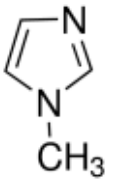
3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
1-Methylimidazole - ReagentPlus® , 99%

Product Number:	**M50834**
Batch Number:	**SHBQ2304**
Brand:	ALDRICH
CAS Number:	616-47-7
MDL Number:	MFCD00005292
Formula:	C4H6N2
Formula Weight:	82.10 g/mol
Quality Release Date:	10 NOV 2022



Test	Specification	Result
Appearance (Color)	Colorless to Yellow	Colorless
Appearance (Form)	Liquid	Liquid
Infrared Spectrum	Conforms to Structure	Conforms
Purity (GC)	≥ 98.5 %	99.6 %
Color Test	≤ 400 APHA	< 15 APHA



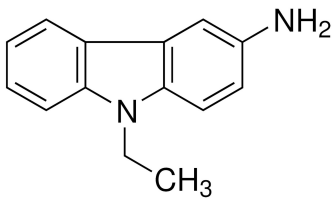
Larry Coers, Director
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name : **3-Amino-9-ethylcarbazole ≥95% (HPLC), powder**
Product Number : **A5754-BULK**
Batch Number : **SLCR4535**
CAS Number : 132-32-1
MDL Number : MFCD00004964
Storage Temperature : Cooler/Refrigerated
Molecular Formula : $C_{14}H_{14}N_2$
Formula Weight : 210.27 g/mol
Recommended Retest Date : Jan 2026
Quality Release Date : 04 Jan 2024



Test	Specification	Result
Appearance (Color)	Faint Beige to Dark Beige to Dark Brown	Dark Beige-Brown
Appearance (Form)	Powder	Powder
Solubility (Color)	Faint Yellow to Dark Yellow to Dark Brown	Dark Brown
Solubility (Turbidity) 50 mg/mL, EtOH:HOAc (2:1)	Clear to Hazy	Slightly Hazy
Solvent Content (by NMR)	≤ 3 %	1 %
1H NMR Spectrum	Conforms to Structure	Conforms
Carbon	72.0 - 88.0 %	77.8 %
Nitrogen	12.0 - 16.6 %	12.8 %
Purity (HPLC)	≥ 95 %	98 %

J. Yasomanee

Jagodige Yasomanee, Supervisor
Quality Assurance
St. Louis, Missouri
US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name :	**Deoxyribonucleic acid sodium salt from calf thymus Type I, fibers**
Product Number :	**D1501-50MG**
Batch Number :	**0000372269**
Source Batch :	SLBW1517
CAS Number :	73049-39-5
MDL Number :	MFCD00130922
Storage Temperature :	Cooler/Refrigerated
Date Retested :	26 Apr 2022
Recommended Retest Date :	Apr 2026
Quality Release Date :	11 MAY 2018

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Fibers	Fibers
Solubility (Color)	Colorless to Faint Yellow	Colorless
Solubility (Turbidity) 2 mg/ml in H2O	Clear to Hazy	Slightly Hazy
Ratio 260/280nm	≥ 1.8	1.9
A260 units/mg solid One unit will yield an A260 of 1.0 in 1.0 ml of 15 mM NaCl and 1.5 mM Sodium Citrate, pH 7.0 (1 cm light path). One mg of DNA is equivalent to approx. 20 A260 units.	≥ 16.0	17.5
Sodium (Na)	6 - 13 %	6 %
Phosphorus (P)	5 - 9 %	9 %
% Protein (Lowry)	≤ 10	1
Suitability Tested and found suitable as a substrate for DNAse	Suitable	Suitable

Brian Dulle, Supervisor
Quality Assurance
St. Louis, Missouri
US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale.
Version Number: 01 Doc 1175141

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

Certificate of Analysis

1.32371.0001 Anaerotest® for microbiology
Batch HC454209

	Spec. Values	Batch Values
Performance test	Anaerobic: The reaction zone is gradually decolorizing from blue to white during 6-9 hours. Aerobic: Reverse colour change from white to blue within 20 minutes.	passes test

Date of release (DD.MM.YYYY) 02.09.2024
Expiry date (DD.MM.YYYY) 31.01.2026

Dr. Lukas Mechler
Responsible laboratory manager quality control

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

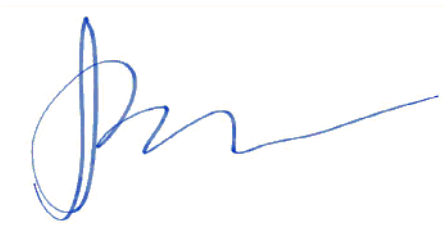
3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name :
Anti-Pig IgG (whole molecule)–FITC antibody produced in rabbit affinity isolated antibody, buffered aqueous solution

Product Number :	**F1638-2ML**
Batch Number :	**0000381743**
Source Batch :	0000309354
MDL Number :	MFCD00162751
Storage Temperature :	-20°C
Recommended Retest Date :	Feb 2027
Quality Release Date :	29 Feb 2024

Test	Specification	Result
Appearance (Form)	Liquid	Liquid
Appearance (Turbidity)	Clear	Clear
Appearance (Color)	Yellow	Yellow
IgG Concentration (OD 280nm)	3,0 - 6,5 mg/mL	4,8 mg/mL
F/P Molar Ratio	2,5 - 6,5	3,7
IF-Cells	Pig Periferal Blood Lymphocytes	Pig Peiferal Blood Lymphocytes
IF-Titer	1:32-1:64	1:64



Anna Bendersky, Quality Control Manager
Quallity Control
Israel
IL

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

Certificate of Analysis

1.11962.0010 Azomethine H GR for analysis (reagent for the determination of boron)
Batch K55374062

	Spec. Values		Batch Values	
Identity (IR-spectrum)	conforms		conforms	
Spec. Absorptivity A 1%/1cm (236 nm; 0.05 %; 1 cm; buffer solution pH 5.1)	≥ 1200		1325	
Loss on Drying (105 °C)	≤ 2.0	%	0.4	%
Suitability for photometric (determination of boron)	conforms		passes test	

Date of release (DD.MM.YYYY) 31.07.2023
Minimum shelf life (DD.MM.YYYY) 31.07.2028

Dr. Michael Memmel
Responsible laboratory manager quality control

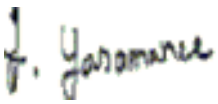
This document has been produced electronically and is valid without a signature.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name :	**Phosphate buffered saline powder, pH 7.4, for preparing 1 L solutions**
Product Number :	**P3813-10PAK**
Batch Number :	**0000360068**
Source Batch :	0000299070
MDL Number :	MFCD00131855
Quality Release Date :	05 Jul 2024

Test	Specification	Result
Appearance (Color)	White	White
Appearance	Powder	Powder
Weight	9.07 - 10.00	9.44
in pouch (Grams)		
pH	7.2 - 7.6	7.5
Dissolution Time	≤ 5 min	3 min
Note	----------	----------
One pouch, when dissolved in one liter of distilled or deionized water, will yield 0.01 M phosphate buffered saline (0.138 M NaCl; 0.0027 M KCl), pH 7.4. Dissolution time and pH test results are from one pouch in 1L of distilled or deionized water.		



Jagodige Yasomanee, Supervisor
Quality Assurance
St. Louis, Missouri
US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

Certificate of Analysis

1.02066.1000 Calcium carbonate precipitated for analysis EMSURE® Reag. Ph Eur
Batch A1944366

	Spec. Values		Batch Values	
Assay (complexometric; calculated on dried substance)	98.5 - 100.5	%	99.9	%
Identity	passes test		passes test	
Substances insoluble in acetic acid	≤ 0.2	%	≤ 0.2	%
Substances insoluble in hydrochloric acid	≤ 0.005	%	≤ 0.005	%
Chloride (Cl)	≤ 0.005	%	≤ 0.005	%
Sulfate (SO_4)	≤ 0.03	%	≤ 0.03	%
Heavy metals (as Pb)	≤ 0.002	%	≤ 0.002	%
Total nitrogen (N)	≤ 0.001	%	≤ 0.001	%
Al (Aluminium)	≤ 0.005	%	≤ 0.005	%
As (Arsenic)	≤ 0.0004	%	≤ 0.0004	%
Ba (Barium)	passes test		passes test	
Cu (Copper)	≤ 0.0005	%	≤ 0.0005	%
Fe (Iron)	≤ 0.001	%	≤ 0.001	%
K (Potassium)	≤ 0.005	%	≤ 0.005	%
Mg (Magnesium)	≤ 0.02	%	≤ 0.02	%
Na (Sodium)	≤ 0.2	%	≤ 0.2	%
Pb (Lead)	≤ 0.0005	%	≤ 0.0005	%
Sr (Strontium)	≤ 0.1	%	≤ 0.1	%
Magnesium and alkali metals	≤ 1.5	%	≤ 1.5	%
Particle size (d 50)	about 14 µm		passes test	
Loss on drying (200 °C)	≤ 1.0	%	< 0.2	%

Corresponds to Reag. Ph Eur

Date of release (DD.MM.YYYY) 23.01.2023
Minimum shelf life (DD.MM.YYYY) 31.12.2027

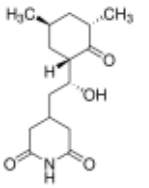
Claudia Wiegand
Responsible laboratory manager quality control

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

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
Cycloheximide - from microbial, ≥94% (TLC)



Product Number:	**C7698**
Batch Number:	**MKCW1620**
Brand:	SIGMA
CAS Number:	66-81-9
MDL Number:	MFCD00082346
Formula:	C15H23NO4
Formula Weight:	281.35 g/mol
Storage Temperature:	Store at 2 - 8 ℃
Quality Release Date:	06 JUN 2024
Recommended Retest Date:	JUN 2029

Test	Specification	Result
Appearance (Color)	White to Off White	White
Appearance (Form)	Powder	Powder
Infrared Spectrum	Conforms to Structure	Conforms
Carbon	63.5 - 64.5 %	63.9 %
Nitrogen	4.7 - 5.3 %	4.9 %
Purity (TLC)	≥ 94 %	> 95 %
Solubility (Color)	Colorless to Light Yellow	Almost Colorless
Solubility (Turbidity) 50 mg/mL, EtOH	Clear to Hazy	Clear
Recommended Retest Period 5 Years	----------	----------

Larry Coers, Director
Quality Control
Milwaukee, WI US

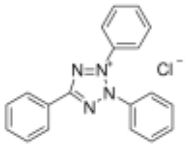
Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
2,3,5-Triphenyltetrazolium chloride - ≥98.0% (HPLC)

Product Number:	**T8877**
Batch Number:	**BCCJ6488**
Brand:	SIGMA
CAS Number:	298-96-4
Formula:	C19H15N4.Cl
Formula Weight:	334,80 g/mol
Storage Temperature:	Store at 2 - 8 °C
Quality Release Date:	21 NOV 2022
Recommended Retest Date:	OCT 2028



Test	Specification	Result
Appearance (Color)	White to Yellow	White
Appearance (Form)	Powder	Powder
Purity (HPLC)	≥ 98.0 %	99.9 %
Solubility (Color)	Faint Yellow to Yellow	Faint Yellow
Solubility (Turbidity) 50 mg/ml in Water	Clear to Slightly Hazy	Clear
Carbon Content 68.16 % (Theory)		67.52 %
Nitrogen Content 16.74 % (Theory)		16.71 %
Infrared Spectrum	Conforms to Structure	Conforms

Dr.Reinhold Schwenninger
Quality Assurance
Buchs,Switzerland CH

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name :
Anti-Guinea Pig IgG (whole molecule)–Peroxidase antibody produced in goat affinity isolated antibody, buffered aqueous solution

Product Number :	**A7289-BULK**
Batch Number :	**0000380635**
MDL Number :	MFCD00162368
Storage Temperature :	-20°C
Quality Release Date :	21 Nov 2024

Test	Specification	Result
Appearance (Turbidity)	Clear	Clear
Appearance (Color)	Colorless to Light Brown	Faint Brown
Appearance (Form)	Liquid	Liquid
Direct ELISA Titer-Guinea Pig IgG 1:10,000 - 1:30,000 working dilution versus 5 µg/ml guinea pig IgG.	10000 - 30000	17720
Protein Content Conjugate concentration prior to the addition of BSA Report results	mg/mL	0.5 mg/mL

Rebecca Mueller

Rebecca Mueller, Supervisor
Quality Assurance
St. Louis, Ewing
US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

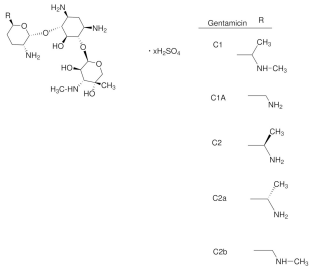
The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name :
Gentamicin solution 50 mg/mL in deionized water, liquid, 0.1 µm filtered, BioReagent, suitable for cell culture

Product Number :	**G1397-10ML**
Batch Number :	**0000375953**
Source Batch :	0000375945
CAS Number :	1405-41-0
MDL Number :	MFCD00270181
Storage Temperature :	+2°C to +8°C
Expiry Date :	Sep 2026
Quality Release Date :	15 Sep 2024



Test	Specification	Result
Appearance (Form)	Liquid	Liquid
Appearance (Turbidity)	Clear	Clear
Appearance (Color)	Colorless to Light Yellow	Colorless
Osmolality	≥ 0 mOs/kg	135 mOs/kg
Potency Gentamicin	50 - 60 mg/mL	52 mg/mL
Endotoxin Level at 1ml/L	≤ 0.5 EU/ml	< 0.1 EU/ml
Cell Line	Hep-2 Human Cells	Hep-2 Human Cells
Cell Culture Test percent of control	≥ 50 %	108 %



Anna Bendersky, Quality Control Manager
Quallity Control
Israel
IL

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

Certificate of Analysis

1.09293.0100 KOVACS' indole reagent for microbiology
Batch HX33397393

	Spec. Values	Batch Values
Indole formation (Escherichia coli ATCC 25922 (WDCM 00013))	+	+
Indole formation (Proteus vulgaris ATCC 8427)	+	+
Indole formation (Enterobacter aerogenes ATCC 13048)	-	-

Tested in DEV-Tryptophan broth art. no. 1.10694. (after incubation 24 hrs.; 35 °C aerobic).

Date of release (DD.MM.YYYY) 13.03.2024
Expiry date (DD.MM.YYYY) 31.01.2027

Dr. Lukas Mechler
Responsible laboratory manager quality control

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

Certificate of Analysis

1.03979.0500 Meat extract dry, granulated, for microbiology
Batch VM1023279

	Spec. Values		Batch Values	
Appearance	Lightly brownishyellow granulate		Lightly brownishyellow granulate	
pH-value (5 %; water)	6.0 - 7.5		6.6	
Total nitrogen (N) (Kjeldahl)	11.5 - 12.5	%	11.7	%
Sulfated ash (800 °C)	≤ 18.0	%	11.5	%
Loss on Drying (105 °C)	≤ 6.0	%	1.9	%
Amino nitrogen (as N)	3.5 - 4.5	%	4.5	%
Nitrite (NO_2)	passes test		passes test	
Suitability for microbiology	passes test		passes test	
Identity (NIR)	passes test		passes test	

Date of release (DD.MM.YYYY) 02.06.2022
Expiry date (DD.MM.YYYY) 26.12.2026

Stefanie Fischer
Responsible laboratory manager quality control

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

Certificate of Analysis

1.24542.0000 Nicotinamide adenine dinucleotide free acid for biochemistry NAD
Batch K55233042

	Spec. Values		Batch Values	
Assay (β-NAD, enzymatically with ADH; calc. on anhydrous substance)	≥ 95	%	97	%
Assay (spectrophotometrically)	≥ 95.0	%	98.4	%
Identity (IR-spectrum)	passes test		passes test	
Appearance	White to almost white, fine powder eventuel slightly yellowish.		passes test	
pH (10 g/l, water)	2.5 - 3.0		2.9	
Absorption maximum $\lambda_{max.}$ (buffer pH 7.0)	259 - 261	nm	259	nm
Spec. Absorptivity A1%/1cm ($\lambda_{max.}$; 0,01 g/l; buffer pH 7.0; calc. on anhydrous substance)	255 - 270		267	
Water (according to Karl Fischer)	≤ 7.0	%	2.2	%

Minimum shelf life (DD.MM.YYYY) 30.06.2026

Dr. Michael Memmel
Responsible laboratory manager quality control

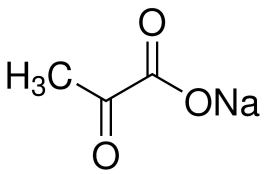
This document has been produced electronically and is valid without a signature.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

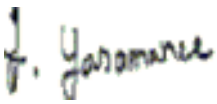
Certificate of Analysis

Product Name :
Sodium pyruvate powder, BioReagent, suitable for cell culture, suitable for insect cell culture, ≥99%

Product Number :	**P5280-25G**
Batch Number :	**0000394680**
Source Batch :	0000350165
CAS Number :	113-24-6
MDL Number :	MFCD00002586
Storage Temperature :	+2°C to +8°C
Molecular Formula :	$C_3H_3NaO_3$
Formula Weight :	110.04 g/mol
Recommended Retest Date :	Jul 2027
Quality Release Date :	03 Jul 2024



Test	Specification	Result
Appearance (Color)	White to Faint Yellow	Off White
Appearance (Form)	Powder	Powder
Solubility (Color)	Colorless to Faint Yellow	Colorless
Solubility (Turbidity)	Clear	Clear
100 mg/mL, H2O		
Proton NMR Spectrum	Conforms to Structure	Conforms
Heavy Metal	<= 20 ppm	<= 20 ppm
As Lead		
Titration with HClO4	≥ 99 %	100 %
Cell Culture Test	Pass	Pass
Insect Cell Test	Pass	Pass



Jagodige Yasomanee, Supervisor
Quality Assurance
St. Louis, Dekalb
US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigma-aldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name :	**Sodium dodecyl sulfate 92.5-100.5% based on total alkyl sulfate content basis**
Product Number :	**L5750-500G**
Batch Number :	**0000281198**
Source Batch :	SLCN6314
CAS Number :	151-21-3
MDL Number :	MFCD00036175
Molecular Formula :	$C_{12}H_{25}NaO_4S$
Formula Weight :	288.38 g/mol
Recommended Retest Date :	Oct 2026
Quality Release Date :	11 Jul 2022

Test	Specification	Result
Appearance (Color)	White to Off White	White
Appearance (Form)	Powder	Powder
Solubility (Color)	Colorless to Faint Yellow	Colorless
Solubility (Turbidity)	Clear to Slightly Hazy	Clear
200 mg/mL, H2O		
Water (by Karl Fischer)	≤ 3 %	1 %
Sodium (Na)	7.6 - 8.3 %	7.9 %
as is		
Purity by Titration	92.5 - 100.5 %	94.6 %
Based on total alkyl sulfate content, As is		
Purity (GC)	≥ 65 %	69 %
Lauryl sulfate, Sodium salt		

J. Yasomanee

Jagodige Yasomanee, Supervisor
Quality Assurance
St. Louis, Missouri
US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchase must determine the suitability of the product for its particular use. See reverse side of website or packing slip for additional terms and conditions of sale

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding.
However, all of the information in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com

Certificate of Analysis

Certificate of Analysis ID:	**1001810002_HC439498_EN**
Producer and client:	**Merck KGaA, Frankfurter Str. 250, 64293 Darmstadt, Germany**
Test laboratory:	**Merck KGaA Qualitätskontrolle für mikrobiologische Produkte Frankfurter Str. 250, 64293 Darmstadt, Germany**
Sample identification:	**Oxidase for the detection of cytochrome oxidase in microorganisms** **Bactident®**
Ordering number:	**1.00181.0002**
Lot number:	**HC439498**
Sample ID:	**201542478**
Accreditation:	DAkkS Deutsche Akkreditierungsstelle D-PL-15185-01-00
Test method:	**DIN EN ISO 11133:2020** **Performance testing of reagents:** Qualitative method for confirmation media and reagents
Date of analysis:	2024/11/07
Date of release:	2024/11/18
Minimum shelf life:	2025/10/31
Composition (g/l):	The reaction zone of a test strip contains: N,N-dimethyl-1,4-phenylene diammonium chloride 0.1 µmol; 1-naphthol 1.0 µmol.
Application:	For the testing of cytochrome oxidase in microorganisms from different materials.
Storage:	Store tightly closed in a cool dry place at +2 °C to +8 °C.

The reported results refer exclusively to the specified medium, see Certificate of Analysis ID.

Certificate of Analysis

Microbiological Performance

Test strain	Cytochrome oxidase reaction	
	Specification	Lot value
Pseudomonas aeruginosa ATCC® 10145 [WDCM 00025]	positive	positive
Pseudomonas aeruginosa ATCC® 27853 [WDCM 00025]	positive	positive
Pseudomonas aeruginosa ATCC® 9027 [WDCM 00026]	positive	positive
Pseudomonas fluorescens ATCC® 13525 [WDCM 00115]	positive	positive
Vibrio parahaemolyticus NCTC 10885 [WDCM 00185]	positive	positive
Aeromonas hydrophila ATCC® 7966 [WDCM 00063]	positive	positive
Escherichia coli ATCC® 8739 [WDCM 00012]	negative	negative
Escherichia coli ATCC® 25922 [WDCM 00013]	negative	negative
Escherichia coli ATCC® 11775 [WDCM 00090]	negative	negative
Escherichia coli DSM 19683 [WDCM 00179]	negative	negative
Cronobacter sakazakii ATCC® 29544 [WDCM 00214]	negative	negative
Cronobacter muytjensii ATCC® 51329 [WDCM 00213]	negative	negative
Serratia marcescens ATCC® 14756	negative	negative

Reaction time: After approx. 20 to 60 seconds compare with the colour scale

Release: Culture medium released by Approving Officer or delegate LS-SC-PCDQS6

L. Mechler

Dr. Lukas Mechler

Responsible Manager of LS-SC-PCDQS6 (Test Laboratory D-PL-15185-01-00)

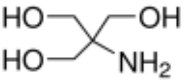
Certificate of analysis revision history:

Certificate version	Date	Status	Reason for version
01	2024/11/18	effective	Initial version

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
Trizma® base – BioXtra, pH 10.5–12.0 (1 M in H_2O), ≥99.9% (titration)



Product Number:	**T6791**
Batch Number:	**SLCH3836**
Brand:	SIGMA
CAS Number:	77-86-1
MDL Number:	MFCD00004679
Formula:	C4H11NO3
Formula Weight:	121.14 g/mol
Quality Release Date:	22 SEP 2020
Recommended Retest Date:	APR 2026

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Solubility (Color)	Colorless	Colorless
Turbidity 1M in H2O at 20 deg C	≤ 10.0 NTU	0.6 NTU
Loss on Drying 110 deg C	≤ 0.5 %	0.1 %
Chloride (Cl)	≤ 0.005 %	< 0.001 %
Sulfate (SO4)	≤ 0.005 %	< 0.001 %
Residue on ignition (Ash) SO4, 900 deg C	≤ 0.01 %	0.00 %
Insoluble Matter	≤ 0.005 %	0.000 %
Arsenic (As)	< = 0.0001%	< = 0.0001%
Aluminum (Al)	≤ 0.0005 %	< 0.0005 %
Bismuth (Bi)	≤ 0.0005 %	< 0.0005 %
Lead (Pb)	≤ 0.0005 %	< 0.0005 %
Barium (Ba)	≤ 0.0005 %	< 0.0005 %
Cadmium (Cd)	≤ 0.0005 %	< 0.0005 %
Cobalt (Co)	≤ 0.0005 %	< 0.0005 %
Copper (Cu)	≤ 0.0005 %	< 0.0005 %
Strontium (Sr)	≤ 0.0005 %	< 0.0005 %
Zinc (Zn)	≤ 0.0005 %	< 0.0005 %

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Number: **T6791**
Batch Number: **SLCH3836**

Test	Specification	Result
Potassium (K)	≤ 0.005 %	< 0.005 %
Calcium (Ca)	≤ 0.001 %	< 0.001 %
Chromium (Cr)	≤ 0.0005 %	< 0.0005 %
Magnesium (Mg)	≤ 0.0005 %	< 0.0005 %
Manganese (Mn)	≤ 0.0005 %	< 0.0005 %
Iron (Fe)	≤ 0.0005 %	< 0.0005 %
Lithium (Li)	≤ 0.0005 %	< 0.0005 %
Molybdenum (Mo)	≤ 0.0005 %	< 0.0005 %
Sodium (Na)	≤ 0.005 %	< 0.005 %
Nickel (Ni)	≤ 0.0005 %	< 0.0005 %
A260 UV Absorption (1 M in H_2O)	≤ 0.025	0.004
A280 UV Absorption (1 M in H_2O)	≤ 0.020	0.005
pH 1 M in water, at 20 Deg C	10.5 - 12.0	11.0
Titration with H_2SO_4 (Anhydrous)	≥ 99.9 %	99.9 %

Brian Dulle, Supervisor
Quality Assurance
St. Louis, Missouri US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Armored RNA®

Enterovirus

For Research Use Only.
Not for use in diagnostic procedures.

REF 42050
LOT 36915
2027-09-18
250 µL (50 assays)

-30 °C -15 °C

Storage

Storage Conditions	Store frozen until ready for use. After opening, stable at 2-8°C for six months.
Storage Buffer	TSM III (10mM Tris, 100mM NaCl, 1mM $MgCl_2$, 0.1% gelatin, 0.3% Microcide III, pH 7.0)

Background

Armored RNA® is a ribonuclease-resistant, pseudo-viral particle consisting of a target RNA and viral coat proteins (DuBois, 1999) that can serve as a robust RNA standard or control. It is stable in plasma for at least 11 months at 4°C or 30 days at 37°C (Pasloske, 1998; WalkerPeach, 1999). The RNA can be liberated from the particles through standard extraction methods or by heat lysing at 75°C for 3 minutes.

Packaged Enterovirus Sequence (from 5'UTR region)

Rotbart, 1990

TGAGCTACAT AAGAATCCTC **CGGCCCCTGA ATG**CGGCTAA TCCCAACCTC

Schwab, 1995

GGGGCAGGTG GTCACAAACC AGTGATTGGC CTGTCGTAAC GCGCAAGTCC

GTGGCGGAAC CGACTACTTT GGGTGTCCGT GTTTCCTTTT ATTTTATTGT

Rotbart, 1990

GGCTGCTTAT GGTGACAATC ACAGATTGTT ATCATAAAGC GAA**TTGGATT**

GGCCATCCGG TGAAAGTGAG ATTCATTATC TATCTGTTTG CTGGATTCGC

Schwab,1995

TCCATTGAGT GTG

Commonly used amplification primer binding regions are highlighted for polio virus (type I Sabin), coxsackievirus A and coxsackievirus B (Schwab, *et al.*, 1995 and Rotbart, 1990). The Schwab primer sites result in PCR product of 195 base pairs (Schwab, *et al.*, 1995, bolded). The Rotbart primer sites result in product of 153 base pairs (Rotbart, 1990, boxed).

Recommended Usage for Endpoint RT-PCR Detection Assays

1. Amplification and Detection Control Only: Incubate 5 µL of Armored RNA at 75°C for 3 minutes. Quick spin to collect volume. Use the 5 µL of lysed Armored RNA as template in RT-PCR. Perform gel detection per your lab's protocol.

Asuragen®, Inc.
2150 Woodward St., Suite 100
Austin, TX 78744
USA

Approval Signatures

Performed By: _____ Date: 08 Oct 24
Quality Control

Reviewed By: Catherine Provencher Date: 14 Oct 24
Quality Assurance

Certificate of Analysis

1.32371.0001 Anaerotest® for microbiology
Batch HC454209

	Spec. Values	Batch Values
Performance test	Anaerobic: The reaction zone is gradually decolorizing from blue to white during 6-9 hours. Aerobic: Reverse colour change from white to blue within 20 minutes.	passes test

Date of release (DD.MM.YYYY) 02.09.2024
Expiry date (DD.MM.YYYY) 31.01.2026

Dr. Lukas Mechler
Responsible laboratory manager quality control

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

Certificate of Analysis

Certificate of Analysis ID:	**1001810002_HC439498_EN**
Producer and client:	**Merck KGaA, Frankfurter Str. 250, 64293 Darmstadt, Germany**
Test laboratory:	**Merck KGaA Qualitätskontrolle für mikrobiologische Produkte Frankfurter Str. 250, 64293 Darmstadt, Germany**
Sample identification:	**Oxidase for the detection of cytochrome oxidase in microorganisms** **Bactident®**
Ordering number:	**1.00181.0002**
Lot number:	**HC439498**
Sample ID:	**201542478**
Accreditation:	DAkkS Deutsche Akkreditierungsstelle D-PL-15185-01-00
Test method:	**DIN EN ISO 11133:2020** **Performance testing of reagents:** Qualitative method for confirmation media and reagents
Date of analysis:	2024/11/07
Date of release:	2024/11/18
Minimum shelf life:	2025/10/31
Composition (g/l):	The reaction zone of a test strip contains: N,N-dimethyl-1,4-phenylene diammonium chloride 0.1 µmol; 1-naphthol 1.0 µmol.
Application:	For the testing of cytochrome oxidase in microorganisms from different materials.
Storage:	Store tightly closed in a cool dry place at +2 °C to +8 °C.

The reported results refer exclusively to the specified medium, see Certificate of Analysis ID.

Certificate of Analysis

Microbiological Performance

Test strain	Cytochrome oxidase reaction	
	Specification	Lot value
Pseudomonas aeruginosa ATCC® 10145 [WDCM 00025]	positive	positive
Pseudomonas aeruginosa ATCC® 27853 [WDCM 00025]	positive	positive
Pseudomonas aeruginosa ATCC® 9027 [WDCM 00026]	positive	positive
Pseudomonas fluorescens ATCC® 13525 [WDCM 00115]	positive	positive
Vibrio parahaemolyticus NCTC 10885 [WDCM 00185]	positive	positive
Aeromonas hydrophila ATCC® 7966 [WDCM 00063]	positive	positive
Escherichia coli ATCC® 8739 [WDCM 00012]	negative	negative
Escherichia coli ATCC® 25922 [WDCM 00013]	negative	negative
Escherichia coli ATCC® 11775 [WDCM 00090]	negative	negative
Escherichia coli DSM 19683 [WDCM 00179]	negative	negative
Cronobacter sakazakii ATCC® 29544 [WDCM 00214]	negative	negative
Cronobacter muytjensii ATCC® 51329 [WDCM 00213]	negative	negative
Serratia marcescens ATCC® 14756	negative	negative

Reaction time: After approx. 20 to 60 seconds compare with the colour scale

Release: Culture medium released by Approving Officer or delegate LS-SC-PCDQS6

L. Mechler

Dr. Lukas Mechler

Responsible Manager of LS-SC-PCDQS6 (Test Laboratory D-PL-15185-01-00)

Certificate of analysis revision history:

Certificate version	Date	Status	Reason for version
01	2024/11/18	effective	Initial version