

# SAFETY DATA SHEET

according to the OSHA  
Hazard Communication Standard

Version 6.13  
Revision Date 07/13/2026  
Print Date 07/14/2026

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Phenylacetylene

Product Number : 117706  
Brand : Aldrich  
CAS-No. : 536-74-3

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

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : Not Available

### 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

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## 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 liquids : Category 3

Skin corrosion : Category 1B

Serious eye damage : Category 1

Carcinogenicity : Category 1B

Long-term (chronic) aquatic hazard : Category 3

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.  
H314 Causes severe skin burns and eye damage.  
H350 May cause cancer.  
H412 Harmful 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.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P264 Wash skin thoroughly after handling.  
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.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.  
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. : 536-74-3

**Components**

| Chemical name   | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|-----------------|-------------------|-----------------------|--------------|
| phenylacetylene | 536-74-3*         | $\geq 90 - \leq 100$  | -            |
| 1,4-Dioxane     | 123-91-1*         | $\geq 0.1 - < 1$      | -            |

\* Indicates that the identifier is a CAS No.

Actual concentration 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

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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 GHS label elements) 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 : Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting : Combustible.

Mixture with combustible ingredients.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

Hazardous combustion products : Carbon oxides

Specific extinguishing methods : No data available

Further information : Remove container from danger zone and cool with water.

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:  
Do not breathe vapours, aerosols.  
Avoid substance contact.  
Ensure adequate ventilation.  
Keep away from heat and sources of ignition.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
Wear appropriate personal protective equipment, as indicated in Section 8.

Environmental precautions : Do not let product enter drains.  
Risk of explosion.

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 with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2 GHS label elements

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.  
Take precautionary measures against static discharge.

Advice on safe handling : Work under hood. Do not inhale substance/mixture.  
Avoid generation of vapours/aerosols.

Further information on storage conditions : Keep container tightly closed in a dry and well-ventilated place.  
Keep away from heat and sources of ignition.  
Keep locked up or in an area accessible only to

qualified or authorised persons.

Storage class : 3, Flammable liquids

Recommended storage temperature : 36 - 46 °F / 2 - 8 °C

Further information on storage stability : Moisture sensitive.

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## 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     |
|-------------|----------|----------------------------------|---------------------------------------------------|-----------|
| 1,4-Dioxane | 123-91-1 | TWA                              | 20 ppm                                            | ACGIH     |
|             |          | TWA                              | 25 ppm<br>90 mg/m <sup>3</sup>                    | OSHA P0   |
|             |          | TWA                              | 100 ppm<br>360 mg/m <sup>3</sup>                  | OSHA Z-1  |
|             |          | C                                | 1 ppm<br>3.6 mg/m <sup>3</sup>                    | 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 type ABEK

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 : butyl-rubber

Break through time : 480 min

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|                          |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Glove thickness          | : 0.7 mm                                                                                                                                                                                                                                                                                                                                                                                      |
| Protective index         | : Full contact                                                                                                                                                                                                                                                                                                                                                                                |
| Manufacturer             | : Butoject® (KCL 898)                                                                                                                                                                                                                                                                                                                                                                         |
| 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: <a href="http://www.kcl.de">www.kcl.de</a> ). |
| 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 | : 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                  | : liquid (68 °F / 20 °C, 1,013 hPa) |
| Colour                      | : colourless                        |
| Odour                       | : No data available                 |
| Odour Threshold             | : No data available                 |
| pH                          | : No data available                 |
| Melting point/ range        | : -48.6 °F / -44.8 °C               |
| Boiling point/boiling range | : 288 - 291 °F / 142 - 144 °C       |
| Flash point                 | : 81 °F / 27 °C                     |

Method: closed cup

|                                                     |                                                                  |
|-----------------------------------------------------|------------------------------------------------------------------|
| Evaporation rate                                    | : No data available                                              |
| Flammability (solid, gas)                           | : No data available                                              |
| Flammability (liquids)                              | : No data available                                              |
| Burning rate                                        | : No data available                                              |
| Self-ignition                                       | : ca.<br>797 °F / 425 °C<br>ca. 999.91 hPa<br>Method: ASTM E-659 |
| Upper explosion limit /<br>Upper flammability limit | : No data available                                              |
| Lower explosion limit /<br>Lower flammability limit | : No data available                                              |
| Vapour pressure                                     | : 23.4647 hPa (99.9 °F / 37.7 °C)                                |
| Relative vapour density                             | : No data available                                              |
| Relative density                                    | : No data available                                              |
| Density                                             | : 0.93 g/mL (77 °F / 25 °C)                                      |
| Water solubility                                    | : No data available                                              |
| Partition coefficient: n-<br>octanol/water          | : log Pow: ca. 2.53<br>Bioaccumulation is not expected. (ECHA)   |
| Autoignition temperature                            | : No data available                                              |
| Decomposition<br>temperature                        | : No data available                                              |
| Viscosity, dynamic                                  | : No data available                                              |
| Viscosity, kinematic                                | : No data available                                              |
| Flow time                                           | : No data available                                              |
| Explosive properties                                | : No data available                                              |
| Oxidizing properties                                | : none                                                           |
| Molecular weight                                    | : 102.13 g/mol                                                   |

#### Particle characteristics

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Particle size : No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity : Vapour/air-mixtures are explosive at intense warming.

Chemical stability : The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions : Violent reactions possible with:  
Oxidizing agents  
halogens  
Alkali metals  
perchloric acid  
acids

Conditions to avoid : Exposure to moisture  
  
Heating.

Incompatible materials : No data available

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

Acute toxicity estimate Oral - 2,500 mg/kg  
(Calculation method)  
LD50 Oral - Rat - female - > 2,000 mg/kg  
(OECD Test Guideline 423)  
Symptoms: Irritation of mucous membranes  
Symptoms: Possible damages:, mucosal irritations  
Dermal: No data available

#### Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)  
Result: Causes burns. - 3 - 60 min  
(OECD Test Guideline 431)

#### Serious eye damage/eye irritation

Remarks: Causes serious eye damage.  
(ECHA)

#### Respiratory or skin sensitization

Human Cell Line Activation Test (h-CLAT) - In vitro study  
Result: negative  
(OECD Test Guideline 442E)  
Direct Peptide Reactivity Assay (DPRA) - In vitro study

Result: negative  
(OECD Test Guideline 442C)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

**Carcinogenicity**

Presumed to have carcinogenic potential for humans

IARC: 2B - Group 2B: Possibly carcinogenic to humans (1,4-Dioxane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (1,4-Dioxane)

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**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: DA0780000

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**phenylacetylene:**

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

**1,4-Dioxane:**

Toxicity to daphnia and : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l

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|                                                                        |                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| other aquatic invertebrates                                            | <p>End point: Immobilization</p> <p>Exposure time: 48 h</p> <p>Test Type: semi-static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 202</p> <p>GLP: yes</p>                                                        |
| Toxicity to algae/aquatic plants                                       | <p>: ErC50 (<i>Pseudokirchneriella subcapitata</i> (green algae)): &gt; 1,000 mg/l</p> <p>Exposure time: 72 h</p> <p>Test Type: static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 201</p> <p>GLP: yes</p>       |
| Toxicity to fish (Chronic toxicity)                                    | <p>: NOEC (<i>Pimephales promelas</i> (fathead minnow)): &gt; 103 mg/l</p> <p>End point: mortality</p> <p>Exposure time: 32 d</p> <p>Test Type: flow-through test</p> <p>Analytical monitoring: yes</p> <p>GLP: yes</p> <p>Remarks: (ECHA)</p> |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | <p>: NOEC (<i>Daphnia magna</i> (Water flea)): 1,000 mg/l</p> <p>End point: reproduction rate</p> <p>Exposure time: 21 d</p> <p>Method: OECD Test Guideline 211</p>                                                                            |

## **Persistence and degradability**

### **Components:**

#### **phenylacetylene:**

Biodegradability : aerobic

Inoculum: activated sludge

Concentration: 2 mg/l

Result: Not readily biodegradable.

Biodegradation: 4.2 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

GLP: yes

#### **1,4-Dioxane:**

Biodegradability : aerobic

Inoculum: activated sludge

Concentration: 100 mg/l

Result: Not readily biodegradable.

Biodegradation: < 10 %

Exposure time: 29 d

Method: OECD Test Guideline 301F

## Bioaccumulative potential

### Components:

#### **phenylacetylene:**

Partition coefficient: n-octanol/water : log Pow: ca. 2.53  
Remarks: Bioaccumulation is not expected.  
(ECHA)

#### **1,4-Dioxane:**

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Bioconcentration factor (BCF): 0.3 - 0.7  
Temperature: 77 °F / 25 °C  
Concentration: 10 mg/l  
Method: OECD Test Guideline 305C

Partition coefficient: n-octanol/water : log Pow: -0.42  
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).

### Components:

#### **phenylacetylene:**

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

#### **1,4-Dioxane:**

Additional ecological information : Forms toxic mixtures in water, dilution measures notwithstanding.

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 2920  
Proper shipping name : Corrosive liquid, flammable, n.o.s.  
(phenylacetylene)  
Class : 8  
Subsidiary risk : 3  
Packing group : II  
Labels : Class 8 - Corrosive substances, Class 3 - Flammable liquids  
Packing instruction (cargo aircraft) : 855  
Packing instruction (passenger aircraft) : 851

#### IMDG-Code

UN number : UN 2920  
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.  
(phenylacetylene)  
Class : 8  
Subsidiary risk : 3  
Packing group : II  
Labels : 8 (3)  
EmS Code : F-E, S-C  
Marine pollutant : no

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### National Regulations

#### 49 CFR

UN/ID/NA number : UN 2920  
Proper shipping name : Corrosive liquids, flammable, n.o.s.  
(phenylacetylene)  
Class : 8  
Subsidiary risk : 3  
Packing group : II  
Labels : Class 8 - Corrosive substances, Class 3 - Flammable

liquids  
ERG Code : 132  
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

Listed substances in the product are at low enough levels to not be expected to exceed the 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 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

|             |          |                |
|-------------|----------|----------------|
| 1,4-Dioxane | 123-91-1 | >= 0.1 - < 1 % |
|-------------|----------|----------------|

### 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 SOCM I 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

|             |          |
|-------------|----------|
| 1,4-Dioxane | 123-91-1 |
|-------------|----------|

#### Pennsylvania Right To Know

1,4-Dioxane

123-91-1

### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

### **Vermont Chemicals of High Concern**

1,4-Dioxane

123-91-1

### **Washington Chemicals of High Concern**

1,4-Dioxane

123-91-1

### **California Prop. 65**

WARNING: This product can expose you to chemicals including 1,4-Dioxane, which is/are known to the State of California to cause cancer. 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 P0        | : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)               |
| OSHA Z-1       | : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| ACGIH / TWA    | : 8-hour, time-weighted average                                                    |
| NIOSH REL / C  | : Ceiling value not be exceeded at any time.                                       |
| OSHA P0 / TWA  | : 8-hour time weighted average                                                     |
| OSHA Z-1 / 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 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

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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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