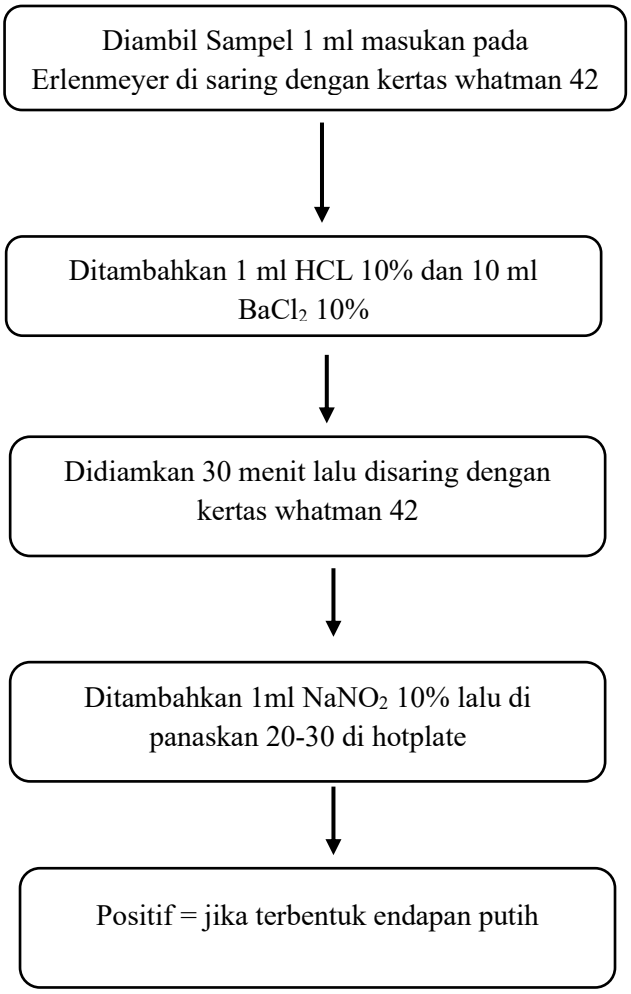
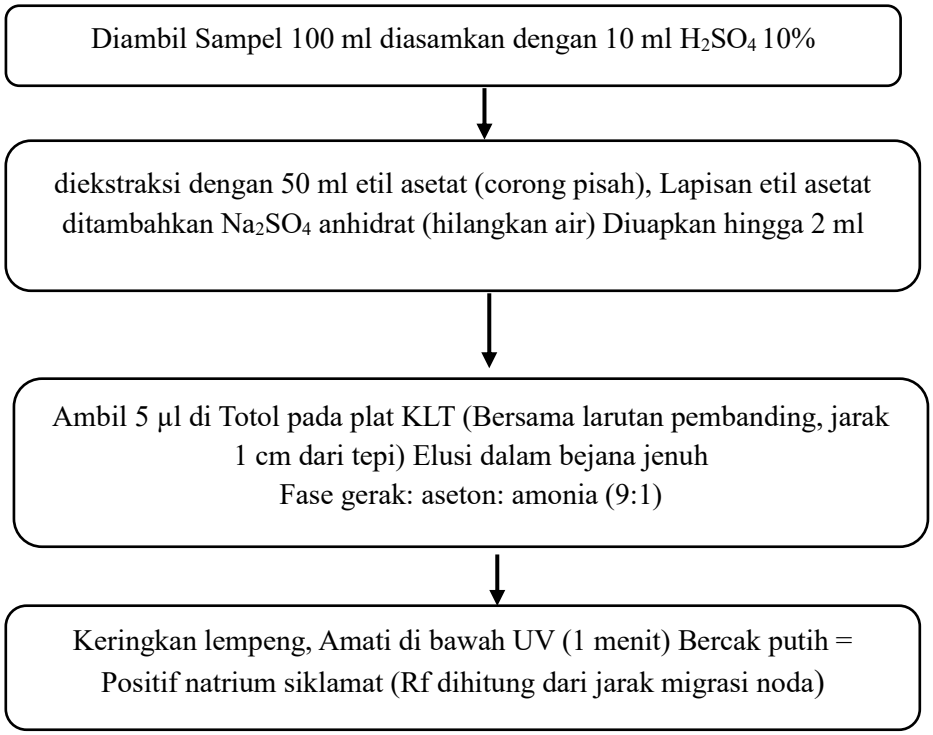
LAMPIRAN

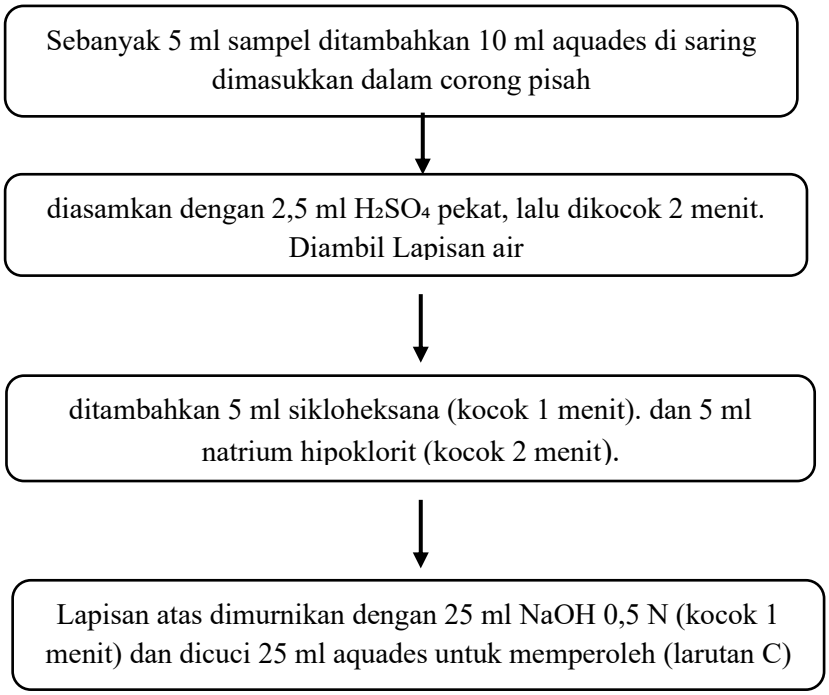
Lampiran 1. Alur pengujian Pengendapan Natrium Siklamat



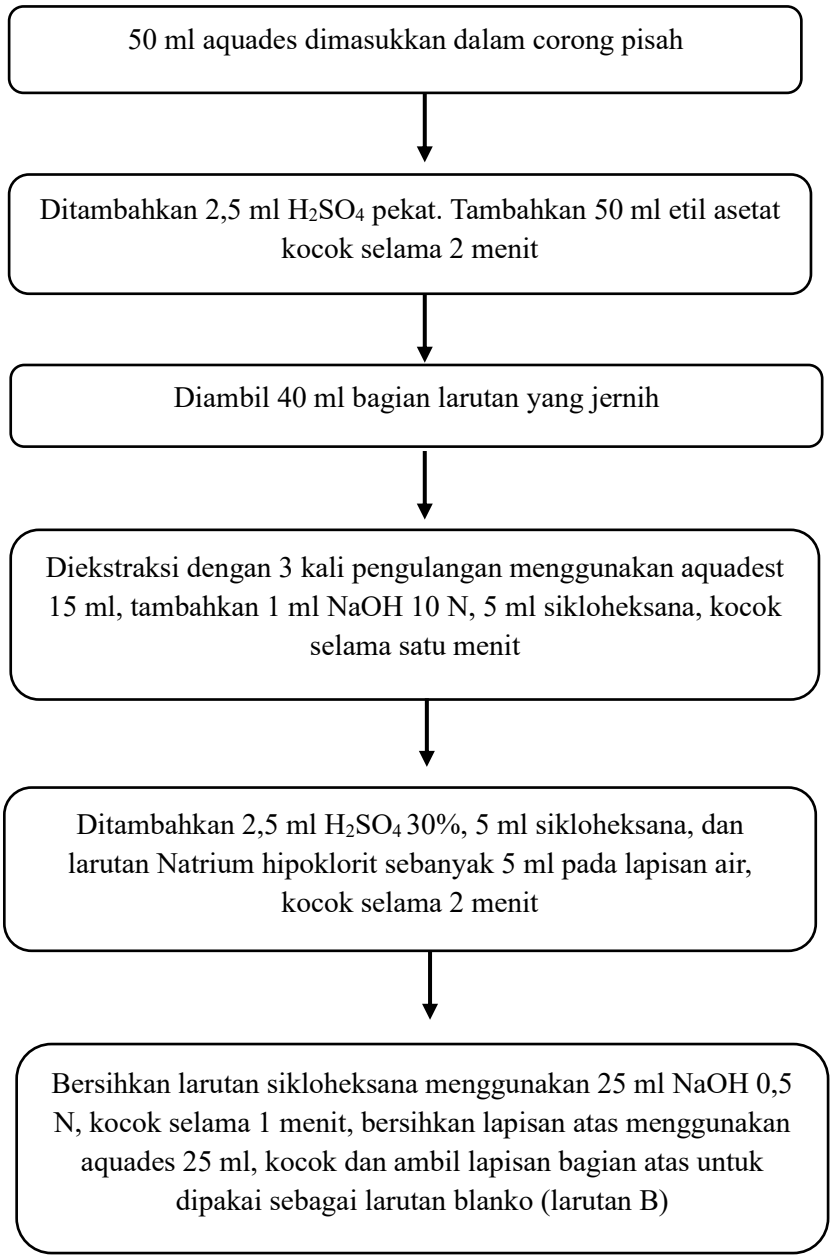
Lampiran 2. Prosedur uji Kromatografi Lapis tipis (KLT)



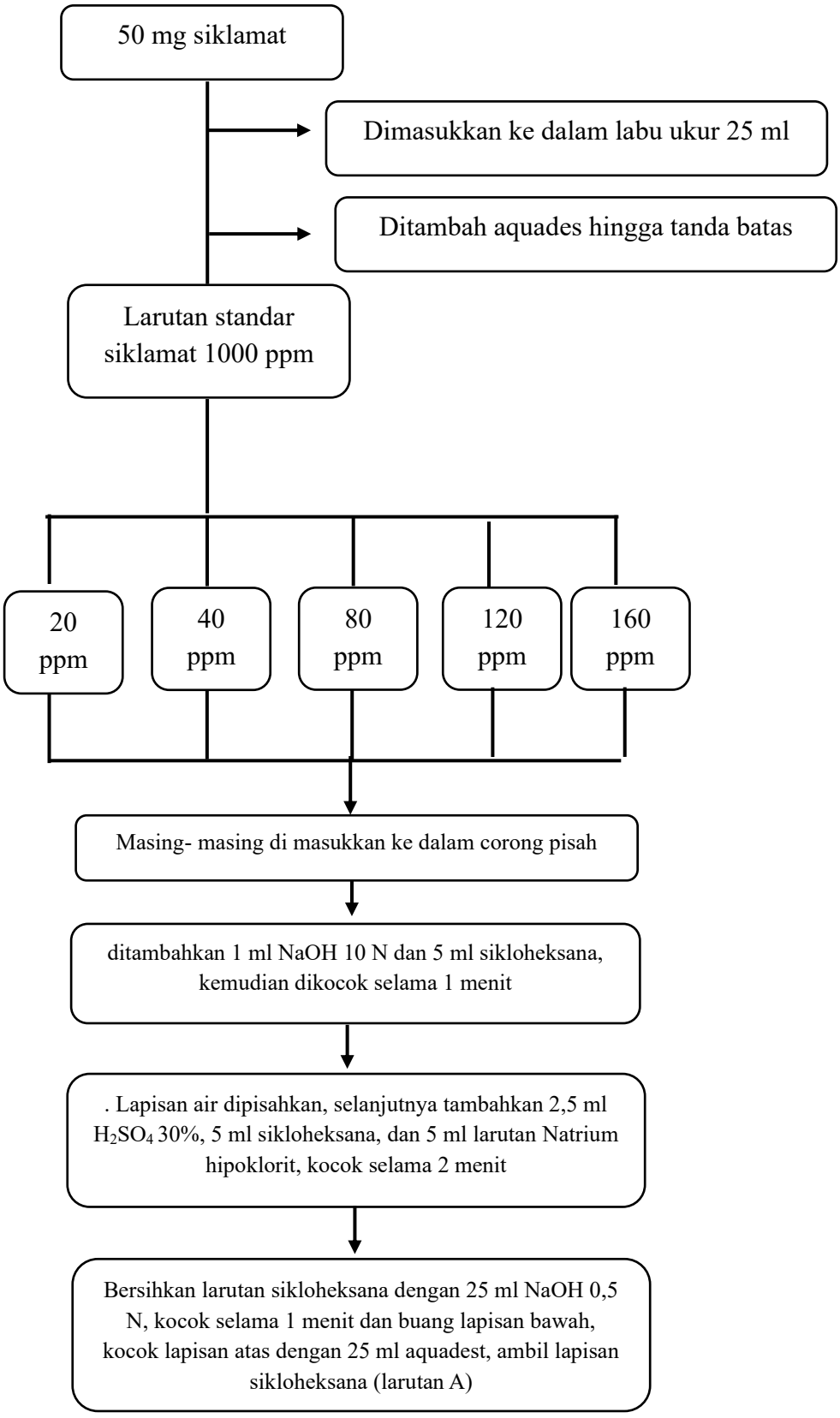
Lampiran 3. Prosedur Pembuatan larutan uji



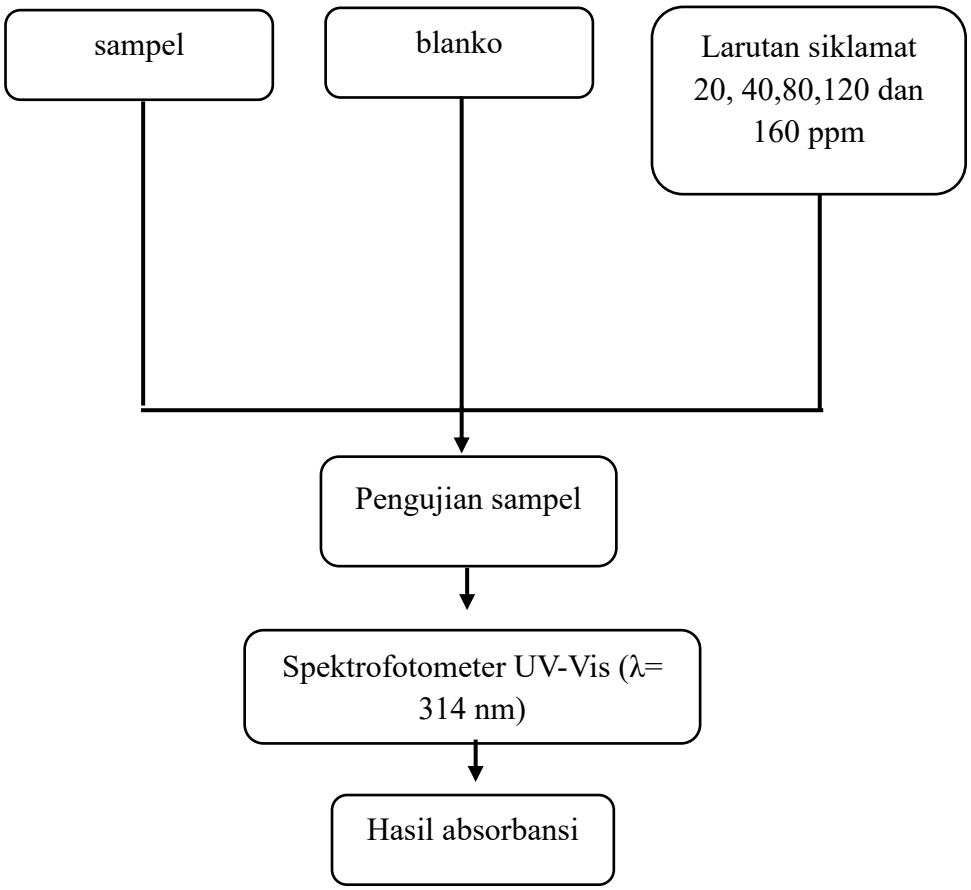
Lampiran 4. Prosedur Pembuatan Larutan Blanko



Lampiran 5. Prosedur Pembuatan Larutan Standar



Lampiran 6. Prosedur Uji Kadar Siklamat



Lampiran 7. Perhitungan Pembuatan Larutan Baku 1000 ppm

Perhitungan:

$$\text{ppm} = \frac{\text{m (mg)}}{\text{V (L)}}$$

$$1000 \text{ ppm} = \frac{\text{m (mg)}}{0{,}05 \text{ L}}$$

$$\text{m (mg)} = 50 \text{ mg}$$

Lampiran 8. Perhitungan Pengeceran Seri Kosentrasi

Pengenceran 20 ppm

$$\text{M1 x V1} = \text{M2 x V2}$$

$$1000 \text{ ppm x V1} = 20 \text{ ppm x } 25 \text{ ml}$$

$$\text{V1} = \frac{500}{1000}$$

$$\text{V1} = 0{,}5 \text{ ml}$$

Pengenceran 40 ppm

$$\text{M1 x V1} = \text{M2 x V2}$$

$$1000 \text{ ppm x V1} = 40 \text{ ppm x } 25 \text{ mL}$$

$$\text{V1} = \frac{1000}{1000}$$

$$\text{V1} = 1 \text{ mL}$$

Pengenceran 80 ppm

$$\text{M1 x V1} = \text{M2 x V2}$$

$$1000 \text{ ppm x V1} = 80 \text{ ppm x } 25 \text{ mL}$$

$$\text{V1} = \frac{2000}{1000}$$

$$\text{V1} = 2 \text{ mL}$$

Pengenceran 120 ppm

$$\text{M1 x V1} = \text{M2 x V2}$$

$$1000 \text{ ppm x V1} = 120 \text{ ppm x } 25 \text{ mL}$$

$$\text{V1} = \frac{3000}{1000}$$

$$\text{V1} = 3 \text{ m}$$

Pengenceran 160 ppm

$$\text{M1 x V1} = \text{M2 x V2}$$

$$1000 \text{ ppm x V1} = 160 \text{ ppm x } 25 \text{ mL}$$

$$\text{V1} = \frac{4000}{1000}$$

$$\text{V1} = 4 \text{ ml}$$

Lampiran 9. Perhitungan nilai Presisi

No	Konsentrasi	Absorbansi	Rata-rata	SD	%RSD
1	80 ppm 1	0, 471	0, 470	0, 001	0,21%
	80 ppm 2	0, 469			
	80 ppm 3	0, 470			

Perhitungan

- SD = $\sqrt{\frac{\sum(x-x)2}{n-1}}$

  = 0,0010

- % RSD = $\frac{SD}{\text{Rata−rata Absorbansi}}$X 100 %

  % RSD = $\frac{0,0010}{0,470}$X 100 %

  =0,21276%

Lampiran 10. Perhitungan nilai Akurasi

No	Konsentrasi	Absorbansi	% *recovery*	Rata-rata % *recovery*
1	20 ppm 1	0.232	94, 63608643%	95,07843917%
	20 ppm 2	0,234	97, 29020284%	
	20 ppm 3	0,231	93, 30902824%	
2	80 ppm 1	0.473	103, 53506562%	102,76156702%
	80 ppm 2	0,468	101, 87756861%	
	80 ppm 3	0,471	102, 87206682%	
3	160 ppm 1	0.770	100, 15660215%	100,59860135%
	160 ppm 2	0,765	100, 65385125%	
	160 ppm 3	0,768	100, 65385125%	

Persamaan Regresi Linear y = 0,00377150x + 0,160614

1. 20 ppm
   - Replikasi ke-1

     y = 0,00377150x + 0,160614

     $y = \frac{0{,}232 - 0{,}160614}{0{,}00377150}$

     x = 18,927 ppm

     % *recovery*: $\frac{18{,}927\ ppm}{20\ \text{ppm}}$ x 100%

     % *recovery* = 94,64%
   - Replikasi ke-2

     y = 0,00377150x + 0,160614

     $y = \frac{0{,}234 - 0{,}160614}{0{,}00377150}$

     x = 19,458 ppm

     % *recovery*: $\frac{19{,}458\ ppm}{20\ \text{ppm}}$ x 100%

     % *recovery* = 97,29%
   - Replikasi ke-3

     y = 0,00377150x + 0,160614

     $y = \frac{0{,}231 - 0{,}160614}{0{,}00377150}$

     x = 18,662 ppm

     % *recovery*: $\frac{18{,}662\ ppm}{20\ \text{ppm}}$ x 100%

     % *recovery* = 93,31%

     Rata-rata

$\frac{94,64\%+\ 97,29\%+\ 93,31\%}{3}$ = 95,08%

2. 80 ppm

- Replikasi ke-1

  y = 0,00377150x + 0,160614

  y = $\frac{0,473-\ 0,160614}{0,00377150}$

  x = 82,828 ppm

  % *recovery*: $\frac{82,828\ ppm}{80\ \text{ppm}}$ x 100%

  % *recovery* = 103,54%

- Replikasi ke-2

  y = 0,00377150x + 0,160614

  y = $\frac{0,468-\ 0,160614}{0,00377150}$

  x = 81,502 ppm

  % *recovery*: $\frac{81,502\ ppm}{80\ \text{ppm}}$ x 100%

  % *recovery* = 101,88%

- Replikasi ke-3

  y = 0,00377150x + 0,160614

  y = $\frac{0,471-\ 0,160614}{0,00377150}$

  x = 82,298 ppm

  % *recovery*: $\frac{82,298\ ppm}{80\ \text{ppm}}$ x 100%

  % *recovery* = 102,74%

- Rata-rata
- $\frac{103,54\%+\ 101,88\%+\ 102,74\%}{3}$ = 102,87%

3. 160 ppm

- Replikasi ke-1

  y = 0,00377150x + 0,160614

  y = $\frac{0,770-\ 0,160614}{0,00377150}$

  x = 161,577 ppm

  % *recovery*: $\frac{161,577\ ppm}{160\ \text{ppm}}$ x 100%

% *recovery* = 100,99%

- Replikasi ke- 2

  y = 0,00377150x + 0,160614

  $y = \frac{0,765 - 0,160614}{0,00377150}$

  x = 160,251 ppm

  % *recovery*: $\frac{160,251\ ppm}{160\ \text{ppm}}$ x 100%

  % *recovery* = 100,16%

- Replikasi ke- 3

  y = 0,00377150x + 0,160614

  $y = \frac{0,768 - 0,160614}{0,00377150}$

  x = 161,046 ppm

  % *recovery*: $\frac{161,046\ ppm}{160\ \text{ppm}}$ x 100%

  % *recovery* = 100,65%

  Rata-rata

  $\frac{100,99\% + 100,16\% + 100,65\%}{3}$ = 100,60%

Lampiran 11. Perhitungan kadar Siklamat pada sampel

- % kadar

$$K = \frac{x\,.\,v\,.\,Fp\,.}{Bs}$$

- **Sampel A**

  - **Replikasi I**

    y = 0,00377150x + 0,160614

    $x = \frac{0,599-0,160614}{0,00377150}$

    x =116,21

    % Kadar= $\frac{116,21x\ 10\ ml\ x\ 2}{5\ ml}$x 100%

    = 464,84 ug/ml/ 464,84 mg/kg

  - **Replikasi II**

    y = 0,00377150x + 0,160614

    x= $\frac{0,611-0,160614}{0,00377150}$

    x=119,39

    % Kadar= $\frac{119,39x\ 10\ ml\ x\ 2}{5\ ml}$x 100%

    = 477,56 ug/ml/ 477,56 mg/kg

  - **Replikasi II**

    y = 0,00377150x + 0,160614

    x = $\frac{0,616-0,160614}{0,00377150}$

    x =120,72

    % Kadar= $\frac{120,72x\ 10\ ml\ x\ 2}{5\ ml}$x 100%

    = 482,88 ug/ml /482,88 mg/kg

    Rata-rata

    $\frac{464,84\ +477,56+\ 482,88}{3}$ = 475,09 mg/kg

Lampiran 12. Perhitungan pada KLT

- Replikasi ke-1

  Baku = $\frac{6,3}{8}$= 0,78

  Sampel A = $\frac{6}{8}$= 0,75

  Sampel B = $\frac{5,9}{8}$= 0,73

  Sampel C = $\frac{5,2}{8}$= 0,65

  Sampel D = –

  Sampel E = –

- Replikasi ke-2

  Baku = $\frac{5}{8}$= 0,62

  Sampel A = $\frac{4,4}{8}$= 0,55

  Sampel B = $\frac{4,5}{8}$= 0,56

  Sampel C = $\frac{4,3}{8}$= 0,53

  Sampel D = –

  Sampel E = $\frac{4,3}{8}$= 0,53

- Replikasi ke-3

  Baku = $\frac{5,7}{8}$= 0,71

  Sampel A = $\frac{5,5}{8}$= 0,68

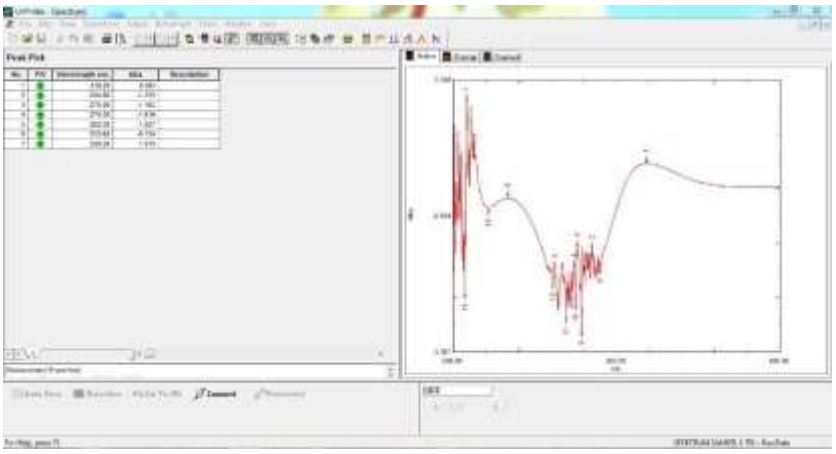
  Sampel B = $\frac{6}{8}$= 0,75

  Sampel C = $\frac{6,3}{8}$= 0,78

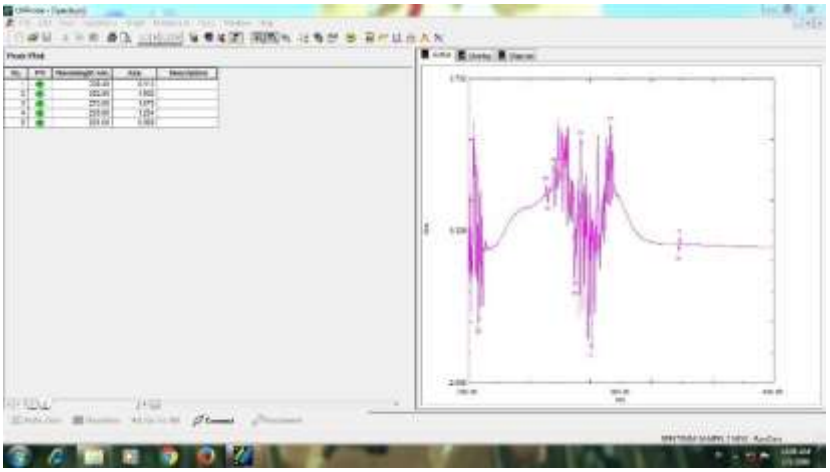
  Sampel D = –

  Sampel E = $\frac{4,3}{8}$= 0,53

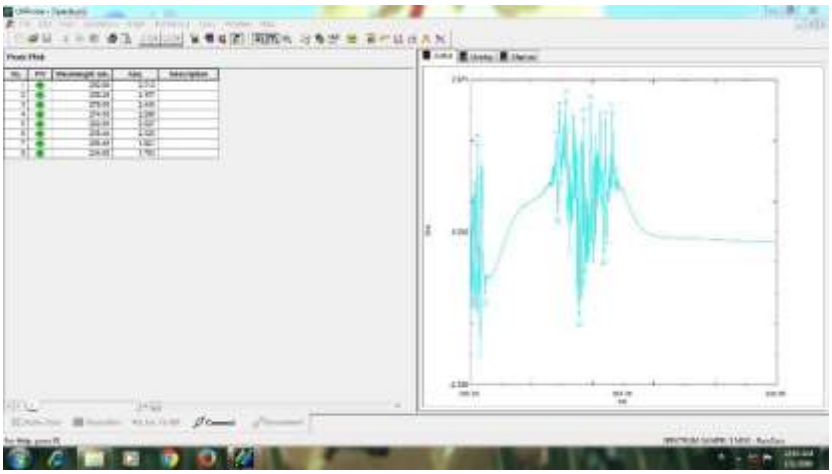
Lampiran 13. Hasil Spektrofotometer UV-Vis



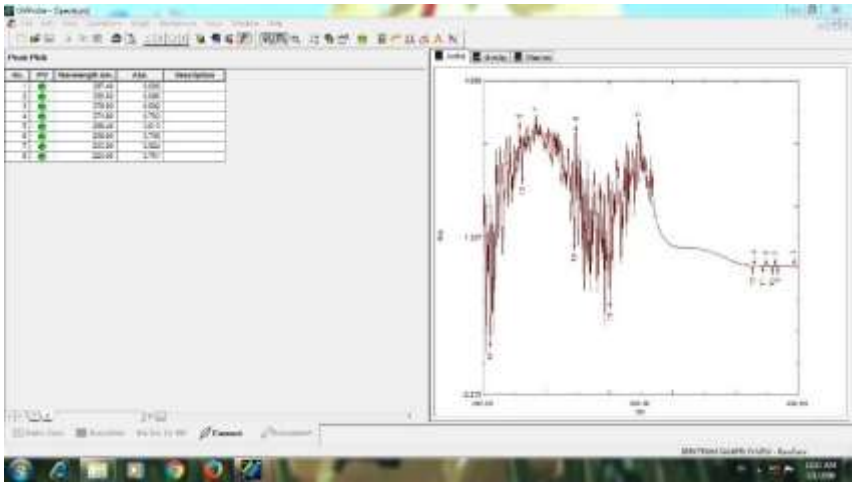
Spektrum sampel A



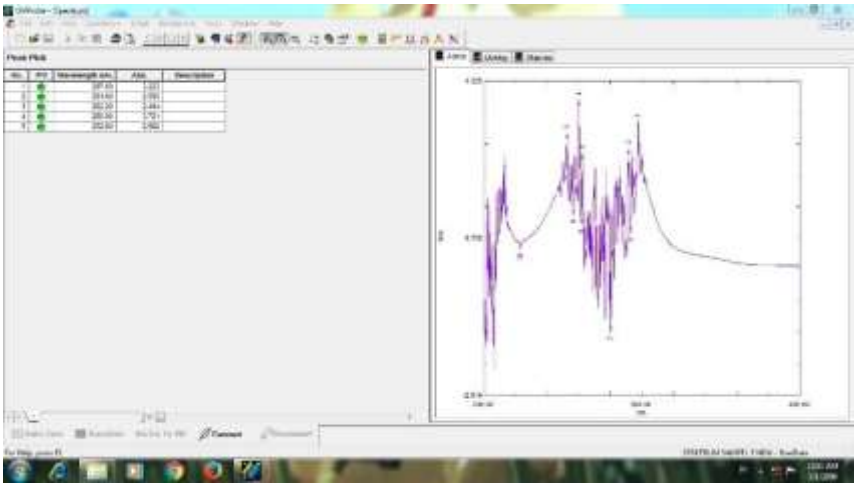
Spektrum sampel B



Spektrum sampel C



Spektrum sampel D



Spektrum sampel E

Lampiran 14. Uji Pengendapan Siklamat



Bahan Yg Digunakan



Alat-Alat Yg Di Gunakan



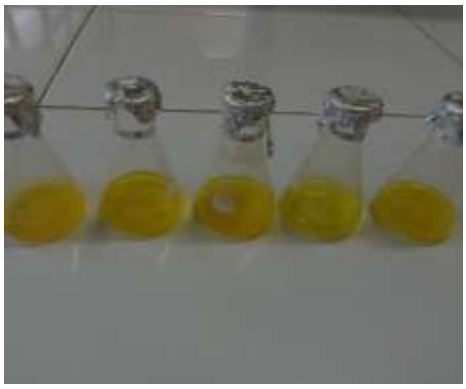
Reagen Yg Digunakan



Proses Penyaringan



Proses Pemanasan



Hasil Setelah Pemanasan

Lampiran 15. Hasil Uji Pengendapan Siklamat

SAMPEL	GAMBAR
SAMPEL A (-)	
SAMPEL B (-)	
SAMPEL C (-)	
SAMPEL D (-)	
SAMPEL E (-)	

Lampiran 16. Uji KLT Pada Siklamat



Bahan Yg Digunakan



Preparasi Sampel



Estraksi Sampel Pada Corong Pisah



Hasil Sampel Yg Telah Di Preparasi

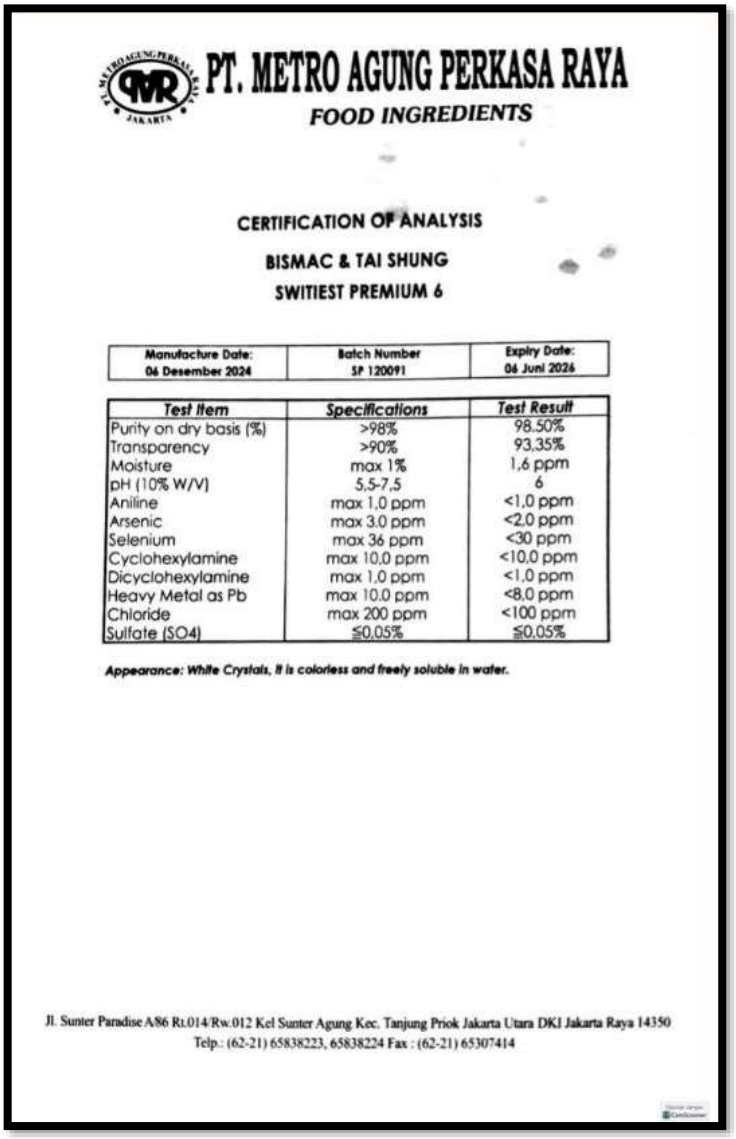


Fase Gerak Yg Digunakan
(Aseton: Ammonia)



Proses Penotolan Pada Plat Klt

Lampiran 17. Sertifikat CoA Bahan



PT. METRO AGUNG PERKASA RAYA

FOOD INGREDIENTS

CERTIFICATION OF ANALYSIS

BISMAC & TAI SHUNG

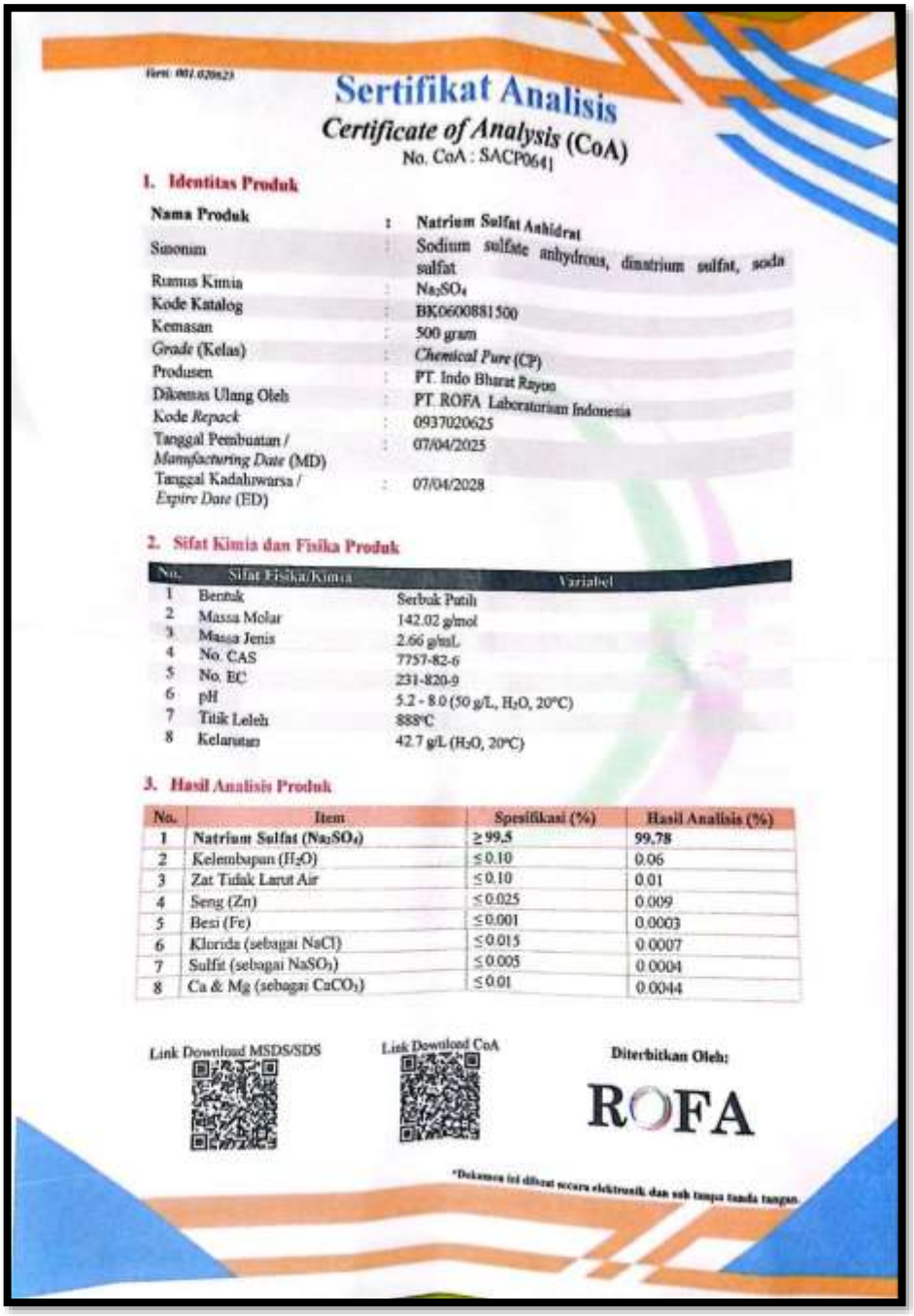
SWITIEST PREMIUM 6

Manufacture Date:	Batch Number	Expiry Date:
06 Desember 2024	SP 120091	06 Juni 2026

Test Item	*Specifications*	*Test Result*
Purity on dry basis (%)	>98%	98.50%
Transparency	>90%	93,35%
Moisture	max 1%	1,6 ppm
pH (10% W/V)	5,5-7,5	6
Aniline	max 1,0 ppm	<1,0 ppm
Arsenic	max 3.0 ppm	<2,0 ppm
Selenium	max 36 ppm	<30 ppm
Cyclohexylamine	max 10,0 ppm	<10,0 ppm
Dicyclohexylamine	max 1,0 ppm	<1,0 ppm
Heavy Metal as Pb	max 10,0 ppm	<8,0 ppm
Chloride	max 200 ppm	<100 ppm
Sulfate (SO4)	≦0,05%	≦0,05%

Appearance: White Crystals, It is colorless and freely soluble in water.

Jl. Sunter Paradise A/86 Rt.014/Rw.012 Kel Sunter Agung Kec. Tanjung Priok Jakarta Utara DKI Jakarta Raya 14350
Telp.: (62-21) 65838223, 65838224 Fax : (62-21) 65307414



form: 001.020623

Sertifikat Analisis

Certificate of Analysis (CoA)

No. CoA : SACP0641

1. Identitas Produk

Nama Produk	:	**Natrium Sulfat Anhidrat**
Sinonim	:	Sodium sulfate anhydrous, disodium sulfat, soda sulfat
Rumus Kimia	:	Na_2SO_4
Kode Katalog	:	BK0600881500
Kemasan	:	500 gram
Grade (Kelas)	:	*Chemical Pure* (CP)
Produsen	:	PT. Indo Bharat Rayon
Dikemas Ulang Oleh	:	PT. ROFA Laboratorian Indonesia
Kode *Repack*	:	0937020625
Tanggal Pembuatan / *Manufacturing Date* (MD)	:	07/04/2025
Tanggal Kadaluwarsa / *Expire Date* (ED)	:	07/04/2028

2. Sifat Kimia dan Fisika Produk

No.	Sifat Fisika/Kimia	Variabel
1	Bentuk	Serbuk Putih
2	Massa Molar	142.02 g/mol
3	Massa Jenis	2.66 g/mL
4	No. CAS	7757-82-6
5	No. EC	231-820-9
6	pH	5.2 - 8.0 (50 g/L, H_2O, 20°C)
7	Titik Leleh	888°C
8	Kelarutan	42.7 g/L (H_2O, 20°C)

3. Hasil Analisis Produk

No.	Item	Spesifikasi (%)	Hasil Analisis (%)
1	**Natrium Sulfat (Na_2SO_4)**	**≥ 99.5**	**99.78**
2	Kelembapan (H_2O)	≤ 0.10	0.06
3	Zat Tidak Larut Air	≤ 0.10	0.01
4	Seng (Zn)	≤ 0.025	0.009
5	Besi (Fe)	≤ 0.001	0.0003
6	Klorida (sebagai NaCl)	≤ 0.015	0.0007
7	Sulfit (sebagai $NaSO_3$)	≤ 0.005	0.0004
8	Ca & Mg (sebagai $CaCO_3$)	≤ 0.01	0.0044

Link Download MSDS/SDS

Link Download CoA

Diterbitkan Oleh:

ROFA

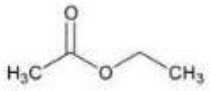
*Dokumen ini dibuat secara elektronik dan sah tanpa tanda tangan.

Office : C/o. Nitiraj Service Centre. P.B.Road, Post: Umbraj, Tal: Karad, Dist: Satara. Pin: 415109.
Factory : 120/A, Wanyachiwadi, Post: Masur, Tal: Karad, Dist: Satara. Pin: 415106. Maharashtra. INDIA.
Phone No : 02164 - 264377 , 264077. **Fax No:** 02164 - 265100.
Email : satyam@satyampetr.com **Website :** www.satyampetro.com

SATYAM Petrochemicals

Certificate of Analysis

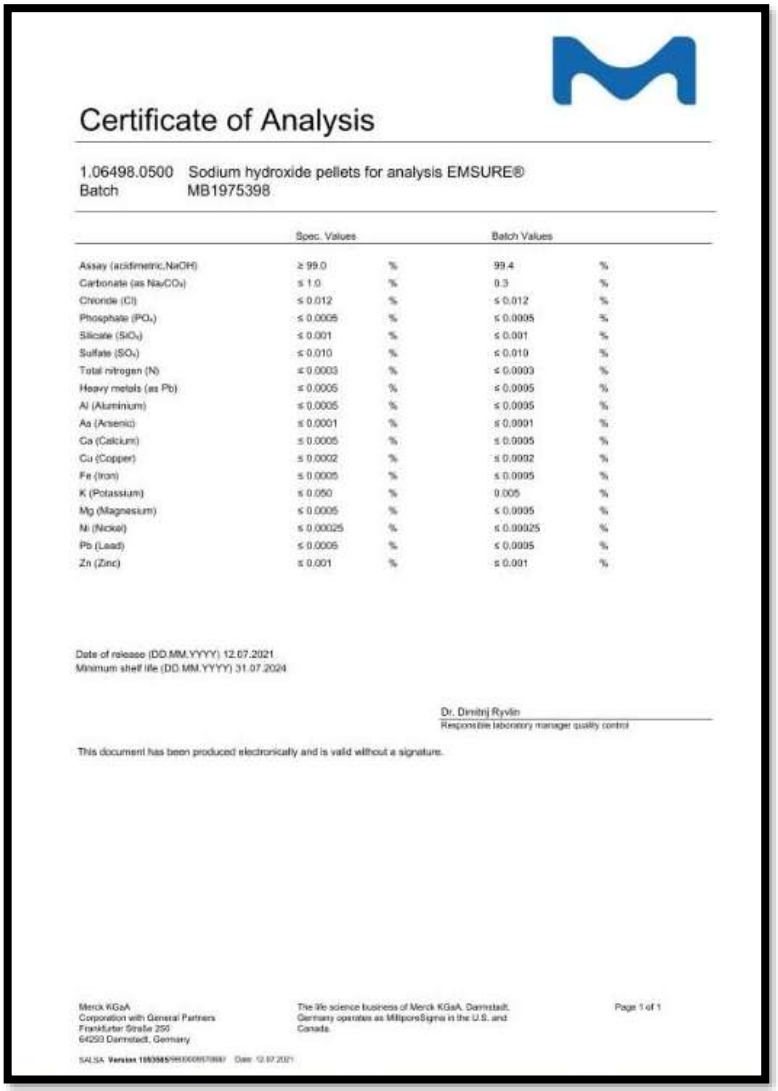
Product: Ethyl Acetate.



Molecular Formula: C4H8O2.

Sr. No.	Parameter	UOM	Specification	Result
1	Colour	APHA	10 (Max)	10 Below
2	Appearance	-	Clear, Colourless Liquid	Clear, Colourless Liquid
3	Water Content	%	0.05 (max)	0.02
4	Acidity as Acetic Acid	%	0.01 (max)	0.0027
5	Alcohol Content	%	0.05 (max)	0.02
6	Density at 27 Degree C	%	0.895 - 0.898	0.896
7	Ester content as Ethyl Acetate by GC	%	99.80 (min)	99.90
8	Residue on evaporation	%	0.01 (max)	0.005
9	Distillation range at 760mm of Hg.			
	i) Initial Boiling Point.	°C	76.0 (min)	75.70
	ii) Dry Point.	°C	78.5 (max)	78.00

Form: Liquid.



Certificate of Analysis

1.06498.0500 Sodium hydroxide pellets for analysis EMSURE®
Batch MB1975398

	Spec. Values		Batch Values	
Assay (acidimetric,NaOH)	≥ 99.0	%	99.4	%
Carbonate (as Na_2CO_3)	≤ 1.0	%	0.3	%
Chloride (Cl)	≤ 0.012	%	≤ 0.012	%
Phosphate (PO_4)	≤ 0.0005	%	≤ 0.0005	%
Silicate (SiO_3)	≤ 0.001	%	≤ 0.001	%
Sulfate (SO_4)	≤ 0.010	%	≤ 0.010	%
Total nitrogen (N)	≤ 0.0003	%	≤ 0.0003	%
Heavy metals (as Pb)	≤ 0.0005	%	≤ 0.0005	%
Al (Aluminium)	≤ 0.0005	%	≤ 0.0005	%
As (Arsenic)	≤ 0.0001	%	≤ 0.0001	%
Ca (Calcium)	≤ 0.0005	%	≤ 0.0005	%
Cu (Copper)	≤ 0.0002	%	≤ 0.0002	%
Fe (Iron)	≤ 0.0005	%	≤ 0.0005	%
K (Potassium)	≤ 0.050	%	0.005	%
Mg (Magnesium)	≤ 0.0005	%	≤ 0.0005	%
Ni (Nickel)	≤ 0.00025	%	≤ 0.00025	%
Pb (Lead)	≤ 0.0005	%	≤ 0.0005	%
Zn (Zinc)	≤ 0.001	%	≤ 0.001	%

Date of release (DD.MM.YYYY) 12.07.2021
Minimum shelf life (DD.MM.YYYY) 31.07.2024

Dr. Dimitrij Ryvlin
Responsible laboratory manager quality control

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

Merck KGaA
Corporation with General Partners
Frankfurter Straße 250
64293 Darmstadt, Germany

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Page 1 of 1

SALSA Version 1053585/9910000570880 Date: 12.07.2021