

SAFETY DATA SHEET

Version 6.14 Revision Date 05/06/2025 Print Date 05/07/2025

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Potassium persulfate

Product Number : 379824 Brand : Aldrich

Index-No. : 016-061-00-1 CAS-No. : 7727-21-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption

(40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The

product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by

MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.

3050 SPRUCE ST ST. LOUIS MO 63103 UNITED STATES

Telephone : +1 314 771-5765 Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-

527-3887 CHEMTREC (International) 24

Hours/day; 7 Days/week

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing solids : Category 3

Acute toxicity (Oral) : Category 4

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Skin irritation : Category 2

Eye irritation : Category 2A

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Specific target organ toxicity - single exposure

: Category 3 (Respiratory system)

Short-term (acute) aquatic hazard

: Category 3

Other hazards

None known.

GHS label elements

Hazard pictograms







Signal Word : Danger

Hazard Statements : H272 May intensify fire; oxidizer.

H302 Harmful if swallowed. H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or

breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H402 Harmful to aquatic life.

Precautionary Statements : **Prevention:**

P210 Keep away from heat.

P220 Keep/Store away from clothing/ combustible

materials.

P221 Take any precaution to avoid mixing with

combustibles.

P261 Avoid breathing dust.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this

product.

P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing must not be allowed

out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face

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protection.

P285 In case of inadequate ventilation wear respiratory protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. P302 + P352 IF ON SKIN: Wash with plenty of soap and

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Potassium persulfate	7727-21-1*	>= 90 - <= 100	-

^{*} Indicates that the identifier is a CAS No.

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

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General advice : First aiders need to protect themselves.

Show this material safety data sheet to the doctor in

attendance.

If inhaled : After inhalation: fresh air. Call in physician.

In case of skin contact : In case of skin contact: Take off immediately all

contaminated clothing. Rinse skin with water/ shower.

Consult a physician.

In case of eye contact : After eye contact: rinse out with plenty of water.

Call in ophthalmologist. Remove contact lenses.

If swallowed : After swallowing: immediately make victim drink

water (two glasses at most).

Consult a physician.

Most important symptoms and effects, both acute and delayed

: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in

section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing

media

: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing

media

For this substance/mixture no limitations of

extinguishing agents are given.

Specific hazards during

fire fighting

: Container explosion may occur under fire conditions.

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

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Hazardous combustion

products

: Sulfur oxides

Potassium oxides

Specific extinguishing

methods

: No data available

Further information : Suppress (knock down) gases/vapors/mists with a

water spray jet.

Prevent fire extinguishing water from contaminating

surface water or the ground water system.

Special protective equipment for fire-

fighters

: Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe

distance or by wearing suitable protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:

Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation.

Evacuate the danger area, observe emergency

procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

Environmental precautions

: Do not let product enter drains.

Methods and materials for containment and

cleaning up

: Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7

and 10).

Take up carefully. Dispose of properly. Clean up

affected area.

Avoid generation of dusts.

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Advice on protection against fire and explosion

: Keep away from open flames, hot surfaces and

sources of ignition.

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

Further information on : Tightly closed.

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storage conditions Keep locked up or in an area accessible only to

qualified or authorized persons.

Do not store near combustible materials.

Storage class : 5.1B, Oxidizing hazardous materials

Recommended storage

temperature

: Recommended storage temperature see product label.

Further information on

storage stability

: Moisture sensitive.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Potassium persulfate	7727-21-1	TWA	0.1 mg/m3 (Persulphate)	ACGIH

Engineering measures : No data available

Personal protective equipment

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory

protection are based on the following standards: DIN

EN 143, DIN 14387 and other accompanying

standards relating to the used respiratory protection

system.

Recommended Filter

type:

: Filter type P2

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material : Nitrile rubber Break through time : 480 min Glove thickness : 0.11 mm : Full contact Protective index

: KCL 741 Dermatril® L Manufacturer

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Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Splash contact

Manufacturer : KCL 741 Dermatril® L

Remarks : This recommendation applies only to the product

stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-

36124 Eichenzell, Internet: www.kcl.de).

Eye protection : Use equipment for eye protection tested and

approved under appropriate government standards

such as NIOSH (US) or EN 166(EU).

Safety glasses

Skin and body protection : protective clothing

Hygiene measures : Immediately change contaminated clothing. Apply

preventive skin protection. Wash hands and face

after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid

Color : white

Odor : odorless

Odor Threshold : Not applicable

pH : 2.5 - 4.5 (77 °F / 25 °C)

Concentration: 27 g/l

Melting point : 212 °F / 100 °C

Boiling point/boiling range : No data available

Flash point : Not applicable

Evaporation rate : No data available

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MILLIPORE

Burning rate : No data available

Self-ignition : $> 1112 \, ^{\circ}\text{F} / > 600 \, ^{\circ}\text{C}$

Method: DIN 51794 does not ignite

Upper explosion limit / Upper flammability limit

: No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : < 0.1 hPa (77 °F / 25 °C)

Method: OECD Test Guideline 104

Relative vapor density : 9.33

(Air = 1.0)

Relative density : 1.39 (68 °F / 20 °C)

Method: Regulation (EC) No. 440/2008, Annex, A.3

Density : 2.477 g/cm3

Solubility(ies)

Water solubility : 52.77 g/l soluble (68 °F / 20 °C)

pH: 3.8

Method: Regulation (EC) No. 440/2008, Annex, A.6

Partition coefficient: n-

octanol/water

: Not applicable for inorganic substances

Autoignition temperature : not combustible

Decomposition temperature

: 338 °F / 170 °C

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Flow time : No data available

Explosive properties : Method: Explosive properties

Not classified as explosive.

Oxidizing properties : The substance or mixture is classified as oxidizing

with the category 3.

Molecular weight : 270.32 g/mol

Particle characteristics

Particle size : No data available

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SECTION 10. STABILITY AND REACTIVITY

Reactivity : No data available

: The product is chemically stable under standard Chemical stability

ambient conditions (room temperature) .

Possibility of hazardous

reactions

: Risk of ignition or formation of inflammable gases or

vapours with:

Exothermic reaction with:

Reducing agents

combustible substances Sodium hydroxide Potassium hydroxide alkali hydroxides

Water

Conditions to avoid : Exposure to moisture.

Heat.

no information available

Incompatible materials : No data available

products

Hazardous decomposition : In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 700 mg/kg

(OECD Test Guideline 401)

Remarks: (in analogy to similar compounds)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

LC50 Inhalation - Rat - male and female - 4 h - >= 2.95 mg/l - dust/mist

(US-EPA)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

Inhalation: Irritating to respiratory system.

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

(US-EPA)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

Skin corrosion/irritation

Remarks: Causes skin irritation.

(Regulation (EC) No 1272/2008, Annex VI)

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Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation.

(OECD Test Guideline 405)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

Freund's complete adjuvant test - Guinea pig

Result: positive

(OECD Test Guideline 406)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Germ cell mutagenicity

Test Type: Ames test

Test system: S. typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: disodium peroxodisulphateTest

Type: unscheduled DNA synthesis assay

Test system: rat hepatocytes

Method: US-EPA Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium peroxodisulphate

Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Intraperitoneal Method: OECD Test Guideline 474

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium peroxodisulphate

Test Type: unscheduled DNA synthesis assay

Species: Rat

Cell type: Liver cells Application Route: Oral

Method: OECD Test Guideline 486

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium peroxodisulphate

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is

identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is

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on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Repeated dose toxicity - Rat - male - Oral - 90 Days - NOAEL (No observed adverse effect level) - 91 mg/kg - LOAEL (Lowest observed adverse effect level) - 200 mg/kg Remarks: (in analogy to similar products)

RTECS: SE0400000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Potassium persulfate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 76.3

mg/l

End point: mortality Exposure time: 96 h Test Type: static test Analytical monitoring: yes

GLP: yes

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

Toxicity to daphnia and

other aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 120 mg/l

End point: Immobilization Exposure time: 48 h Test Type: static test Analytical monitoring: yes

GLP: yes

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following

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substances: Ammonium peroxodisulphate

Toxicity to algae/aquatic

plants

: ErC50 (Phaeodactylum tricornutum): 320 mg/l

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201

GLP: yes

Remarks: (in analogy to similar products) The value is given in analogy to the following substances: Ammonium peroxodisulphate

Toxicity to microorganisms : EC50 (Pseudomonas putida): 36 mg/l

Exposure time: 18 h

Test Type: static test

GLP: yes

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Persistence and degradability

Components:

Potassium persulfate:

Biodegradability : Remarks: The methods for determining

biodegradability are not applicable to inorganic

substances.

Bioaccumulative potential

Components:

Potassium persulfate:

octanol/water

Partition coefficient: n- : Remarks: Not applicable for inorganic substances

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part

82 Protection of Stratospheric Ozone - CAA Section

602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste material must be disposed of in accordance

with the national and local regulations. Leave

chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product

itself.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 1492

Proper shipping name Potassium persulphate

Class Packing group III

Division 5.1 - Oxidizing substances Labels

Packing instruction (cargo: 563

aircraft)

Packing instruction : 559

(passenger aircraft)

IMDG-Code

: UN 1492 UN number

Proper shipping name : POTASSIUM PERSULPHATE

Class : 5.1 Packing group : III Labels : 5.1 EmS Code : F-A, S-Q Marine pollutant no

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National regulation

49 CFR Road

UN/ID/NA number : UN 1492

Proper shipping name Potassium persulfate

Class : 5.1 Packing group : III

Labels : Division 5.1 - Oxidizing substances

: 140 ERG Code Marine pollutant no

Poison Inhalation Hazard : No

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Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 : Reactivity Hazard Hazards Acute Health Hazard

SARA 313 : This material does not contain any chemical

components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by

SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

Potassium persulfate 7727-21-1

Pennsylvania Right To Know

Potassium persulfate 7727-21-1

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Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

The ingredients of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA -International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA -Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the

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European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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