

# SAFETY DATA SHEET

according to the OSHA  
Hazard Communication Standard

Version 6.21  
Revision Date 07/10/2026  
Print Date 07/11/2026

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Pyridinium dichromate

Product Number : 214698  
Brand : Aldrich  
Index-No. : 024-017-00-8  
CAS-No. : 20039-37-6

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

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : 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)**

**Hazards for the product as supplied**

|                                       |               |
|---------------------------------------|---------------|
| Flammable solids                      | : Category 1  |
| Skin corrosion                        | : Category 1B |
| Serious eye damage                    | : Category 1  |
| Skin sensitisation                    | : Category 1  |
| Carcinogenicity<br>(Inhalation)       | : Category 1B |
| Short-term (acute)<br>aquatic hazard  | : Category 1  |
| Long-term (chronic)<br>aquatic hazard | : Category 1  |

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H228 Flammable solid.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H350 May cause cancer by inhalation.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P260 Do not breathe dust.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

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.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

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

P363 Wash contaminated clothing before reuse.

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

P391 Collect spillage.

**Storage:**

P405 Store locked up.

**Disposal:**

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

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Substance

CAS-No. : 20039-37-6

**Components**

| Chemical name         | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|-----------------------|-------------------|-----------------------|--------------|
| pyridinium dichromate | 20039-37-6*       | >= 80 - <= 100        | TSC          |

\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

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**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. Call in physician.                                                                                                                    |
| 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                                                | : After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. 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                                                                                                                                                  |

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## SECTION 5. FIREFIGHTING MEASURES

|                                       |                                                                                                           |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media          | : Water<br>Foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry powder                                        |
| Unsuitable extinguishing media        | : For this substance/mixture no limitations of extinguishing agents are given.                            |
| Specific hazards during fire fighting | : Combustible.<br><br>Development of hazardous combustion gases or vapours possible in the event of fire. |
| Hazardous combustion products         | : Carbon oxides<br><br>Nitrogen oxides (NO <sub>x</sub> )<br><br>Chromium oxides                          |

|                                                |                                                                                                                                                                      |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specific extinguishing methods                 | : No data available                                                                                                                                                  |
| Further information                            | : 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.      |

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel:<br>Avoid generation and inhalation of dusts in all circumstances.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Keep away from heat and sources of ignition.<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.<br>Risk of explosion.                                                                                                                                                                                                                                                                                                                        |
| 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. Dispose of properly. Clean up affected area.<br>Avoid generation of dusts.                                                                                                                                                         |

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## 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.<br>Take precautionary measures against static discharge. |
| Advice on safe handling                         | : Work under hood. Do not inhale substance/mixture.                                                                          |
| Further information on                          | : Keep locked up or in an area accessible only to                                                                            |

storage conditions : qualified or authorised persons.  
Tightly closed and away from sources of ignition and heat. Observe national regulations.

Storage class : 4.1A, Other explosive hazardous materials

Recommended storage temperature : Recommended storage temperature see product label.

Further information on storage stability : Handle and store under inert gas.  
Hygroscopic.

Packaging material : Suitable material: Amber Glass Bottle/Jar

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

| Components            | CAS-No.    | Value type<br>(Form of exposure)       | Control parameters /<br>Permissible concentration | Basis        |
|-----------------------|------------|----------------------------------------|---------------------------------------------------|--------------|
| pyridinium dichromate | 20039-37-6 | CEIL                                   | 1 mg/10m <sup>3</sup><br>(CrO <sub>3</sub> )      | OSHA Z-2     |
|                       |            | PEL                                    | 0.005 mg/m <sup>3</sup><br>(chromium)             | OSHA<br>CARC |
|                       |            | TWA                                    | 0.0002 mg/m <sup>3</sup><br>(chromium)            | NIOSH REL    |
|                       |            | TWA<br>(Inhalable particulate matter)  | 0.0002 mg/m <sup>3</sup>                          | ACGIH        |
|                       |            | STEL<br>(Inhalable particulate matter) | 0.0005 mg/m <sup>3</sup>                          | 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 P3

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The entrepreneur 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 : Handle with impervious gloves.  
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](http://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 : Flame retardant antistatic protective clothing.

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : crystalline

Colour : orange, yellow

|                                                     |                                                                                                                      |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Odour                                               | : No data available                                                                                                  |
| Odour Threshold                                     | : No data available                                                                                                  |
| pH                                                  | : No data available                                                                                                  |
| Melting point/ range                                | : 306 - 307 °F / 152 - 153 °C<br>Method: lit.                                                                        |
| Boiling point/boiling range                         | : No data available                                                                                                  |
| Flash point                                         | : Not applicable                                                                                                     |
| Evaporation rate                                    | : No data available                                                                                                  |
| Flammability (solid, gas)                           | : The substance or mixture is a flammable solid with the category 1.<br>Method: Flammability (solids)<br>GLP: yes    |
| Burning rate                                        | : 7.1 mm/s                                                                                                           |
| Upper explosion limit /<br>Upper flammability limit | : No data available                                                                                                  |
| Lower explosion limit /<br>Lower flammability limit | : No data available                                                                                                  |
| Vapour pressure                                     | : No data available                                                                                                  |
| Relative vapour density                             | : No data available                                                                                                  |
| Relative density                                    | : 1.71 (68 °F / 20 °C)<br>Method: OECD Test Guideline 109<br>GLP: yes                                                |
| Density                                             | : No data available                                                                                                  |
| Solubility(ies)<br>Water solubility                 | : 943 g/l completely soluble (68 °F / 20 °C)<br>Method: OECD Test Guideline 105<br>GLP: yes                          |
| Partition coefficient: n-<br>octanol/water          | : log Pow: < -3.7 (68 °F / 20 °C)<br>Method: OECD Test Guideline 107<br>GLP: yes<br>Bioaccumulation is not expected. |
| Autoignition temperature                            | : No data available                                                                                                  |
| Decomposition<br>temperature                        | : ca. 351 - 568 °F / 177 - 298 °C<br>Decomposes on heating.                                                          |



|                          |                     |
|--------------------------|---------------------|
| Viscosity, dynamic       | : No data available |
| Viscosity, kinematic     | : No data available |
| Flow time                | : No data available |
| Explosive properties     | : No data available |
| Oxidizing properties     | : No data available |
| Molecular weight         | : 376.20 g/mol      |
| Particle characteristics |                     |
| Particle size            | : No data available |

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## SECTION 10. STABILITY AND REACTIVITY

|                                    |                                                                                                                                                                                             |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reactivity                         | : 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 | : No data available                                                                                                                                                                         |
| Conditions to avoid                | : no information available                                                                                                                                                                  |
| Incompatible materials             | : Organic materials<br>Powdered metals                                                                                                                                                      |
| Hazardous decomposition products   | : In the event of fire: see section 5                                                                                                                                                       |

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

#### Skin corrosion/irritation

Skin - In vitro study

Result: Corrosive after 1 to 4 hours of exposure  
(OECD Test Guideline 431)

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

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: Positive results were obtained in some in vitro tests.

**Carcinogenicity**

May cause cancer by inhalation.

IARC: 1 - Group 1: Carcinogenic to humans (pyridinium dichromate)

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: OSHA specifically regulated carcinogen (pyridinium dichromate)

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

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

Chromium(VI) is highly toxic. It is absorbed via both the lungs and the gastrointestinal tract. Being strong oxidisers, chromates/ bichromates can cause burns and ulcerations on the skin and mucous membranes and also irritations in the upper respiratory tract. Poorly healing ulcers occur after wound contact. In predisposed persons the substance rapidly leads to sensitisation and allergic reactions of the respiratory tract (risk of pneumonia!) and damage to nasal mucous membranes (under given circumstances perforation of the septum). After swallowing severe symptoms in the gastrointestinal tract such as bloody diarrhoea, vomiting (aspiration pneumonia!), spasms, circulatory collapse, unconsciousness, formation of methaemoglobin. Absorption may result in hepatic and renal damage. Inhalable chromium(VI) compounds gave clear evidence to be carcinogenic in animal experiments. Lethal dose (man): 0.5g. Antidotes: chelating agents such as EDTA, DMPS (Demaval®)

This substance should be handled with particular care.

Stomach - Irregularities - Based on Human Evidence

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **pyridinium dichromate:**

- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.91 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 1.05 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

### Ecotoxicology Assessment

- Acute aquatic toxicity : Very toxic to aquatic life.
- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

### Persistence and degradability

#### Components:

##### **pyridinium dichromate:**

- Biodegradability : aerobic  
Inoculum: activated sludge  
Concentration: 20 mg/l  
Result: Not biodegradable  
Biodegradation: 4.7 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301E  
GLP: yes

### Bioaccumulative potential

#### Components:

##### **pyridinium dichromate:**

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Partition coefficient: n-octanol/water : log Pow: < -3.7 (68 °F / 20 °C)  
pH: 2.4  
Method: OECD Test Guideline 107  
GLP: yes  
Remarks: Bioaccumulation is not expected.

#### **Mobility in soil**

No data available

#### **Other adverse effects**

#### **Components:**

#### **pyridinium dichromate:**

Additional ecological information : Discharge into the environment must be avoided.

#### **Endocrine disrupting properties**

No data available

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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.

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### **SECTION 14. TRANSPORT INFORMATION**

#### **International Regulations**

#### **IATA-DGR**

UN/ID No. : UN 3180  
Proper shipping name : Flammable solid, corrosive, inorganic, n.o.s. (pyridinium dichromate)  
Class : 4.1  
Subsidiary risk : 8  
Packing group : II  
Labels : Division 4.1 - Flammable solids, Class 8 - Corrosive substances  
Packing instruction (cargo aircraft) : 448  
Packing instruction (passenger aircraft) : 445

#### **IMDG-Code**

UN number : UN 3180  
Proper shipping name : FLAMMABLE SOLID, CORROSIVE, INORGANIC, N.O.S. (pyridinium dichromate)  
Class : 4.1

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Subsidiary risk : 8  
Packing group : II  
Labels : 4.1 (8)  
EmS Code : F-A, S-G  
Marine pollutant : yes

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR

UN/ID/NA number : UN 3180  
Proper shipping name : Flammable solid, corrosive, inorganic, n.o.s.  
(pyridinium dichromate)  
Class : 4.1

Subsidiary risk : 8  
Packing group : II  
Labels : Division 4.1 - Flammable solids, Class 8 - Corrosive  
substances  
ERG Code : 134  
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.

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## 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** : Reactivity Hazard  
Acute Health Hazard  
Chronic Health Hazard

**SARA 313** : The following components are subject to reporting  
levels established by SARA Title III, Section 313:

|                          |                |                  |
|--------------------------|----------------|------------------|
| pyridinium<br>dichromate | 20039-37-<br>6 | >= 90 - <= 100 % |
|--------------------------|----------------|------------------|

## US State Regulations

### Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know

pyridinium dichromate

20039-37-6

### 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

### California Prop. 65

WARNING: This product can expose you to chemicals including pyridinium dichromate, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov). **The components of this product are reported in the following inventories:**

US 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)                                                   |
| NIOSH REL       | : USA. NIOSH Recommended Exposure Limits                                                    |
| OSHA CARC       | : OSHA Specifically Regulated Chemicals/Carcinogens                                         |
| OSHA Z-2        | : USA. Occupational Exposure Limits (OSHA) - Table Z-2                                      |
| 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 |
| OSHA CARC / PEL | : Permissible exposure limit (PEL)                                                          |
| OSHA Z-2 / CEIL | : Acceptable ceiling concentration                                                          |

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 Harmonised 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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 - Organisation 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](http://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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US / EN