

SAFETY DATA SHEET

Version 6.15 Revision Date 05/05/2025 Print Date 05/06/2025

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Chloroacetic acid

Product Number : 402923 Brand : Sigma-Aldrich Index-No. : 607-003-00-1 CAS-No. : 79-11-8

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

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)

Acute toxicity (Oral) : Category 3

Acute toxicity : Category 3

Sigma-Aldrich - 402923

Page 1 of 17



(Inhalation)

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1B

Serious eye damage : Category 1

Specific target organ

toxicity - single exposure

: Category 3 (Respiratory system)

Short-term (acute)

aquatic hazard

: Category 1

Other hazards

None known.

GHS label elements

Hazard pictograms









Signal Word Danger

Hazard Statements : H301 + H311 + H331 Toxic if swallowed, in contact

with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

Precautionary Statements: **Prevention:**

P260 Do not breathe 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.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye

protection/ face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call

a POISON CENTER/ doctor. Rinse mouth.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do

NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with

water/ shower.

P304 + P340 + P310 IF INHALED: Remove person to

fresh air and keep comfortable for breathing.

Immediately call a POISON CENTER/ doctor. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. P362 Take off contaminated clothing and wash before

reuse.

P391 Collect spillage.

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 |
|-------------------|----------------------|-----------------------|-----------------|
| chloroacetic acid | 79-11-8* | >= 90 - <= 100 | - |

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

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

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. Immediately call in

physician.

If breathing stops: immediately apply artificial

respiration, if necessary also oxygen.

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

contaminated clothing. Rinse skin with water/ shower.

Call a physician immediately.

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

Immediately call in ophthalmologist.

Remove contact lenses.

If swallowed: give water to drink (two glasses at

Sigma-Aldrich - 402923

Page 3 of 17



most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

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

: Water Foam

Carbon dioxide (CO2)

Dry powder

Unsuitable extinguishing

media

: For this substance/mixture no limitations of

extinguishing agents are given.

Specific hazards during

fire fighting

: Combustible.

Vapors are heavier than air and may spread along

floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or

vapours possible in the event of fire.

Hazardous combustion

products

: Carbon oxides

Hydrogen chloride gas

Specific extinguishing

methods

: No data available

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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 generation and inhalation of dusts in all

circumstances.

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.

: Tightly closed.

Avoid generation of dusts.

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

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

Further information on storage conditions

Dry.

Keep in a well-ventilated place.

Keep locked up or in an area accessible only to

qualified or authorized persons.

: 6.1A, Combustible, acute toxic Cat. 1 and 2 / very Storage class

toxic hazardous materials

: Recommended storage temperature see product label. Recommended storage

Sigma-Aldrich - 402923

Page 5 of 17



temperature

Packaging material : Suitable material: Poly Drum

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|-------------------|---------|---|--|---------|
| chloroacetic acid | 79-11-8 | TWA (Inhalable fraction and vapor) | 0.5 ppm | ACGIH |
| | | TWA | 0.5 ppm | US WEEL |

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 A-(P3)

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 : Latex gloves
Break through time : 480 min
Glove thickness : 0.6 mm
Protective index : Full contact

Manufacturer : Lapren® (KCL 706 / Aldrich Z677558, Size M)

Material : Nitrile rubber

Break through time : 30 min Glove thickness : 0.4 mm

Protective index : Splash contact

Manufacturer : Camatril® (KCL 730 / Aldrich Z677442, Size M)

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).

Tightly fitting safety goggles

Skin and body protection : Acid-resistant 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 : crystalline

Color : white

Odor : No data available

Odor Threshold : No data available

pH : $< 1.0 (68 \, ^{\circ}\text{F} / 20 \, ^{\circ}\text{C})$

Concentration: 800 g/l

(External MSDS)

Melting point/ range : 140 - 145 °F / 60 - 63 °C

Method: lit.

Boiling point/boiling range : 372 °F / 189 °C

Method: lit.

Flash point : 259 °F / 126 °C

Method: closed cup

Evaporation rate : No data available

Burning rate : No data available

Self-ignition : 887 °F / 475 °C

> 1,011.9 - < 1,022 hPa

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Method: DIN 51794

GLP: yes

Upper explosion limit / Upper flammability limit

: No data available

Lower explosion limit / Lower flammability limit : Lower explosion limit

8 %(V)

Vapor pressure : 0.0213 hPa (68 °F / 20 °C)

Method: OECD Test Guideline 104

GLP: yes

Relative vapor density : No data available

Relative density : $1.64 (68 \degree F / 20 \degree C)$

Method: OECD Test Guideline 109

GLP: yes

Density : 1.64 g/cm3 (68 °F / 20 °C)

Method: OECD Test Guideline 109

GLP: yes

Solubility(ies)

Water solubility : 1,000 g/l miscible (68 °F / 20 °C)

pH: 0.86

Method: OECD Test Guideline 105

GLP: yes

Partition coefficient: n-

octanol/water

: log Pow: 0.49

Method: OECD Test Guideline 107

GLP: yes

Bioaccumulation is not expected.

Autoignition temperature : 878 °F / 470 °C

Decomposition temperature

: No data available

Viscosity

Viscosity, dynamic : 1.29 mPa.s (212 °F / 100 °C)

Viscosity, kinematic : No data available

Flow time : No data available

Explosive properties : Not classified as explosive.

Oxidizing properties : none

Surface tension : 73.1 mN/m, 68 °F / 20 °C, OECD Test Guideline 115,

GLP: yes

Sigma-Aldrich - 402923

Page 8 of 17

Molecular weight : 94.50 g/mol

Particle characteristics

: No data available Particle size

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point

is to be rated as critical.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion

potential may generally be assumed.

Chemical stability : The product is chemically stable under standard

ambient conditions (room temperature) .

Possibility of hazardous

reactions

: Generates dangerous gases or fumes in contact with:

sodium carbonate calcium carbonate Potassium carbonate

Sulfides Metals

Exothermic reaction with:

Amines bases

Reducing agents

Strong oxidizing agents

Sulfides

hydrogen peroxide Risk of explosion with:

furfuryl alcohol hydrogen peroxide

Conditions to avoid : Strong heating.

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 - 90.4 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 1.268 mg/l - dust/mist

(OECD Test Guideline 403)

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

LD50 Dermal - Rat - female - 305 mg/kg

(OECD Test Guideline 402)

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive - 24 h Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irreversible effects on the eye Remarks: Causes serious eye damage.

(ECHA)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: Not a skin sensitizer. (OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: S. typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Result: negative Remarks: (ECHA)

Test Type: DNA binding study

Species: Mouse

Application Route: Oral

Result: negative Remarks: (ECHA)

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.

Sigma-Aldrich - 402923

Page 10 of 17



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

on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Respiratory Tract

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 90 d - LOAEL (Lowest observed

adverse effect level) - 30 mg/kg Remarks: Subchronic toxicity

RTECS: AF8575000

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

chloroacetic acid:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 369 mg/l

Exposure time: 96 h Test Type: static test Remarks: (ECHA)

Toxicity to daphnia and

other aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 74.2 mg/l

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

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

: ErC50 (Desmodesmus subspicatus (green algae)):

0.033 mg/l

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201

Sigma-Aldrich - 402923

Page 11 of 17

GLP: yes

NOEC (Desmodesmus subspicatus (green algae)):

0.006 mg/l

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201

GLP: yes

M-Factor (Acute aquatic

toxicity)

: 10

Toxicity to fish (Chronic

toxicity)

NOEC (Danio rerio (zebra fish)): < 25 mg/l

End point: mortality Exposure time: 35 d

Test Type: semi-static test Analytical monitoring: yes

Method: OECD Test Guideline 210

GLP: yes

Toxicity to daphnia and

other aquatic

invertebrates (Chronic

toxicity)

: NOEC (Daphnia magna (Water flea)): 32 mg/l

Exposure time: 21 d

Test Type: semi-static test

Remarks: (ECHA)

Ecotoxicology Assessment

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

Persistence and degradability

Components:

chloroacetic acid:

Biodegradability : aerobic

Inoculum: activated sludge, non-adapted

Result: Readily biodegradable.

Biodegradation: 69 % Exposure time: 28 d

GLP: yes

Remarks: (ECHA)

Bioaccumulative potential

Components:

chloroacetic acid:

Partition coefficient: n-

: log Pow: 0.49

octanol/water Method: OECD Test Guideline 107

GLP: yes

Remarks: Bioaccumulation is not expected.

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

82, Subpt. A, App.A + B).

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 1751

Proper shipping name : Chloroacetic acid, solid

Class : 6.1 Subsidiary risk : 8 Packing group : II

Labels : Division 6.1 - Toxic substances, Class 8 - Corrosive

substances

Packing instruction (cargo: 675

aircraft)

Packing instruction : 668

(passenger aircraft)

IMDG-Code

UN number : UN 1751

Proper shipping name : CHLOROACETIC ACID, SOLID

Class : 6.1
Subsidiary risk : 8
Packing group : II
Labels : 6.1 (8)
EmS Code : F-A, S-B
Marine pollutant : yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National regulation

49 CFR Road

UN/ID/NA number : UN 1751

Proper shipping name : Chloroacetic acid, solid

Class : 6.1 Subsidiary risk : 8 Packing group : II

Labels : Division 6.1 - Toxic substances, Class 8 - Corrosive

substances

ERG Code : 153 Marine pollutant : no

Poison Inhalation Hazard : No

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

| Components | CAS-No. | Component | Calculated product |
|-------------------|---------|-----------|--------------------|
| | | RQ (lbs) | RQ (lbs) |
| chloroacetic acid | 79-11-8 | 100 | 100 |

SARA 304 Extremely Hazardous Substances Reportable Quantity

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|-------------------|---------|-----------------------|--------------------------------|
| chloroacetic acid | 79-11-8 | 100 | 100 |

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

| Components | CAS-No. | Component TPQ (lbs) |
|-------------------|---------|---------------------|
| chloroacetic acid | 79-11-8 | 10000 |
| chloroacetic acid | 79-11-8 | 100* |

^{*:} Solid in the molten or powdered form (particles < 100 microns), in solution, or meeting the NFPA reactivity criteria

SARA 311/312 : Acute Health Hazard Hazards : Chronic Health Hazard

SARA 313 : The following components are subject to reporting

levels established by SARA Title III, Section 313:

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1illiPORE

chloroacetic 79-11-8 >= 90 - <= 100 % acid

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). The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

chloroacetic acid 79-11-8 >= 90 - <= 100 %

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).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

chloroacetic acid 79-11-8 >= 90 - <= 100 %

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

chloroacetic acid 79-11-8

Pennsylvania Right To Know

chloroacetic acid 79-11-8

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.

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SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
US WEEL : USA. Workplace Environmental Exposure Levels

(WEEL)

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

US WEEL / TWA : 8-hr TWA

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; - 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 European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Decomposition Temperature; SARA Superfund Amendments 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.

Sigma-Aldrich - 402923

Page 16 of 17



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