

## LAMPIRAN

## Lampiran 1 Determinasi tanaman daun turi



UNIVERSITAS INDONESIA  
FAKULTAS MATEMATIKA DAN  
ILMU PENGETAHUAN ALAM

DEPARTEMEN BIOLOGI  
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Depok, 7 Juni 2023

Nomor : 534/UN2.F3.11/PDP.02.00/2023  
Lampiran : 1 halaman (Daftar Referensi dan Catatan Identifikator)  
Perihal : Hasil identifikasi tumbuhan


Kepada  
Okta Pebri Yanti  
Program Studi Farmasi  
Fakultas Ilmu-ilmu Kesehatan  
Universitas Esa Unggul  
Duri Kepa, Kebon Jeruk  
DKI Jakarta 11510

Dengan hormat,  
bersama ini kami sampaikan hasil identifikasi tumbuhan yang Saudara kirimkan ke Herbarium Depokensis (UIDEP), Ruang Koleksi Biota Universitas Indonesia, pada tanggal 6 Juni 2023, adalah sebagai berikut dengan acuan yang tertera pada lampiran.

No.	Dugaan dan Kode Spesimen	Hasil Identifikasi	
		Spesies	Famili
1.	Daun Turi ( <i>Sesbania grandiflora</i> L.) famili Fabaceae  [JI23-P-071]	<i>Sesbania grandiflora</i> (L.) Poir.*	Fabaceae

\*lihat catatan identifikator

Departemen Biologi FMIPA UI dan Herbarium Depokensis (UIDEP), Ruang Koleksi Biota Universitas Indonesia tidak bertanggung jawab terhadap tindakan penyalahgunaan hasil identifikasi. Demikian surat ini dibuat untuk dapat dipergunakan sebagaimana mestinya oleh pihak yang bersangkutan.

Departemen Biologi FMIPA UI  
Ketua,  
  
Anom Bowo Kusono, Ph.D  
NIP. 197406011998021001

**Lampiran 2** Perhitungan rendemen simplisia (%)

$$\begin{aligned}(\%) \text{ Rendemen simplisia} &= \frac{\text{jumlah berat simplisia kering (g)}}{\text{jumlah berat simplisia basah (g)}} \times 100 \\ &= \frac{1.150 \text{ (g)}}{5.000 \text{ (g)}} \times 100 \\ &= 23\%\end{aligned}$$

**Lampiran 3** Perhitungan rendemen ekstrak

$$\begin{aligned}(\%) \text{ Rendemen simplisia} &= \frac{\text{jumlah berat ekstrak (g)}}{\text{jumlah berat serbuk simplisia (g)}} \times 100 \\ &= \frac{83,11 \text{ (g)}}{300 \text{ (g)}} \times 100 \\ &= 27,7\%\end{aligned}$$

ket :

Berdasarkan perhitungan diatas maka hasil (%) dari rendemen ekstrak etanol daun turi yaitu 27,7%

**Lampiran 4** Perhitungan sediaan krim 50 gram

Perhitungan bahan :

F1 =	Ekstrak etanol daun turi	$= \frac{10}{100} \times 50 = 5 \text{ gr}$
	Asam stearat	$= \frac{4,5}{100} \times 50 = 2,375 \text{ g}$
	Trietanolamin	$= \frac{0,5}{100} \times 50 = 0,125 \text{ g}$
	Setil alkohol	$= \frac{4,6}{100} \times 50 = 2,3 \text{ g}$
	Gliserin	$= \frac{20}{100} \times 50 = 10 \text{ g}$
	Metil paraben	$= \frac{0,2}{100} \times 50 = 0,1 \text{ g}$
	Propil paraben	$= \frac{0,05}{100} \times 50 = 0,025 \text{ g}$
	Vitamin C	$= \frac{0,1}{100} \times 50 = 0,05 \text{ g}$
	Aquades	$= 50 - (5 \text{ g} + 2,375 \text{ g} + 0,125 \text{ g} + 2,3 \text{ g} + 10 \text{ g} + 0,1 \text{ g} + 0,025 \text{ g} + 0,05 \text{ g})$ $= 30,025 \text{ g}$

F2 =	Ekstrak etanol daun turi	$= \frac{10}{100} \times 50 = 5 \text{ gr}$
	Asam stearat	$= \frac{4,69}{100} \times 50 = 2,345 \text{ g}$
	Trietanolamin	$= \frac{0,31}{100} \times 50 = 0,155 \text{ g}$
	Setil alkohol	$= \frac{4,6}{100} \times 50 = 2,3 \text{ g}$
	Gliserin	$= \frac{20}{100} \times 50 = 10 \text{ g}$
	Metil paraben	$= \frac{0,2}{100} \times 50 = 0,1 \text{ g}$
	Propil paraben	$= \frac{0,05}{100} \times 50 = 0,025 \text{ g}$
	Vitamin C	$= \frac{0,1}{100} \times 50 = 0,05 \text{ g}$
	Aquades	$= 50 - (5 \text{ g} + 2,345 \text{ g} + 0,155 \text{ g} + 2,3 \text{ g} + 10 \text{ g} + 0,1 \text{ g} + 0,025 \text{ g} + 0,05 \text{ g})$ $= 30,025 \text{ g}$

F3 =

Ekstrak etanol daun turi	$= \frac{10}{100} \times 50 = 5 \text{ gr}$
Asam stearat	$= \frac{4,63}{100} \times 50 = 2,315 \text{ g}$
Trietanolamin	$= \frac{0,37}{100} \times 50 = 0,185 \text{ g}$
Setil alkohol	$= \frac{4,6}{100} \times 50 = 2,3 \text{ g}$
Gliserin	$= \frac{20}{100} \times 50 = 10 \text{ g}$
Metil paraben	$= \frac{0,2}{100} \times 50 = 0,1 \text{ g}$
Propil paraben	$= \frac{0,05}{100} \times 50 = 0,025 \text{ g}$
Vitamin C	$= \frac{0,1}{100} \times 50 = 0,05 \text{ g}$
Aquades	$= 50 - (5 \text{ g} + 2,315 \text{ g} + 0,185 \text{ g} + 2,3 \text{ g} + 10 \text{ g} + 0,1 \text{ g} + 0,025 \text{ g} + 0,05 \text{ g})$ $= 30,025 \text{ g}$

F4 =

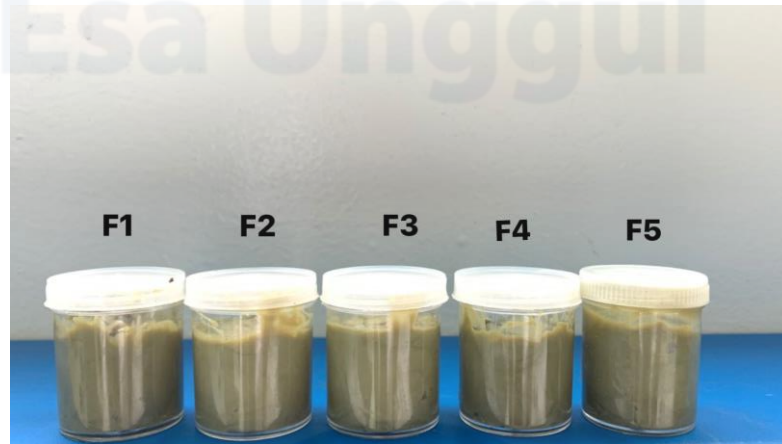
Ekstrak etanol daun turi	$= \frac{10}{100} \times 50 = 5 \text{ gr}$
Asam stearat	$= \frac{4,57}{100} \times 50 = 2,285 \text{ g}$
Trietanolamin	$= \frac{0,43}{100} \times 50 = 0,215 \text{ g}$
Setil alkohol	$= \frac{4,6}{100} \times 50 = 2,3 \text{ g}$
Gliserin	$= \frac{20}{100} \times 50 = 10 \text{ g}$
Metil paraben	$= \frac{0,2}{100} \times 50 = 0,1 \text{ g}$
Propil paraben	$= \frac{0,05}{100} \times 50 = 0,025 \text{ g}$
Vitamin C	$= \frac{0,1}{100} \times 50 = 0,05 \text{ g}$
Aquades	$= 50 - (5 \text{ g} + 2,285 \text{ g} + 0,215 \text{ g} + 2,3 \text{ g} + 10 \text{ g} + 0,1 \text{ g} + 0,025 \text{ g} + 0,05 \text{ g})$ $= 30,025 \text{ g}$

F5 =

Ekstrak etanol daun turi	$= \frac{10}{100} \times 50 = 5 \text{ gr}$
Asam stearat	$= \frac{4,5}{100} \times 50 = 2,25 \text{ g}$
Trietanolamin	$= \frac{0,5}{100} \times 50 = 0,25 \text{ g}$

Setil alkohol	$= \frac{4,6}{100} \times 50 = 2,3 \text{ g}$
Gliserin	$= \frac{20}{100} \times 50 = 10 \text{ g}$
Metil paraben	$= \frac{0,2}{100} \times 50 = 0,1 \text{ g}$
Propil paraben	$= \frac{0,05}{100} \times 50 = 0,025 \text{ g}$
Vitamin C	$= \frac{0,1}{100} \times 50 = 0,05 \text{ g}$
Aquades	$= 50 - (5 \text{ g} + 2,25 \text{ g} + 0,25 \text{ g} + 2,3 \text{ g} + 10 \text{ g} + 0,1 \text{ g} + 0,025 \text{ g} + 0,05 \text{ g})$ $= 30,025 \text{ g}$

Lampiran 5 Hasil sediaan krim





## Lampiran 6 Hasil formula optimum

No.	Asam stearat	TEA	Uji pH	Uji daya sebar	Uji daya lekat	Desirability	
1	90.000	10.000	6.082	6.237	4.127	0.998	<i>Selected</i>
2	93.913	6.087	5.408	5.766	3.825	0.822	

Lampiran 7 Hasil ANOVA fot statistik *Simplex Lattice Design*ANOVA for *Quadratic* model

Respon : pH

Source	Sun of squares	df	Mean square	F-value	p-value	
<b>Model</b>	0.7049	2	0.3525	220.68	<0.0001	<i>significant</i>
<sup>(1)</sup> Linear mixture	0.6923	1	0.6923	433.45	<0.0001	
AB	0.0126	1	0.0126	7.91	0.0375	
<b>Residual</b>	0.0080	5	0.0016			
Lack of fit	0.0019	2	0.0009	0.4637	0.6676	<i>Not significant</i>
Pure error	0.0061	3	0.0020			
<b>Cor total</b>	0.7129	7				

Fit statistik

Std. Dev.	0.0400		R <sup>2</sup>	0.9888
Mean	5.65		Adjusted R <sup>2</sup>	0.9843
C.V. %	0.7072		Predicted R <sup>2</sup>	0.9647
			Adeq precision	32.0536

ANOVA for Linear model

Respon : daya sebar

Source	Sun of squares	df	Mean square	F-value	p-value	
<b>Model</b>	0.3901	1	0.3901	17.60	0.0057	<i>significant</i>
<sup>(1)</sup> Linear mixture	0.3901	1	0.3901	17.60	0.0057	
<b>Residual</b>	0.1330	6	0.0222			



<i>Lack of fit</i>	0.0621	3	0.0207	0.8747	0.5425	<i>Not significant</i>
<i>Pure error</i>	0.0710	3	0.0237			
<b><i>Cor total</i></b>	<b>0.5232</b>	<b>7</b>				

Fit statistik

<i>Std. Dev.</i>	0.1489		$R^2$	0.7457
<i>Mean</i>	5.94		<i>Adjusted R<sup>2</sup></i>	0.7034
<i>C.V. %</i>	2.51		<i>Predicted R<sup>2</sup></i>	0.5620
			<i>Adeq precision</i>	7.9103

ANOVA for *Cubic* model

Respon : daya lekat

<i>Source</i>	<i>Sun of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F-value</i>	<i>p-value</i>	
<b><i>Model</i></b>	3.51	3	1.17	19.79	0.0073	<i>significant</i>
<sup>(1)</sup> <i>Linear mixture</i>	0.9158	1	0.9158	15.47	0.0171	
<i>AB</i>	0.4136	1	0.4136	6.99	0.0574	
<i>AB (A-B)</i>	2.19	1	2.19	36.92	0.0037	
<b><i>Residual</i></b>	<b>0.2368</b>	<b>4</b>	<b>0.0592</b>			
<i>Lack of fit</i>	0.0563	1	0.0563	0.9366	0.4046	<i>Not significant</i>
<i>Pure error</i>	0.1804	3	0.0601			
<b><i>Cor total</i></b>	<b>3.75</b>	<b>7</b>				

Fit statistik

<i>Std. Dev.</i>	0.2433		$R^2$	0.9369
<i>Mean</i>	4.21		<i>Adjusted R<sup>2</sup></i>	0.8895
<i>C.V. %</i>	7.59		<i>Predicted R<sup>2</sup></i>	0.7210
			<i>Adeq precision</i>	10.6926

Lampiran 8 Analisis data SPSS *one sample t-test*

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
Hasil	3	6,0267	,05508	,03180

**One-Sample Test**

Test Value = 6.082

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Hasil	-1,740	2	,224	-,05533	-,1921	,0815

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
hasil	3	6,2067	,07767	,04485

**One-Sample Test**

Test Value = 6.237

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
hasil	-,676	2	,569	-,03033	-,2233	,1626

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
hasil	3	3,8833	,18502	,10682

**One-Sample Test**

Test Value = 4.127

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
hasil	-2,281	2	,150	-,24367	-,7033	,2160

Lampiran 9 Alat dan bahan



Neraca analitik



Lumpang dan alu



pH meter



Oven



Rotary Evaporator



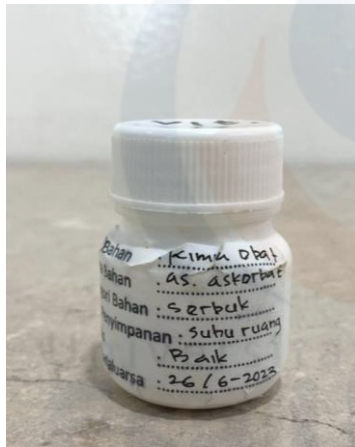
Viskometer



Grinder



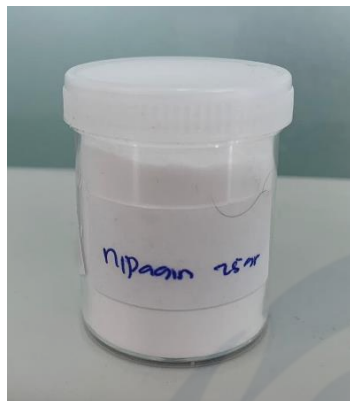
Asam stearat



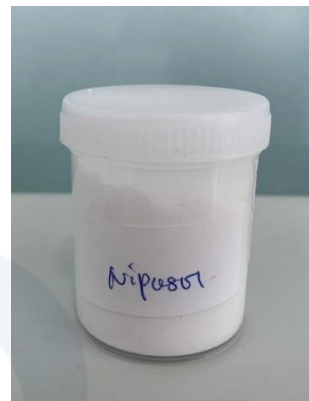
Vitamin C



Setil alkohol



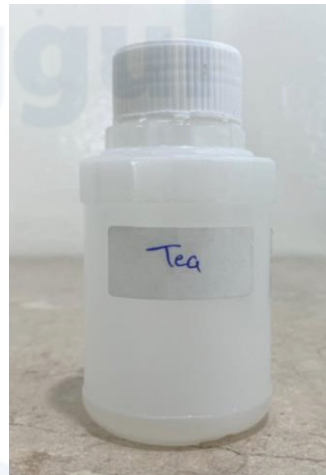
Nipagin/Metil paraben



Nipasol/Propil paraben



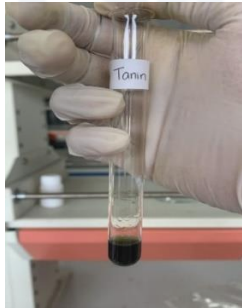
Gliserin



Trietanolamin



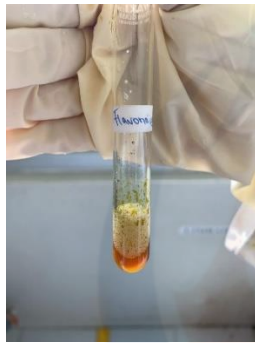
Lampiran 10 Skrining fitokimia



Tanin (positif)



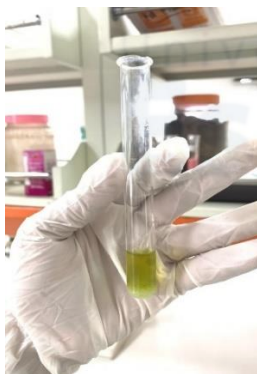
Saponin (Positif)



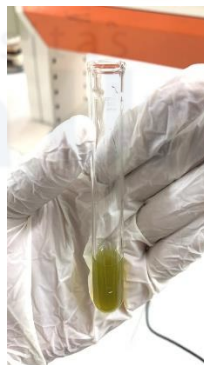
Flavonoid (positif)



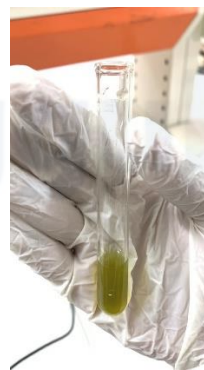
Fenol (positif)



Alkaloid dgn  
mayer  
(positif)



Alkaloid dgn  
Dragendroff  
(negatif)



Alkaloid dgn  
wagner  
(negatif)

Lampiran 11 Dokumentasi lain-lain



Daun turi dikumpulkan



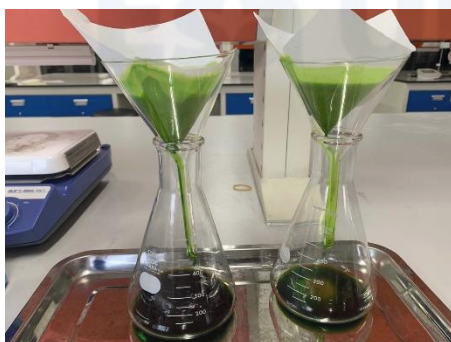
Proses pencucian



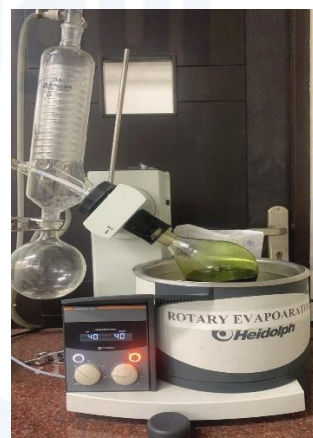
Serbuk simplisia



Maserasi



Proses penyaringan



Proses penguapan pelarut dengan rotary evaporator





Proses waterbath



Ekstrak kental daun turi



Uji viskositas



Uji pH



Uji daya sebar



Uji homogenitas



Formula optimum

Lampiran 12 *Certificate of Analysis* (COA)

Asam stearat

**HASIL PEMERIKSAAN**

Nama Bahan : Acid Stearic Lokal  
 Batch : JT 0024/18 (B 180104-22 W)  
 Ex : Wilfarin (PT. Wilmar Nabati Indonesia)  
 ED : 04-2025  
 Grade : Teknis

Jenis pemeriksaan	Persyaratan usp nf 19	Hasil
Pemerian	Zat padat mengkilat menunjukkan susunan hablur, putih atau kuning pucat, mirip lemak lilin	granul bulat, putih mengkilap
Kelarutan	Praktis tidak larut dalam air, larut dalam kloroform, larut dalam ethanol 95% dan dalam eter	sesuai
Bilangan asam	194-212 ml KOH/gr	204.22 mg KOH/gr
Bilangan sabun	200-220 ml KOH/gr	207.96 mg KOH/gr

Kesimpulan : Memenuhi syarat

Cikarang, 10 – 02 – 2018

Pemeriksa

Aptria Wariski  
Staff QC

Penanggung Jawab



Dra. Tri Hartati  
Apoteker  
SIK.3836/B

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 • SURABAYA : J. Biggen Klatemen No. 19 Telp. (024) 9435272, 9415889 Fax. (024) 9414950  
 • MEDAN : J. Shayanglana No. 45, Yogya Telp. (0274) 543345, 515380 Fax. (0274) 543349  
 • TANGERANG : J. Tidar No. 89, Surabaya Telp. (031) 5322867, 5329057 Fax. (031) 5310465  
 • CIREBON : J. Iskandar Muda no. 40 B, Medan Telp. (061) 4148272, 4523199 Fax. (061) 4525996  
 SUB BRANCH OFFICE : TANGERANG, BOGOR, CIKARANG, CIREBON, TASIKMALAYA, SOLO, PURWOKERTO, TEGAL, MALANG, SIDOARJO, DENPASAR, PALEMBANG, MAKASSAR  
 The National Chemical and Specialty Products

Setil alkohol

# AKÖMA™

## FROM THE HEART

### CERTIFICATE OF ANALYSIS CETYL ALCOHOL

**DESCRIPTION**

**Product:** Cetyl Alcohol 98%  
**INCI Name:** Cetyl Alcohol  
**CAS No:** 36653-82-4  
**EINECS No:** --

**CHARACTERISTICS**

Test	Analysis	Specification
Appearance	Complies	Waxy flakes
Solubility & Clarity (Molten)	Complies	Complies
Colour, (APHA)	5	20 maximum
Acid Value (mg KOH/g)	<0.01	1.0 maximum
Saponification Value (mg KOH/g)	0.20	2.0 maximum
Iodine Value, gI./100g	<0.04	2.0 maximum
Hydroxyl Value (mg KOH/g)	233.0	218 - 238
Moisture Content, %	0.118	0.3 maximum
Solidification Point, °C	49.0	46.0 - 52.0 maximum
Chain Length Distribution (%)		
C14	0.09	3.0 maximum
C16	99.00	95.0 maximum
C18	0.050	3.0 maximum

This product has been tested and passes EP monograph for Cetyl Alcohol

*We confirm that the above is a true copy of the original manufacturer's/supplier's COA.*

*We believe the information herein to be reliable. However, no warranty, express or implied, is made as to its accuracy or completeness, and none is made as to the fitness of this material for any purpose.*

*Akoma International (UK) Ltd shall not be liable for damages to person or property resulting from its use.*

Page 1 of 1

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Tel: +44 (0) 1332 613 967

E-mail: [support@akoma.zendesk.com](mailto:support@akoma.zendesk.com)

*Cetyl Alcohol - COA*





Propil paraben



**Alpha Chemika**  
ISO 9001 Quality System certified Organization  
*House Of Unlimited Chemicals*



ALPHA CHEMIKA, 102, 1st Floor, B Wing, Savgan Heights, RTO Road, Four Bungalow, Andheri (W), Mumbai 400 053. Maharashtra (India)  
Tel: +91 22 65218147 • +91 22 26317055 • +91 22 26330745 • TeleFax : 91-22-26317055 • Mobile : +91 9820 385757 • +91 9769 472001  
Skype ID : tanmay1977 • Email: info@alphachemika.co.in / sales@alphachemika.co.in

**CERTIFICATE OF ANALYSIS**

**Name Of Item :** PROPYL-P-HYDROXY BENZOATE **Formula :** C<sub>10</sub>H<sub>12</sub>O<sub>3</sub>  
(Propyl Paraben)

**M.W. :** 180.21 **Batch No. :**

**CAS NO. :** 94-13-3 **Cat. No. :** AL3848 05000

**Date Of Mfg. :** **Date of Analysis :**

Type Of Test	Standard	Observed
Description	White crystalline powder	White crystalline powder
Assay	99.5 - 100.5%	99.60%
Impurities reacting acid	Passes test	Passes test
Lead (Pb)	<0.001%	0.0008%
Copper (Cu)	<0.0025%	<0.0025%
Zinc (Zn)	<0.0025%	0.002%
Arsenic (As)	<0.0003%	0.0002%
Loss on drying at 60°C/2hrs	<0.5%	0.4%
Sulphated ash	<0.05%	0.048%

**Results :** The above product complies with LR grade

Registered Under Small Scale Industries Maharashtra (India)

Triethanolamin



## Specification

8.22341.5000 Triethanolamine EMPLURA®

Specification		
Assay (GC, area%)	≥ 99.0	% (a/a)
Density (d 20 °C/ 4 °C)	1.122 - 1.125	
Water (K. F.)	≤ 0.30	%
Identity (IR)	passes test	

Due to its specific melting range the product may be solid, liquid, a solidified melt or a supercooled melt.

Dr. Oliver Schramel  
Responsible laboratory manager quality control

This document has been produced electronically and is valid without a signature.



Gliserin



### CERTIFICATE OF ANALYSIS

Nama Bahan : Glycerin PH  
 Batch : J 0373/18  
 (8085038811)  
 Ex : P & G Chemicals, Singapura  
 ED :10/2024  
 Grade : Farma

<i>Jenis Pemeriksaan</i>	<i>Persyaratan FI IV</i>	<i>Hasil</i>
Pemerian	Cairan, jernih, tidak berwarna, tidak berbau, rasa manis diikuti rasa hangat, higroskopik	Sesuai
Kelarutan	Dapat bercampur dengan air dan etanol, praktis tidak larut dalam kloroform dan dalam eter	Sesuai
Identifikasi	Panaskan dengan kalium bisulfat P; terjadi uap merangsang	Positif
pH	5,5 – 7,5	5,8
Index Bias	1,471-1,474	1,472
Susut Pengeringan	≤ 2,0 %	0,00%
Bobot jenis	1,255 g/ml – 1,260 g/ml sesuai dengan kadar 98,0% – 100,0%	1,260 g/mL

=====  
**Kesimpulan : Memenuhi Syarat**