

**LAMPIRAN 1**  
**Hasil Perhitungan Nilai SPF Isolat Metil Sinamat**

1. Konsentrasi 1000 ppm

$\lambda$ (nm)	abs			Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
	1	2	3						
290	3,545	3,576	3,581	3,567	0,0150	0,054	10	<b>31,09</b>	Proteksi Ultra
295	3,674	3,629	3,662	3,655	0,0817	0,299			
300	3,461	3,463	3,458	3,461	0,2874	0,995			
305	3,214	3,201	3,207	3,207	0,3278	1,051			
310	3,072	3,069	3,070	3,070	0,1864	0,572			
315	1,576	1,575	1,575	1,575	0,0839	0,132			
320	0,336	0,337	0,336	0,336	0,0180	0,006			
Jumlah						3,109			

2. Konsentrasi 2000 ppm

$\lambda$ (nm)	abs			Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
	1	2	3						
290	3,582	3,610	3,599	3,597	0,0150	0,054	10	<b>32,54</b>	Proteksi Ultra
295	3,652	3,618	3,669	3,646	0,0817	0,298			
300	3,502	3,521	3,481	3,501	0,2874	1,006			
305	3,261	3,258	3,262	3,260	0,3278	1,069			
310	3,149	3,153	3,148	3,150	0,1864	0,587			
315	2,713	2,713	2,712	2,713	0,0839	0,228			
320	0,683	0,683	0,683	0,683	0,0180	0,012			
Jumlah						3,254			

3. Konsentrasi 3000 ppm

$\lambda$ (nm)	abs			Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
	1	2	3						
290	3,632	3,616	3,610	3,619	0,0150	0,054	10	<b>33,29</b>	Proteksi Ultra
295	3,687	3,678	3,674	3,680	0,0817	0,301			
300	3,533	3,506	3,505	3,515	0,2874	1,010			
305	3,289	3,287	3,282	3,286	0,3278	1,077			
310	3,187	3,190	3,187	3,188	0,1864	0,594			
315	2,942	3,946	2,938	3,275	0,0839	0,275			
320	0,972	0,972	0,973	0,972	0,0180	0,018			
Jumlah						3,329			

4. Konsentrasi 4000 ppm

$\lambda$ (nm)	abs			Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
	1	2	3						
290	3,603	3,611	3,585	3,600	0,0150	0,054	10	<b>33,26</b>	Proteksi Ultra
295	3,685	3,658	3,717	3,687	0,0817	0,301			
300	3,523	3,547	3,497	3,522	0,2874	1,012			
305	3,312	3,305	3,308	3,308	0,3278	1,084			
310	3,217	3,214	3,216	3,216	0,1864	0,599			
315	2,997	3,001	2,998	2,999	0,0839	0,252			
320	1,284	1,284	1,285	1,284	0,0180	0,023			
Jumlah						3,326			

5. Konsentrasi 5000 ppm

$\lambda$ (nm)	abs			Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
	1	2	3						
290	3,617	3,633	3,618	3,623	0,0150	0,054	10	<b>33,49</b>	Proteksi Ultra
295	3,688	3,687	3,734	3,703	0,0817	0,303			
300	3,545	3,535	3,525	3,535	0,2874	1,016			
305	3,324	3,324	3,325	3,324	0,3278	1,090			
310	3,238	3,244	3,238	3,240	0,1864	0,604			
315	3,029	3,030	3,030	3,030	0,0839	0,254			
320	1,597	1,597	1,598	1,597	0,0180	0,029			
Jumlah						3,349			

**LAMPIRAN 2**  
**Hasil Perhitungan Nilai SPF Sediaan Krim Tabir Surya**

1. Pengukuran SPF Hari Ke-0

**Formula F0A (Basis F1)**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
290	0,070	0,0150	0,001			
295	0,040	0,0817	0,003			
300	0,033	0,2874	0,009			
305	0,028	0,3278	0,009	10	<b>0,30</b>	Tidak Ada Proteksi
310	0,025	0,1864	0,005			
315	0,022	0,0839	0,002			
320	0,022	0,0180	0,000			
<b>Jumlah</b>			0,030			

**Formula F0B (Basis F2)**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
290	0.144	0.0150	0.002			
295	0.103	0.0817	0.008			
300	0.092	0.2874	0.026			
305	0.083	0.3278	0.027	10	<b>0.86</b>	Tidak Ada Proteksi
310	0.078	0.1864	0.015			
315	0.071	0.0839	0.006			
320	0.063	0.0180	0.001			
Jumlah			0.086			

**Formula 1**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
290	3,453	0,0150	0,052			
295	3,326	0,0817	0,272			
300	2,636	0,2874	0,758			
305	1,407	0,3278	0,461	10	<b>16,34</b>	Proteksi Ultra
310	0,442	0,1864	0,082			
315	0,105	0,0839	0,009			
320	0,029	0,0180	0,001			
<b>Jumlah</b>			1,634			

**Formula 2**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
290	3,483	0,0150	0,052			
295	3,313	0,0817	0,271			
300	2,607	0,2874	0,749			
305	1,395	0,3278	0,457			
310	0,451	0,1864	0,084	10	<b>16,24</b>	Proteksi Ultra
315	0,116	0,0839	0,010			
320	0,040	0,0180	0,001			
<b>Jumlah</b>			1,624			

## 2. Pengukuran SPF Hari Ke-28

**Formula F0A (Basis F1)**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
290	-0,086	0,0150	-0,001			
295	-0,088	0,0817	-0,007			
300	-0,070	0,2874	-0,020			
305	-0,049	0,3278	-0,016			
310	-0,028	0,1864	-0,005	10	<b>-0,51 (0)</b>	Tidak Ada Proteksi
315	-0,012	0,0839	-0,001			
320	-0,003	0,0180	0,000			
<b>Jumlah</b>			-0,051			

**Formula 1**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
290	3,254	0,0150	0,049			
295	2,958	0,0817	0,242			
300	2,200	0,2874	0,632			
305	1,183	0,3278	0,388			
310	0,372	0,1864	0,069	10	<b>13,87</b>	Proteksi Maksimal
315	0,083	0,0839	0,007			
320	0,022	0,0180	0,000			
<b>Jumlah</b>			1,387			

**Formula 2**

$\lambda$ (nm)	Abs	EE x I	EE x I x Abs	CF	SPF	Keterangan
<b>290</b>	3,330	0,0150	0,050			
<b>295</b>	3,273	0,0817	0,267			
<b>300</b>	2,693	0,2874	0,774			
<b>305</b>	1,535	0,3278	0,503	10	<b>17,02</b>	Proteksi Ultra
<b>310</b>	0,518	0,1864	0,097			
<b>315</b>	0,123	0,0839	0,010			
<b>320</b>	0,030	0,0180	0,001			
	<b>Jumlah</b>		1,702			

**LAMPIRAN 3**  
**Hasil Perhitungan Uji Stabilitas**

1. Perhitungan ppm

Isolat metil sinamat = 5 mg

Metanol pro analisis = 50 mL = 0,05 L

$$\text{ppm} = \frac{\text{mg}}{\text{L}} = \frac{5 \text{ mg}}{0,05 \text{ L}} = 100 \text{ ppm}$$

2. Pengenceran Larutan Induk

a. 5 ppm

$$C_1 \cdot V_1 = C_2 \cdot V_2$$

$$100 \cdot V_1 = 5 \cdot 10$$

$$V_1 = \frac{50}{100} = 0,5 \text{ mL}$$

b. 10 ppm

$$C_1 \cdot V_1 = C_2 \cdot V_2$$

$$100 \cdot V_1 = 10 \cdot 10$$

$$V_1 = \frac{100}{100} = 1 \text{ mL}$$

c. 15 ppm

$$C_1 \cdot V_1 = C_2 \cdot V_2$$

$$100 \cdot V_1 = 15 \cdot 10$$

$$V_1 = \frac{150}{100} = 1,5 \text{ mL}$$

d. 20 ppm

$$C_1 \cdot V_1 = C_2 \cdot V_2$$

$$100 \cdot V_1 = 20 \cdot 10$$

$$V_1 = \frac{200}{100} = 2 \text{ mL}$$

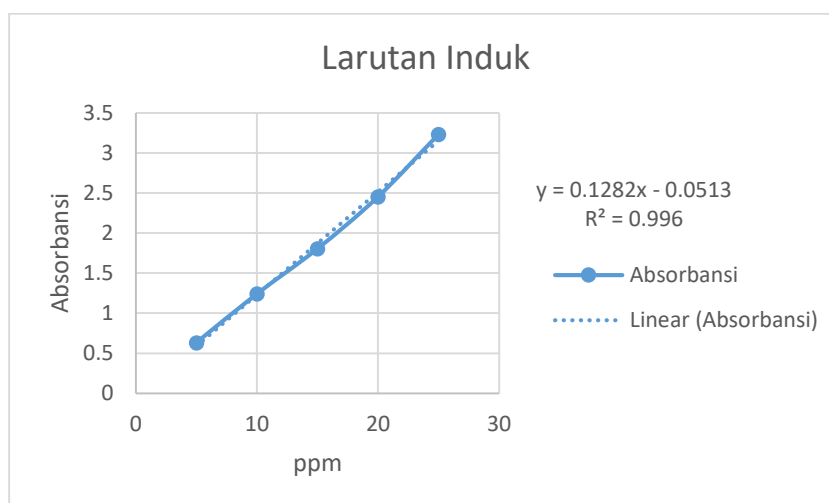
e. 25 ppm

$$C_1 \cdot V_1 = C_2 \cdot V_2$$

$$100 \cdot V_1 = 5 \cdot 10$$

$$V_1 = \frac{250}{100} = 2,5 \text{ mL}$$

### 3. Regresi Linier Larutan Induk



### 4. Hasil Pengukuran Absorbansi Larutan Induk

Konsentrasi (ppm)	Absorbansi
5	0.632
10	1.240
15	1.803
20	2.451
25	3.231

### 5. Hasil Pengukuran Absorbansi Sediaan Krim Tabir Surya

Sediaan	Hasil Absorbansi Bulan Ke-			
	0	1	2	3
<b>F0 (Basis)</b>	3,146	3,049	3,04	3,208
<b>F1</b>	3,753	3,778	3,676	3,529
<b>F2 (Basis)</b>	3,198	3,066	3,057	3,199
<b>F2</b>	3,818	3,764	3,736	3,659

### 6. Perhitungan Absorbansi Metil Sinamat Sediaan Krim Tabir Surya

#### a. Formula 1

#### 1) Bulan Ke-0

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F1-F0} \\ &= 3,753 - 3,146 = 0,607 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,607 = 0,1282x - 0,0513$$

$$0,607 + 0,0513 = 0,1282x$$

$$0,6583 = 0,1282x$$

$$x = \frac{0,6583}{0,1282} = 5,14 \text{ ppm}$$

2) Bulan Ke-1

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F1-F0} \\ &= 3,778 - 3,049 = 0,729 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,729 = 0,1282x - 0,0513$$

$$0,729 + 0,0513 = 0,1282x$$

$$0,7803 = 0,1282x$$

$$x = \frac{0,7803}{0,1282} = 6,09 \text{ ppm}$$

3) Bulan Ke-2

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F1-F0} \\ &= 3,676 - 3,040 = 0,636 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,636 = 0,1282x - 0,0513$$

$$0,636 + 0,0513 = 0,1282x$$

$$0,6873 = 0,1282x$$

$$x = \frac{0,6873}{0,1282} = 5,36 \text{ ppm}$$

4) Bulan Ke-3

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F1-F0} \\ &= 3,529 - 3,208 = 0,321 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$



$$0,321 = 0,1282x - 0,0513$$

$$0,321 + 0,0513 = 0,1282x$$

$$0,3723 = 0,1282x$$

$$x = \frac{0,3723}{0,1282} = 2,90 \text{ ppm}$$

b. Formula 2

1) Bulan Ke-0

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F2-F2 (basis)} \\ &= 3,818 - 3,198 = 0,62 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,62 = 0,1282x - 0,0513$$

$$0,62 + 0,0513 = 0,1282x$$

$$0,6713 = 0,1282x$$

$$x = \frac{0,6713}{0,1282} = 5,24 \text{ ppm}$$

2) Bulan Ke-1

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F2-F2 (basis)} \\ &= 3,764 - 3,066 = 0,698 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,698 = 0,1282x - 0,0513$$

$$0,698 + 0,0513 = 0,1282x$$

$$0,7493 = 0,1282x$$

$$x = \frac{0,7493}{0,1282} = 5,84 \text{ ppm}$$

3) Bulan Ke-2

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F2-F2 (basis)} \\ &= 3,736 - 3,057 = 0,679 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,679 = 0,1282x - 0,0513$$

$$0,679 + 0,0513 = 0,1282x$$

$$0,7303 = 0,1282x$$

$$x = \frac{0,7303}{0,1282} = 5,7 \text{ ppm}$$

4) Bulan Ke-3

Dik :

$$\begin{aligned} \text{Absorbansi} &= \text{Abs F2-F2 (basis)} \\ &= 3,659 - 3,199 = 0,46 \end{aligned}$$

Volume = 10 mL

$$y = 0,1282x - 0,0513$$

Jawab :

$$y = 0,1282x - 0,0513$$

$$0,46 = 0,1282x - 0,0513$$

$$0,46 + 0,0513 = 0,1282x$$

$$0,5113 = 0,1282x$$

$$x = \frac{0,5113}{0,1282} = 3,99 \text{ ppm}$$

#### 7. Perhitungan %Kadar Metil Sinamat Sediaan Krim Tabir Surya

Sediaan	Bulan Ke-	Abs (F - F basis)	Kadar Metil Sinamat terukur (ppm)	Kadar (%)
F1	1	0,729	6,09	$= \frac{6,09 \text{ ppm}}{5,14 \text{ ppm}} \times 100\% = 118,48\%$
	2	0,636	5,36	$= \frac{5,36 \text{ ppm}}{5,14 \text{ ppm}} \times 100\% = 104,28\%$
	3	0,321	2,90	$= \frac{2,90 \text{ ppm}}{5,14 \text{ ppm}} \times 100\% = 56,42\%$
F2	1	0,698	5,84	$= \frac{5,84 \text{ ppm}}{5,24 \text{ ppm}} \times 100\% = 111,45\%$
	2	0,679	5,7	$= \frac{5,7 \text{ ppm}}{5,24 \text{ ppm}} \times 100\% = 108,78\%$
	3	0,460	3,99	$= \frac{3,99 \text{ ppm}}{5,24 \text{ ppm}} \times 100\% = 76,14\%$

**LAMPIRAN 4**  
**Hasil Perhitungan Uji ALT dan AKK**

1. Perhitungan Angka Lempeng Total

a. Formula 0

1)  $10^{-1}$

$$\begin{aligned} \text{ALT} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 84 \times \frac{1}{10^{-1}} \\ &= 84 \times 10^1 = 840 \end{aligned}$$

2)  $10^{-2}$

$$\begin{aligned} \text{ALT} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 213 \times \frac{1}{10^{-2}} \\ &= 213 \times 10^2 = 21300 \end{aligned}$$

b. Formula 1

1)  $10^{-1}$

$$\begin{aligned} \text{ALT} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 11 \times \frac{1}{10^{-1}} \\ &= 11 \times 10^1 = 110 \end{aligned}$$

2)  $10^{-2}$

$$\begin{aligned} \text{ALT} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 89 \times \frac{1}{10^{-2}} \\ &= 89 \times 10^2 = 8900 \end{aligned}$$

2. Perhitungan Angka Kapang Khamir

a. Formula 0

1)  $10^{-1}$

$$\begin{aligned} \text{AKK} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 185 \times \frac{1}{10^{-1}} \\ &= 185 \times 10^1 = 1850 \end{aligned}$$

2)  $10^{-2}$

$$\begin{aligned} \text{AKK} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 235 \times \frac{1}{10^{-2}} \\ &= 235 \times 10^2 = 23500 \end{aligned}$$

b. Formula 1

1)  $10^{-1}$

$$\text{AKK} = V \times N \times \frac{1}{FP}$$

$$\begin{aligned} &= 1 \times 164 \times \frac{1}{10^{-1}} \\ &= 164 \times 10^1 = 1640 \end{aligned}$$

3)  $10^{-2}$

$$\begin{aligned} \text{AKK} &= V \times N \times \frac{1}{FP} \\ &= 1 \times 121 \times \frac{1}{10^{-2}} \\ &= 121 \times 10^2 = 12100 \end{aligned}$$

## LAMPIRAN 5

### Certificate of Analysis Isolat Metil Sinamat

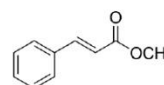
#### ANALYTICAL SERVICE LABORATORY STFI – SEKOLAH TINGGI FARMASI INDONESIA

Soekarno Hatta 354 Parakan Resik Bandung - West Java Indonesia  
Telp. +62 22 7566484 / E-mail : stfindonesia@gmail.com



#### CERTIFICATE OF ANALYSIS

Product Name : Methyl Cinnamate  
 Source : *Alpina malaccensis* (Alpinia galanga rhizoma)  
 Purity : > 95% HPLC  
 Product ID : PISMPCAG001  
 No.Batch : 2208005MS  
 CAS Number : 103-26-4  
 Formula : C<sub>10</sub>H<sub>10</sub>O<sub>2</sub>  
 Formula weight : 162,185 g/mol



Test	Specification	Result
Appearance (color)	White	White
Appearance (form)	Powder	Powder
Solubility ( EtOH)	Colorless	Colorless
Purity (HPLC)	> 95 %	97 %
Melting Point	34-38 °C	34,9 °C
LOD	>10%	0
pH	-	5,0

#### Microbiological Data

Test	Standard	Result	Method
Microbial Contamination	≤ 10 <sup>6</sup> koloni/ gram	10 <sup>1</sup> koloni/ gram	Total Plate Count
	≤ 10 <sup>4</sup> koloni/ gram	10 <sup>1</sup> koloni/ gram	Yeast Mold Number
Pathogenic microorganisms			Conventional cultivation-based enrichment and plating methods
E.Coli	Negative	Negative	
Staphylococcus A.	Negative	Negative	
Salmonella sp.	Negative	Negative	
Pseudomonas aerogenosa	Negative	Negative	


#### Heavy Metals Limit

Test	Standard	Result	Method
Pb	≤ 10 ppm	Not Detected	AAS
Cd	≤ 0,3 ppm	Not Detected	AAS
Hg	≤ 0,5 ppm	Not Detected	AAS


Head Of Analytical Service Laboratory

apt. Wiwin Winingsih, M.Si.

**LAMPIRAN 6**  
**Certificate of Analysis Asam Stearat**



Oleochemicals Industry



---

**CERTIFICATE OF ANALYSIS**


DATE OF ISSUED : November 19, 2018  
 BUYER :  
 PRODUCT : STEARIC ACID Triple Pressed  
 PRODUCT CODE : SA-301  
 QUANTITY : 2500 kgs

---

TEST RESULT				
Batch no	161118		Specification	Ref. Method : AOCS
Manufacturing Date	16-11-18			
Expiry Date*	16-11-20			
Colour Lovibond 5.25" Cell	Red	0.1	0.2 max	Cc 13j-97
	Yellow	0.6	1.0 max	
Iodine value (gl <sub>2</sub> /100g)	0.22		0.5 max	Tg 1a-64
Acid value (mgKOH/g)	209.24		207 - 211	Te 1a-64
Saponification value (mgKOH/g)	216.34		208 - 212	Ti 1a-64
Titer (°C)	55.4		54 - 56	Tr 1a-64
	C <sub>14</sub>	0.37	2 max	Ce 1-62
C <sub>16</sub>	58.18	53 - 62		
Carbon composition (%)	C <sub>18</sub>	40.85	38 - 45	
	>C <sub>18</sub>	0.46	1 max	
	Others	0.15	0.5 max	

\* Under optimum storage condition. Optimum means sheltered warehouse and away from direct sunlight or heat.

Certified By,



Ateng I. Hernawan  
QC Laboratory Dept.

**LAMPIRAN 7**  
**Certificate of Analysis Setil Alkohol**

**CERTIFICATE OF ANALYSIS**

*Ethyl alc.*      30/08/2022

COA No. : COA-2208212  
 Product Name : CepSinol P16 (Fatty Alcohol)  
 Product Form : **Pastille**  
 Batch No. : C08H17GC12

Quantity : 8 MT  
 Packing : 25 KG Paper Bag With Loose Stuffing (SCPL Brand)

PARAMETER	UNIT	SPECIFICATION	RESULT	METHOD
Appearance@30C		White Solid/Bead/Pastille	Pastille	Visual
Hydroxyl Value	mgKOH/g	228-233	231	AOCS Cd 13-60
Saponification Value	mgKOH/g	0.5 Max	0.06	AOCS Ti 1a-64
Acid Value	mgKOH/g	0.1 Max	0.01	AOCS Te 2a-64
Iodine Value	%I2	0.5 Max	0.02	AOCS Tg 1a-64
Color	APHA	10 Max	5.0	ASTM D1209
Moisture	%	0.3 Max	0.06	ISO 780
Solidification Point	°C	47-50	49.0	ISO 3841
Composition				
<=C14	%	2 Max	0.3	ESM-TM-QC-208
C16	%	98 Min	99.5	ESM-TM-QC-208
>=C18	%	2 Max	0.0	ESM-TM-QC-208
Hydrocarbon	%	0.5 Max	0.1	ESM-TM-QC-208


Manufacturing Date : 17/08/2022  
 Expiry Date : 15/08/2024

We hereby certify the analysis of the sample as shown above.

This document has been produced electronically from a validated system no signature is required


## LAMPIRAN 8

### Certificate of Analysis Gliserin



**PT. WILMAR NABATI INDONESIA**  
Quality Control Department

FWINA-QC-18-011  
REV 02 - 25.09.2020



**KAN**  
Komite Akreditasi Nasional  
Laboratorium Pengujian  
LP-010-IDN

---

Date : 29/October/2022

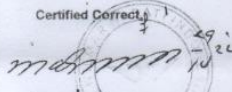
#### CERTIFICATE OF ANALYSIS

Ref No. : G/QC/GSK/22/X-092  
 Customer : UNICHEM BDG  
 Product : REFINED GLYCERINE 99.7%  
 Manufactured Date : OCTOBER 07, 2022  
 Best Before : OCTOBER 07, 2023  
 Date of Received : OCTOBER 07, 2022  
 Date of Analysis : OCTOBER 07, 2022  
 Lot No. : G221007-23W

Parameter	Unit	Result	Specification	Test Method
Appearance *)		Transparent	Transparent	Visual
Identification A (IR)		Conform	Conform	USP 43 : 2020 (197 F)
Identification B *)				
- Diethylene Glycol	%	<0.10	0.1 max	USP 43 : 2020 (P.1967)
- Ethylene Glycol	%	<0.10	0.1 max	
Identification C (GC)		Conform	Conform	USP 43 : 2020 (P.1967)
Glycerine Content	%	99.8	99.7 min	USP 43 : 2020 (P.1967)
Chloride	ppm	<10	10 max	USP 43 : 2020 (221)
Sulfate	ppm	<20	20 max	USP 43 : 2020 (221)
Residue on Ignition	%	0.002	0.01 max	USP 43 : 2020 (281)
Chlorinated Compounds *)	ppm	<30	30 max	USP 43 : 2020 (P.1958)
Color (mL FeCl3 *)	-	<0.4	0.4 max	USP 43 : 2020 (P.1958)
Specific Gravity @ 25	-	1.2614	1.2612 min	USP 43 : 2020 (841)
Moisture Content	%	0.10	0.3 max	USP 43 : 2020 (821)
Color (APHA) *)	-	5	10 max	AOCS Ea 9-65
Heavy Metal as Pb	ppm	< 5	5 max	USP 41: 2018 (231)

Remark :  
\*) not accredited parameter

Certified Correct



**Mahfud Amarah**  
QC Ass. Manager

The result of these test related only to the sample (s) submitted  
 This report shall not be used for advertising purpose  
 This report shall not be reproduced except in full context, without the written approval of PT. Wilmar Nabati Indonesia

---


Factory :

Jl. Kapten Darmo Sugondo No. 56  
Gresik - 61124, East Java - Indonesia  
Tel : +6231-3969101 Fax : +6231-3978922

Page 1 Of 1



**LAMPIRAN 9**  
**Certificate of Analysis Metanol Pro Analisis**



## Specification


1.06009.2500 Methanol for analysis EMSURE® ACS,ISO,Reag. Ph Eur

Specification	Specification	Specification
Purity (GC)	≥ 99.9	%
Identity (IR)	conforms	
Appearance	clear	
Color	≤ 10	Hazen
Solubility in water	conforms	
Acidity	≤ 0.0002	meq/g
Alkalinity	≤ 0.0002	meq/g
Density (d 20 °C/20 °C)	0.791 - 0.793	
Boiling point	64 - 65	°C
Benzene (impurity A) (GC)	≤ 2	ppm
Ethanol (GC)	≤ 0.05	%
Acetone	≤ 0.001	%
Acetaldehyde	≤ 0.001	%
Formaldehyde	≤ 0.001	%
Readily carbonizable substances	conforms	
Carbonyl compounds (as CO)	≤ 0.001	%
Chloride (Cl)	≤ 0.5	ppm
Sulfate (SO <sub>4</sub> )	≤ 1	ppm
Substances reducing potassium permanganate (as O)	≤ 0.00025	%
Ag (Silver)	≤ 0.000002	%
Al (Aluminium)	≤ 0.00005	%
As (Arsenic)	≤ 0.000002	%
Au (Gold)	≤ 0.000002	%
Ba (Barium)	≤ 0.00001	%
Be (Beryllium)	≤ 0.000002	%
Bi (Bismuth)	≤ 0.000002	%
Ca (Calcium)	≤ 0.00005	%
Cd (Cadmium)	≤ 0.000005	%
Co (Cobalt)	≤ 0.000002	%
Cr (Chromium)	≤ 0.000002	%
Cu (Copper)	≤ 0.000002	%
Fe (Iron)	≤ 0.00001	%
Ga (Gallium)	≤ 0.000002	%
In (Indium)	≤ 0.000002	%
Li (Lithium)	≤ 0.000002	%
Mg (Magnesium)	≤ 0.00001	%
Mn (Manganese)	≤ 0.000002	%
Mo (Molybdenum)	≤ 0.000002	%
Ni (Nickel)	≤ 0.000002	%
Pb (Lead)	≤ 0.00001	%

Merck KGaA, Frankfurter Straße 250, 64293 Darmstadt (Germany); +49 6151 72-0  
EMD Millipore Corporation - a subsidiary of Merck KGaA, Darmstadt, Germany  
400 Summit Drive, Burlington, MA 01803, USA, Phone +1 (781) 533-6000

Page 1 of 2

**LAMPIRAN 10**  
**Certificate of Analysis Potato Dextrose Agar (PDA)**



## Certificate of Analysis

---

1.10130.0500 Potato dextrose agar for microbiology  
Batch VM988630

---

	Spec. Values	Batch Values
Appearance (clearness)	clear to slightly opalescent	slightly opalescent
Appearance (color)	yellowish-brown	yellowish-brown
pH-value (25 °C)	5.4 - 5.8	5.6

---

	Spec. Values	Batch Values
Growth (Geotrichum candidum DSM 1240)	good to very good	very good
Growth (Penicillium commune ATCC 10428)	medium to good	good
Growth (Trichophyton ajelloi ATCC 28454)	medium to good	moderately

Incubation: 5 days; 28 °C  
Growth promotion test in accordance with the harmonised method of EP and USP.

---


	Spec. Values	Batch Values
Inoculum on reference medium (Candida albicans ATCC 10231 (WDCM 00054))	10 - 100	80
Inoculum on reference medium (Aspergillus brasiliensis (formerly A. niger) ATCC 16404 (WDCM 00053))	10 - 100	39
Inoculum on reference medium (Saccharomyces cerevisiae ATCC 9763 (WDCM 00058))	10 - 100	76
Inoculum on reference medium (Rhodotorula mucilaginosa DSM 70403)	10 - 100	18
Colony count (Candida albicans ATCC 10231 (WDCM 00054))		62
Colony count (Aspergillus brasiliensis (formerly A. niger) ATCC 16404 (WDCM 00053))		29
Colony count (Saccharomyces cerevisiae ATCC 9763 (WDCM 00058))		78
Colony count (Rhodotorula mucilaginosa DSM 70403)		14
Recovery on test medium (Candida albicans ATCC 10231 (WDCM 00054))	≥ 70 %	78 %
Recovery on test medium (Aspergillus brasiliensis (formerly A. niger) ATCC 16404 (WDCM 00053))	≥ 50 %	74 %
Recovery on test medium (Saccharomyces cerevisiae ATCC 9763 (WDCM 00058))	≥ 70 %	103 %
Recovery on test medium (Rhodotorula mucilaginosa DSM 70403)	≥ 70 %	78 %

Incubation: up to 5 days; 20-25 °C

Merck KGaA, Frankfurter Straße 250, 64293 Darmstadt (Germany); +49 6151 72-0  
EMD Millipore Corporation - a subsidiary of Merck KGaA, Darmstadt, Germany  
400 Summit Drive, Burlington, MA 01803, USA, Phone +1 (781) 533-6000

Page 1 of 2

**LAMPIRAN 11**  
**Certificate of Analysis Nutrient Agar (NA)**



## Certificate of Analysis

Physical parameters	Specification	Lot value
Appearance (clarity):	clear to slightly opalescent	clear
Appearance (color):	yellowish-brown	yellowish-brown
pH-value (25 °C):	6.8 – 7.2	7.1
Solidification behaviour (2 h at 45 °C)	liquid	liquid

---

### Microbiological Performance

#### Quantitative method for solid media (spiral plater)

Test strain	Specification	Reference CFU	Test CFU	Recovery rate
Escherichia coli ATCC® 8739 [WDCM 00012]	≥ 70 %	138	117	85 %
Escherichia coli ATCC® 25922 [WDCM 00013]	≥ 70 %	172	180	105 %
Salmonella typhimurium ATCC® 14028 [WDCM 00031]	≥ 70 %	116	106	91 %
Salmonella enteritidis ATCC® 13076 [WDCM 00030]	≥ 70 %	233	179	77 %
Yersinia enterocolitica ATCC® 9610 [WDCM 00038]	≥ 70 %	140	110	79 %
Yersinia enterocolitica ATCC® 23715 [WDCM 00160]	≥ 70 %	98	70	71 %
Staphylococcus aureus ATCC® 25923 [WDCM 00034]	≥ 70 %	118	100	85 %

**Incubation:** 24 ± 2 hours at 37 ± 1 °C aerobic  
Yersinia 24 ± 2 hours at 30 ± 1 °C aerobic

**Reference medium:** Tryptic Soy Agar

A recovery rate of 70 % is equivalent to a productivity rate of 0.7.  
The indicated colony counts result from the sum of a triple determination.

**All test methods listed are according to DIN EN ISO 11133:2014.**

---

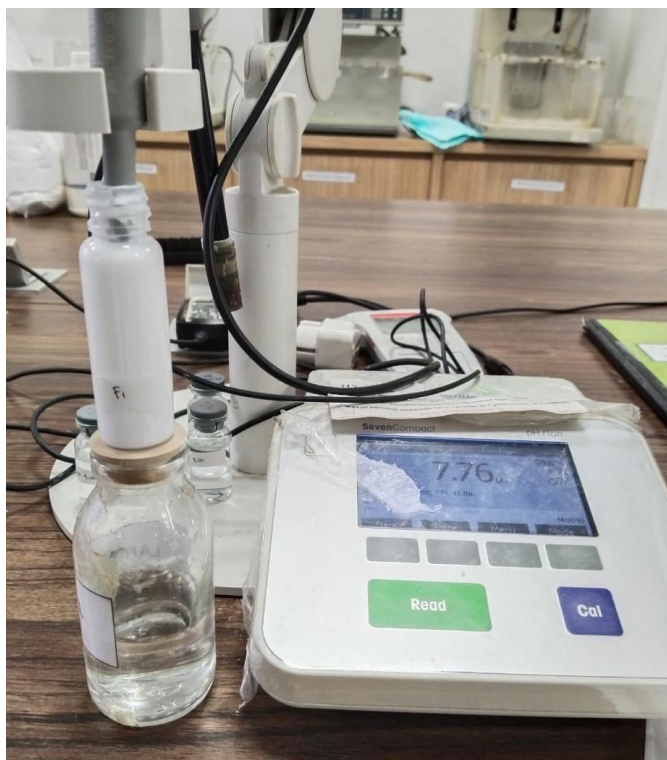
Merck KGaA · Frankfurter Straße 250, 64293 Darmstadt, Germany: +49 6151 72-2440  
EMD Millipore Corp. · 290 Concord Road, Billerica, MA 01821, USA +1-978-715-4321  
ATCC is a registered trademark of ATCC, Manassas, VA, USA. Lit. No. TN105406EN00

1054500500\_VM966650\_EN  
Page 2/3

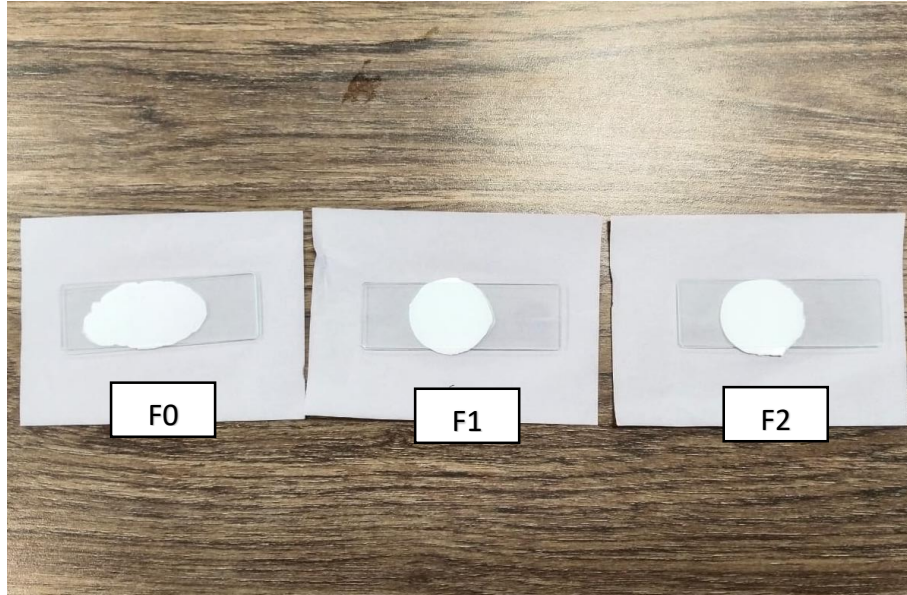
**LAMPIRAN 12**  
**Hasil Sediaan Krim Tabir Surya**



**LAMPIRAN 13**  
**Gambar Evaluasi pH**



**LAMPIRAN 14**  
**Gambar Evaluasi Homogenitas**



## LAMPIRAN 15

### Gambar Evaluasi Viskositas



**LAMPIRAN 16**  
**Gambar Evaluasi Daya Sebar & Daya Lekat**





**LAMPIRAN 17**  
**Gambar Evaluasi Tipe Emulsi Krim**



**LAMPIRAN 18**  
**Gambar Uji ALT dan AKK**

