# SAFETY DATA SHEET

Version 7.4
Revision Date 05/20/2025
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Chloroacetyl chloride

Product Number : 104493
Brand : Aldrich
Index-No. : 607-080-00-1
CAS-No. : 79-04-9

### 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)

Acute toxicity (Oral) : Category 3

Acute toxicity : Category 3

(Inhalation)

| | | |
|---|---|---|
| Acute toxicity (Dermal) | : | Category 3 |
| Skin corrosion | : | Sub-category 1A |
| Serious eye damage | : | Category 1 |
| Specific target organ toxicity - repeated exposure | : | Category 1 (Lungs) |
| Short-term (acute) aquatic hazard | : | Category 1 |

**Other hazards**

Reacts violently with water.
Contact with water liberates toxic gas.
Corrosive to the respiratory tract.
Reacts violently with water.
Contact with water liberates toxic gas.

**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.
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

Precautionary statements :

**Prevention:**

P260 Do not breathe mist or vapours.
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 and 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.
P314 Get medical advice/ attention if you feel unwell.
P361 + P364 Take off immediately all contaminated clothing and wash it 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 |
|---|---|---|---|
| chloroacetyl chloride | 79-04-9* | >= 80 - <= 100 | TSC |

* Indicates that the identifier is a CAS No.
TSC- the actual concentration or concentration range is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

General advice : First aiders need to protect themselves.
Show this 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.<br>Immediately call in ophthalmologist.<br>Remove contact lenses. |
| If swallowed | : | If swallowed: give water to drink (two glasses at 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.<br>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. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : | Water<br>Foam |
| Specific hazards during fire fighting | : | Not combustible.<br><br>Vapours are heavier than air and may spread along floors.<br><br>May not get in touch with: Water<br><br>Forms explosive mixtures with air on intense heating.<br><br>Ambient fire may liberate hazardous vapours. |

| | | |
|---|---|---|
| Hazardous combustion products | : | Carbon oxides<br><br>Hydrogen chloride gas |
| Specific extinguishing methods | : | No data available |
| Further information | : | Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.<br><br>Suppress (knock down) gases/vapours/mists with a water spray jet.<br>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:<br>Do not breathe vapours, aerosols.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>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.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area. |

## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

| | | |
|---|---|---|
| Advice on safe handling | : | Work under hood. Do not inhale substance/mixture.<br>Avoid generation of vapours/aerosols.<br>Keep workplace dry. Do not allow product to come into contact with water. |
| Conditions for safe storage | : | Store under nitrogen. |
| Further information on storage conditions | : | Tightly closed.<br>Keep in a well-ventilated place.<br>Keep locked up or in an area accessible only to qualified or authorised persons. |
| Materials to avoid | : | Keep away from water.<br><br>Never allow product to get in contact with water during storage. |
| Storage class | : | 6.1A, Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials |
| Recommended storage temperature | : | Recommended storage temperature see product label. |
| Further information on storage stability | : | Hydrolyses readily. |
| Packaging material | : | Suitable material: Amber Glass Bottle/Jar |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ingredients with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| chloroacetyl chloride | 79-04-9 | TWA | 0.05 ppm | ACGIH |
| | | STEL | 0.15 ppm | ACGIH |
| | | TWA | 0.05 ppm<br>0.2 mg/m3 | NIOSH REL |

**Engineering measures** : No data available

**Personal protective equipment**

Respiratory protection : required when vapours/aerosols 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 | : | Nitrile rubber |
| Break through time | : | 480 min |
| Glove thickness | : | 0.11 mm |
| Protective index | : | Full contact |
| Manufacturer | : | KCL 741 Dermatril® L |

| | | |
|---|---|---|
| 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).<br>Tightly fitting safety goggles |
| 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 | : | clear, liquid |
| Color | : | No data available |

| | | |
|---|---|---|
| Odor | : | No data available |
| Odor Threshold | : | No data available |
| pH | : | No data available |
| Melting point/ range | : | -8 °F / -22 °C<br>Method: lit. |
| Boiling point/boiling range | : | 221 - 223 °F / 105 - 106 °C<br>Method: lit. |
| Flash point | : | 212 °F / 100 °C<br><br>Method: closed cup |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Flammability (liquids) | : | The product is not flammable. |
| Burning rate | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapor pressure | : | 25.3 hPa (68 °F / 20 °C) |
| Relative vapour density | : | No data available |
| Relative density | : | No data available |
| Density | : | 1.418 g/cm3 (77 °F / 25 °C)<br>Method: lit. |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | No data available |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | | |
| Viscosity, dynamic | : | 988 mPa.s (68 °F / 20 °C) |

| | | |
|---|---|---|
| Viscosity, kinematic | : | No data available |
| Flow time | : | No data available |
| Explosive properties | : | Not classified as explosive. |
| Oxidizing properties | : | none |
| Surface tension | : | 0.04 mN/m, -8 °F / -22 °C |
| Molecular weight | : | 112.94 g/mol |
| Particle characteristics<br>Particle size | : | No data available |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | Forms explosive mixtures with air on intense heating.<br><br>A range from approx. 15 Kelvin below the flash point is to be rated as critical. |
| Reactivity | : | Reacts violently with water.<br><br>Contact with water liberates toxic gas. |
| Chemical stability | : | sensitive to moisture |
| Possibility of hazardous reactions | : | May decompose on exposure to moist air or water. |
| Conditions to avoid | : | Exposure to moisture<br><br>Strong heating.<br><br>Moisture. |
| Incompatible materials | : | Aluminium<br>Iron<br>Mild steel<br>Zinc |
| Hazardous decomposition products | : | In the event of fire: see section 5 |

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity**
LD50 Oral - Rat - female - 50 - 100 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Mouse - 4 h - 3.01 mg/l - vapour

Remarks: (RTECS)
Inhalation: Corrosive to respiratory system.
LD50 Dermal - Rat - 662 mg/kg
Remarks: (RTECS)

**Skin corrosion/irritation**
Skin - Rabbit
Result: Causes severe burns.
Remarks: (ECHA)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: Severe eye irritation
(Draize Test)
Remarks: (RTECS)
Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
No data available

**Carcinogenicity**

IARC: No component 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 component 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**
No data available

**Specific target organ toxicity - repeated exposure**
Causes damage to organs through prolonged or repeated exposure.
- Lungs
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Aspiration hazard**
No data available

### 11.2 Additional Information

RTECS: AO6475000
Decomposition of the substance with tissue moisture.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Components:**

**chloroacetyl chloride:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Poecilia reticulata (guppy)): 369 mg/l<br>End point: mortality<br>Exposure time: 96 h<br>Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 77 mg/l<br>End point: Immobilization<br>Exposure time: 48 h<br>Test Type: static test<br>Method: DIN 38412 |
| Toxicity to algae/aquatic plants | : | ErC50 (Desmodesmus subspicatus (green algae)): 0.033 mg/l<br>Exposure time: 72 h<br>Test Type: static test<br>Analytical monitoring: yes<br>Method: OECD Test Guideline 201<br>GLP: yes |
| M-Factor (Acute aquatic toxicity) | : | 10 |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Danio rerio (zebra fish)): 12.5 mg/l<br>Exposure time: 28 Days<br>Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 32 mg/l<br>Exposure time: 21 d<br>Test Type: semi-static test<br>Analytical monitoring: yes<br>Remarks: (ECHA) |
| Toxicity to microorganisms | : | NOEC (Pseudomonas putida): > 1,000 mg/l<br>Exposure time: 3 h |

Test Type: static test
Method: OECD Test Guideline 209

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

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

**Persistence and degradability**

**Components:**

**chloroacetyl chloride:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301C
Remarks: Hydrolysis
(IUCLID)

**Bioaccumulative potential**

No data available

**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).

**Components:**

**chloroacetyl chloride:**

Additional ecological information : Biological effects:

Product reacts with water.

Hazardous decomposition products

Harmful effect due to pH shift.

Forms toxic and corrosive mixtures with water even if diluted.

Discharge into the environment must be avoided.

## 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**
Not permitted for transport

**IMDG-Code**

| | | |
|---|---|---|
| UN number | : | UN 1752 |
| Proper shipping name | : | CHLOROACETYL CHLORIDE |
| Class | : | 6.1 |
| Subsidiary risk | : | 8 |
| Packing group | : | I |
| 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 Regulations

**49 CFR Road**

| | | |
|---|---|---|
| UN/ID/NA number | : | UN 1752 |
| Proper shipping name | : | Chloroacetyl chloride |
| Class | : | 6.1 |
| Subsidiary risk | : | 8 |
| Packing group | : | I |
| Labels | : | Division 6.1 - Poison inhalation hazard, Class 8 - Corrosive substances |
| ERG Code | : | 156 |
| Marine pollutant | : | no |
| Poison Inhalation Hazard | : | Hazard Zone B |

**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 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**

| | |
|---|---|
| chloroacetyl chloride | 79-04-9 |

**Pennsylvania Right To Know**

| | |
|---|---|
| chloroacetyl chloride | 79-04-9 |

**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 components 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) |
| NIOSH REL | : | USA. NIOSH Recommended Exposure Limits |
| ACGIH / TWA | : | 8-hour, time-weighted average |
| ACGIH / STEL | : | Short-term exposure limit |
| NIOSH REL / TWA | : | Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek |

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 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.


Revision Date : 05/20/2025

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