESS : NISPIDJA)

COMMODITY : TALC POWDER HAICHEN
QUANTITY : 48 MT

SiO2 :	60.1%
MgO :	30.8%
WHITENESS :	92.8%
CaO :	0.4%
Fe2O3 :	0.26%
Al2O3 :	0.3%
LOI :	6.0%
FINENESS :	98.5% PASSING THROUGH 325 MESH
PH :	7-9
MOISTURE :	0.38%
ASBESTOS :	FREE

BRATACO
IMPORTER
MANUFACTURER
DISTRIBUTOR

LAMPIRAN M

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: 2006-07-19

product is in accordance with the USP27/NF22/BP2003/Ph.Eur 4rd ed./DAB10/JP 14th. ed./FCC 5th. ed.

parameter	unit	method	result
ntification A	oC	Ph.Eur	59
r[illegible]ation A	metal reaction	USP/NF	passes test
tification B	retention time GC	USP/NF	retentions match
idity or	ml 0,01N HCl	Ph.Eur	<0,5
alinity	ml 0.01 N NaOH	Ph.Eur	<0,5
avy metals as Pb	ppm	JP	<20
ad	ppm	BAE 300-B	<1
dmium	ppm	BAE 300-B	<1
ckel	ppm	BAE 300-B	<1
hloride	%	Ph.Eur	<0,1
ulfate	%	Ph.Eur	<0,5
cid value of the fatty acid	mg KOH/g	Ph.Eur	204,8
elative content of stearic acid	%	USP/NF	65,1
el. cont. of stearic and palmetic acid	%	USP/NF	98,9
erobic microbial count	cfu/g	USP/NF	<10
lds & Yeasts	cfu/g	USP/NF	105
cherichia coli	cfu/g	USP/NF	absent
lmonella Species	cfu/g	USP/NF	absent
ganic volatile impurties		USP/NF	meets USP/NF
es on drying	%	BAE 600	3,9
agnesium content	%	BAE 200 o	4,7
ee fatty acid	%	BAE 400	0,6
ave residue at 200 mesh	%	BAE 605	0,2
lk 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

datas of the obove mentioned delivery are based upon careful test according to the guidlines of our lity assurance system. They do not release the customer from entry control. Besides we do not garantee zial properties for concrete applications.
certificate was issued by EDV and does not bear a signature.

PT BRATACO
IMPORTER
MANUFACTURER
DISTRIBUTOR

LAMPIRAN N

SERTIFIKAT ANALISIS LAKTOSA

DMV INTERNATIONAL

Certificate of analysis

Issue date
18.02.2005
Purchase order
002879/PH/01578
Delivery item
80270238 000020
Order item
231054 000020
Total Quantity Item
16.000 KG

Lot: 10209286
Manufacture date: 01.2005

Quantity: 16.000 KG
Expiry date: 12.2007

Characteristic	Unit	SPECIFICATION Lower Limit	Upper Limit	Value
Particle size (PSD) % <250 µm	%	99,0	100,0	100,0
Standard plate count	cfu/g	0	100	<10
Yeasts and Moulds	cfu/g	0	10	<10
Enterobacteriaceae	cfu/g	0	1	0
E. coli in 10 g				negative
Salmonella in 100g				negative

J. Hermans
QA Manager

(This is an electronic document)

LAMPIRAN O

SERTIFIKAT ANALISIS NATRIUM HIDROKSIDA

Certificate

Product Name	Sodium hydroxide, puriss. p.a., ACS reagent, reag. Ph. Eur., (K ≤0.02%), ≥99%, pellets
Product Number	30620
Product Brand	Riedel-de Haën
CAS Number	1310-73-2
Molecular Formula	NaOH
Molecular Weight	40.00
	Reag. ACS, Reag. Ph. Eur.
assay	99.1 %
assay of Na2CO3	< 1 %
aluminium (Al)	< 0.0005 %
arsenic (As)	< 0.0001 %
calcium (Ca)	< 0.0005 %
copper (Cu)	< 0.0005 %
iron (Fe)	< 0.0005 %
mercury (Hg)	< 0.000005 %
potassium (K)	< 0.02 %
magnesium (Mg)	< 0.0005 %
nickel (Ni)	< 0.0005 %
lead (Pb)	< 0.0002 %
zinc (Zn)	< 0.0005 %
heavy metals (as Pb)	< 0.0005 %
heavy metals (as Ag)	< 0.002 %
chloride (Cl)	< 0.0005 %
phosphate (PO4)	< 0.0005 %
silicate (as SiO2)	< 0.001 %
sulfate (SO4)	< 0.0005 %
total N	< 0.0003 %
appearance of the solution	complying
	Identity, assay and impurities are complying to the monographs of the above mentioned pharmacopeias/codices.
QC-Releasedate	15.May.07
rec. Retest Date	01.Sep.10

Andreas Tomczak
Quality Manager
Seelze Germany

LAMPIRAN P

SERTIFIKAT ANALISA KALIUM DIHIDROGEN FOSFAT

Certificate

Product Name	Potassium phosphate monobasic, puriss. p.a., reag. ISO, reag. Ph. Eur., anhydrous, buffer substance, 99.5-100.5% (calc. on dry substance)
Product Number	30407
Product Brand	Riedel-de Haën
CAS Number	7778-77-0
Molecular Formula	KH_2PO_4
Molecular Weight	136.09
	Reag. ISO, Reag. Ph. Eur.
assay (calc. to the dried substance	) 99.7 %
water insoluble matter	< 0.005 %
loss on drying (130°C)	0.01 %
pH (5 %, 20°C)	4.3
arsenic (As)	< 0.00005 %
iron (Fe)	< 0.0005 %
sodium (Na)	0.002 %
heavy metals (as Pb)	< 0.0005 %
KMnO4 red. matter (as O)	complying
chloride (Cl)	< 0.0005 %
sulphate (SO4)	< 0.003 %
total N	< 0.001 %
appearance of the solution	complying
	Identity, assay and impurities are complying to the monographs of the above mentioned pharmacopeias/codices.
QC-Releasedate	18.Sep.06
rec. Retest Date	25.Feb.10

Andreas Tomczak
Quality Manager
Seelze Germany

LAMPIRAN Q

TABEL Z

z	0	1	2	3	4	5	6	7	8	9
.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
.2	.5793	.5832	.5871	.5920	.5948	.5987	.6026	.6064	.6103	.6141
.3	.6179	.6217	.6255	.6293	.6221	.6368	.6406	.6443	.6480	.6517
.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
.5	.6915	.6950	.6985	.7019	.7054	7088	.7123	.7157	.7190	.7224
.6	.7257	7291	7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
.7	.7580	.7611	.7642	.7673	.7703	.7734	.7764	.7794	.7823	.7852
.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
.9	.8159	.8186	.8212	.8238	.8264	.8289	.8215	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9278	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9430	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9615	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9541	.9648	.9656	.9664	.9671	.9678	.9686	.9693	.9700	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9762	.9767
2.0	.9772	.9778	.9783	.9788	.9792	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9874	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.	.9987	.9990	.9993	.9995	.9997	.9998	.9998	.9999	.9999	1.0000

z	0	1	2	3	4	5	6	7	8	9
−3.	.0013	.0010	.0007	.0005	.0003	.0002	.0002	.0001	.0001	.0000
−2.9	.0019	.0018	.0017	.0017	.0016	.0016	.0015	.0015	.0014	.0014
−2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
−2.7	.0035	.0034	.0033	.0032	.0021	.0030	.0029	.0028	.0027	.0026
−2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
−2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
−2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
−2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
−2.2	.0139	.0136	.0132	.0129	.0126	.0122	.0119	.0116	.0113	.0110
−2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
−2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
−1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0238	.0233
−1.8	.0359	.0352	.0344	.0336	.0329	.0322	.0314	.0307	.0300	.0294
−1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
−1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
−1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0570	.0559
−1.4	.0800	.0793	.0778	.0764	.0749	.0735	.0722	.0708	.0694	.0681
−1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
−1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
−1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
−1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
−.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
−.8	.2119	.2090	.2061	.2033	.2003	.1977	.1949	.1922	.1894	.1867
−.7	.2429	.2389	.2358	.2327	.2297	.2266	.2236	.2206	.2177	.2148
−.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
−.5	.3065	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
−.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
−.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
−.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
−.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
−.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

Dikutip dari: Gennaro, A.R. (1970)

LAMPIRAN R

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 S

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).

LAMPIRAN T

HASIL UJI STATISTIK KEKERASAN TABLET FORMULA A ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	137.9	13.79	0.0765556
Column 2	10	137.8	13.78	0.0684444
Column 3	10	137.9	13.79	0.0743333

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0006667	2	0.000333	0.0045593	0.9954519	3.354130829
Within Groups	1.974	27	0.073111			
Total	1.9746667	29				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN U

HASIL UJI STATISTIK KEKERASAN TABLET FORMULA B ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	147.1	14.71	0.018778
Column 2	10	146.3	14.63	0.015667
Column 3	10	146.3	14.63	0.015667

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.042667	2	0.021333	1.277162	0.295139	3.354131
Within Groups	0.451	27	0.016704			
Total	0.493667	29				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN V

HASIL UJI STATISTIK KEKERASAN TABLET FORMULA C ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	148.5	14.85	0.022778
Column 2	10	148.5	14.85	0.022778
Column 3	10	148.7	14.87	0.017889

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.002667	2	0.001333	0.063047	0.939037	3.354131
Within Groups	0.571	27	0.021148			
Total	0.573667	29				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN W

HASIL UJI STATISTIK KEKERASAN TABLET FORMULA D ANTAR *BATCH*

\

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	149.2	14.92	0.015111
Column 2	10	148.6	14.86	0.018222
Column 3	10	149.2	14.92	0.012889

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.024	2	0.012	0.778846	0.468974	3.354131
Within Groups	0.416	27	0.015407			
Total	0.44	29				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN X

HASIL UJI STATISTIK KEKERASAN TABLET ANTAR FORMULA *BATCH* 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	142.9	14.29	0.076556
Column 2	10	147.1	14.71	0.018778
Column 3	10	148.5	14.85	0.022778
Column 4	10	149.2	14.92	0.015111

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.38875	3	0.79625	2.857423	1.09E-08	2.866266
Within Groups	1.199	36	0.033306			
Total	3.58775	39				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN Y

HASIL UJI STATISTIK KEKERASAN TABLET ANTAR FORMULA *BATCH* 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	140.5	14.05	0.051667
Column 2	10	146.3	14.63	0.015667
Column 3	10	148.5	14.85	0.022778
Column 4	10	148.6	14.86	0.018222

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.33475	3	1.444917	2.750769	2.5E-13	2.866266
Within Groups	0.975	36	0.027083			
Total	5.30975	39				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN Z

HASIL UJI STATISTIK KEKERASAN TABLET ANTAR FORMULA *BATCH* 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	10	141.2	14.12	0.068444
Column 2	10	146.3	14.63	0.015667
Column 3	10	148.7	14.87	0.017889
Column 4	10	149.2	14.92	0.012889

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.017	3	1.339	2.618956	1.75E-12	2.866266
Within Groups	1.034	36	0.028722			
Total	5.051	39				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AA

HASIL UJI STATISTIK KERAPUHAN TABLET FORMULA A ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AB

HASIL UJI STATISTIK KERAPUHAN TABLET FORMULA B ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AC

HASIL UJI STATISTIK KERAPUHAN TABLET FORMULA C ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AD

HASIL UJI STATISTIK KERAPUHAN TABLET FORMULA D ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AE

HASIL UJI STATISTIK KERAPUHAN TABLET ANTAR FORMULA *BATCH* 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AF

HASIL UJI STATISTIK KERAPUHAN TABLET ANTAR FORMULA *BATCH* 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AG

HASIL UJI STATISTIK KERAPUHAN TABLET ANTAR FORMULA *BATCH* 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	0.50	0.16	0
Column 2	3	0.49	0.16	0
Column 3	3	0.43	0.14	0
Column 4	3	0.38	0.13	0

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.7E-32	3	1.2326E-32	0.063045	0.929037	4.066180557
Within Groups	0	8	0			
Total	3.7E-32	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AH

HASIL UJI STATISTIK PENETAPAN KADAR TABLET FORMULA A ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	306.4436	102.1479	1.652128
Column 2	3	305.6067	101.8689	2.95536
Column 3	3	300.3042	100.1014	2.053406

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	7.389891	2	3.694946	1.664167	0.266098	5.143253
Within Groups	13.32179	6	2.220298			
Total	20.71168	8				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AI

HASIL UJI STATISTIK PENETAPAN KADAR TABLET FORMULA B ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	295.8084	98.60281	0.547484
Column 2	3	297.6946	99.23152	2.073047
Column 3	3	298.2891	99.42972	1.315716

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.118337	2	0.559168	0.426169	0.671332	5.143253
Within Groups	7.872495	6	1.312082			
Total	8.990832	8				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AJ

HASIL UJI STATISTIK PENETAPAN KADAR TABLET FORMULA C ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	313.3382	101.4461	0.994154
Column 2	3	314.6805	101.2235	0.339266
Column 3	3	312.5113	101.1704	1.926321

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.798976	2	0.399488	0.367656	0.706937	5.143253
Within Groups	6.519481	6	1.08658			
Total	7.318457	8				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AK

HASIL UJI STATISTIK PENETAPAN KADAR TABLET FORMULA D ANTAR *BATCH*

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	299.925	99.9753	2.61148
		9	1	1
Column 2	3	310.347	103.449	0.90805
		3	1	2
Column 3	3	300.83	100.276	1.12897
			7	8

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	22.22233	2	11.11117	5.07079	0.265663	5.143253
Within Groups	9.297022	6	1.549504			
Total	31.51935	8				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AL

HASIL UJI STATISTIK PENETAPAN KADAR TABLET ANTAR FORMULA *BATCH* 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	306.4436	102.1479	1.652128
Column 2	3	295.8084	98.60281	0.547484
Column 3	3	313.3382	101.4461	0.994154
Column 4	3	299.925	99.97531	2.611481

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	58.93796	3	19.64599	3.536713	0.068201	4.066181
Within Groups	11.61049	8	1.451312			
Total	70.54846	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AM

HASIL UJI STATISTIK PENETAPAN KADAR TABLET ANTAR FORMULA *BATCH* 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	305.6067	101.8689	2.95536
Column 2	3	297.6946	99.2315	2.07304
Column 3	3	314.6805	101.223	0.33926
Column 4	3	310.3473	103.449	0.90805

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	52.8999	3	17.6333	3.23905	0.0623	4.06618
Within Groups	12.5514	8	1.56893			
Total	65.4513	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AN

HASIL UJI STATISTIK PENETAPAN KADAR TABLET ANTAR FORMULA *BATCH* 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	300.3042	100.1014	2.053406
Column 2	3	298.2891	99.42972	1.315716
Column 3	3	312.5113	101.1704	1.926321
Column 4	3	300.83	100.2767	1.128978

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	41.54419	3	13.84806	3.622139	0.068991	4.066181
Within Groups	12.84884	8	1.606105			
Total	54.39303	11				

PENGUJIAN HIPOTESA :

a. H : Pi = 0
   Yang berarti tidak ada perbedaan EFEK yang signifikan sebagai akibat perbedaan perlakuan.

b. KESIMPULAN:
   Karena F hitung < F(0.05) maka H diterima.
   Dengan perkataan lain perlakuan-perlakuan tidak memberikan perbedaan efek yang signifikan.

LAMPIRAN AO
HASIL UJI STATISTIK % ED_{360}
PERHITUNGAN ANAVA
(UJI STATISTIK % ED_{360})

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	172.2767	57.42555	0.003813
Column 2	3	133.705	44.56833	0.001011
Column 3	3	102.9579	34.31931	0.004804
Column 4	3	96.6575	32.21917	0.018503

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1197.393	3	399.1309	56752.44	1.2E-17	4.066181
Within Groups	0.056263	8	0.007033			
Total	1197.449	11				

Keterangan :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

Hasil Uji HSD % ED_{360}

Perlakuan		FA	FB	FC	FD
	Mean	57.42555	44.56833	34.31931	32.21917
FA	57.42555	0	12.85722 *	23.10625 *	-25.2064
FB	44.56833		0	10.24903 *	-12.3492
FC	34.31931			0	-2.10014
FD	32.21917				0

Keterangan
* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
TS : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)
HSD(5%) = 0.1899

LAMPIRAN AP

HASIL UJI STATISTIK % OBAT TERLEPAS

PERHITUNGAN ANAVA

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	3	244.92	81.64	1.4953
Column 2	3	180.36	60.12	0.1197
Column 3	3	155.81	51.93667	0.414633
Column 4	3	143.53	47.84333	3.540133

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2041.539	3	680.513	488.7192	2.13E-09	4.066181
Within Groups	11.13953	8	1.392442			
Total	2052.679	11				

Keterangan :
Fhitung > Ftabel (0,05) sehingga H ditolak dan ada perbedaan yang bermakna antar formula

Hasil Uji HSD % Obat Terlepas

		FA		FB		FC		FD
	Mean	81.64		60.12		51.93667		47.84333
FA	81.64	0		21.52	*	29.70333	*	-33.7967
FB	60.12			0		8.183333	*	-12.2767
FC	51.93667					0		-4.09333
FD	47.84333							0

Keterangan

* : Perbedaannya signifikan, karena selisihnya > HSD(5%)
TS : Perbedaannya tidak signifikan, karena selisihnya < HSD(5%)
HSD(5%) = 2.67274

LAMPIRAN AQ

UJI F KURVA BAKU

UJI KESAMAAN REGRESI (DAPAR FOSFAT PH = 6,8)

REPLIKASI 1

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2.06	0.234	4.2436	0.0548	0.4820
3.06	0.350	9.3636	0.1225	1.0710
4.10	0.468	16.8100	0.2190	1.9188
5.05	0.583	25.5025	0.3399	2.9442
6.18	0.696	38.1924	0.4844	4.3013
		94.1121	1.2206	10.7173

REPLIKASI 2

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2.08	0.236	4.3264	0.0557	0.4909
3.17	0.352	10.0489	0.1239	1.1158
4.12	0.466	16.9744	0.2172	1.9199
5.45	0.588	29.7025	0.3457	3.2046
6.14	0.690	37.6996	0.4761	4.2366
		98.7518	1.2186	10.9678

REPLIKASI 3

KONSENTRASI	ABSORBANSI	X^2	Y^2	XY
2.06	0.234	4.2436	0.0548	0.4820
3.09	0.349	9.5481	0.1218	1.0784
4.12	0.465	16.9744	0.2162	1.9158
5.15	0.582	26.5225	0.3387	2.9973
6.08	0.698	36.9664	0.4872	4.2438
		94.2550	1.2187	10.7174

	ΣX^2	ΣXY	ΣY^2	N	SSi	RDF
Regresi I	94.1121	10.7173	1.2206	5	1.1067	4
Regresi II	98.7518	10.9678	1.2186	5	1.1075	4
Regresi III	94.2550	10.7174	1.2187	5	1.1050	4
	287.1189	32.4025	3.6579		3.3192	

SSc = 3.545041057

F = 0.408155557 < Ftabel 0,05 (2; 12) 3,89