

# SAFETY DATA SHEET

according to the OSHA  
Hazard Communication Standard

Version 6.13  
Revision Date 04/16/2026  
Print Date 04/17/2026

## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Drabkin's reagent

Product Number : D5941

Brand : Sigma

### 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

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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

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 3

Eye irritation : Category 2A

Specific target organ toxicity - repeated exposure : Category 1 (Thyroid)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 2

**Other hazards**

Contact with acids liberates very toxic gas.

**GHS label elements**

Hazard pictograms : 

Signal word : Danger

Hazard statements : H301 + H311 Toxic if swallowed or in contact with skin.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H372 Causes damage to organs (Thyroid) through prolonged or repeated exposure.  
 H400 Very toxic to aquatic life.  
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
 P260 Do not breathe dust.  
 P264 Wash skin thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**  
 P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.  
 P302 + P352 + P312 IF ON SKIN: Wash with plenty of

water. Call a POISON CENTER/ doctor if you feel unwell.  
 P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P314 Get medical advice/ attention if you feel unwell.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.  
 P391 Collect spillage.

**Storage:**

P405 Store locked up.

**Disposal:**

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

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

Substance / Mixture : Mixture  
 CAS-No. : Not Assigned

**Components**

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
tripotassium hexacyanoferrate(III)	13746-66-2*	>= 10 - <= 30	TSC
Potassium cyanide	151-50-8*	>= 3 - <= 7	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.  
Call in ophthalmologist.  
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.
- 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  
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 : Mixture with combustible ingredients.
- Development of hazardous combustion gases or vapours possible in the event of fire.
- Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Potassium oxides

Sodium oxides

Iron oxides

- Specific extinguishing methods : No data available
- Further information : Suppress (knock down) gases/vapours/mists with a water spray jet.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:  
Avoid generation and inhalation of dusts in all circumstances.  
Avoid substance contact.  
Ensure adequate ventilation.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
For personal protection see section 8.
- Environmental precautions : Do not let product enter drains.
- Methods and materials for containment and cleaning up : Cover drains. Collect, bind, and pump off spills.  
Observe possible material restrictions (see sections 7 and 10).  
Take up carefully. Dispose of properly. Clean up affected area.  
Avoid generation of dusts.

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## SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

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

Further information on : Tightly closed.

storage conditions : Dry.  
Keep in a well-ventilated place.  
Keep locked up or in an area accessible only to qualified or authorised persons.

Materials to avoid : Do not store near acids.

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 : Light sensitive.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
tripotassium hexacyanoferrate(III)	13746-66-2	TWA	1 mg/m <sup>3</sup> (Iron)	ACGIH
		TWA	1 mg/m <sup>3</sup> (Iron)	NIOSH REL
Potassium cyanide	151-50-8	C	4.7 ppm 5 mg/m <sup>3</sup> (Cyanide)	NIOSH REL
		TWA	5 mg/m <sup>3</sup> (Cyanide)	OSHA Z-1
		C	5 mg/m <sup>3</sup> (Cyanide)	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

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 : Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.11 mm  
Protective index : Splash contact  
Manufacturer : Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Manufacturer : data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Remarks : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Safety glasses

Skin and body protection : protective clothing

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

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: solid
Color	: No data available
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Melting point	: No data available
Boiling point/boiling range	: No data available
Flash point	: Not applicable
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
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	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Density	: No data available
Water solubility	: No data available
Partition coefficient: n- octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available

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The life science business of Merck KGaA, Darmstadt, Germany  
operates as MilliporeSigma in the US and Canada

**MILLIPORE  
SIGMA**

Viscosity, kinematic : No data available  
Flow time : No data available  
Explosive properties : Not classified as explosive.  
Oxidizing properties : none  
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 : Generates dangerous gases or fumes in contact with:  
Acids

Conditions to avoid : no information available

Incompatible materials : Acids  
Strong oxidizing agents  
Cyanides  
Ammonia  
Strong acids  
Peroxides  
hydrochloric acid  
permanganates, for example potassium permanganate  
Iodine  
Metallic salts  
Chloral hydrate  
Alkaloids  
Chlorates

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

#### Mixture

##### Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

##### Skin corrosion/irritation

No data available

##### Serious eye damage/eye irritation

Remarks: Mixture causes serious eye irritation.

##### 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

Mixture causes damage to organs through prolonged or repeated exposure.  
- Thyroid

##### Aspiration hazard

No data available

### 11.2 Additional Information

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer. Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Liver - Irregularities - Based on Human Evidence

## Components

### tripotassium hexacyanoferrate(III)

#### Acute toxicity

LD50 Oral - Rat - > 5,110 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

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

(OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - Human

Result: No skin irritation

(OECD Test Guideline 439)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation

(OECD Test Guideline 405)

#### Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

#### Carcinogenicity

No evidence of carcinogenicity in animal studies. Based on data from similar materials

#### Reproductive toxicity

No toxicity to reproduction Based on data from similar materials

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

#### Aspiration hazard

No data available

### Potassium cyanide

#### Acute toxicity

LD50 Oral - Rat - female - 7.49 mg/kg

(Expert judgement)

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

Acute toxicity estimate Inhalation - 0.051 mg/l - dust/mist

(Expert judgement)

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

LD50 Dermal - Rabbit - female - 14.29 mg/kg

(Expert judgement)

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

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Result: negative

**Carcinogenicity**

No data available

**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.

- Thyroid

**Aspiration hazard**

No data available

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**tripotassium hexacyanoferrate(III):**

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 100 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 59 mg/l  
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): 3.1 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

**Potassium cyanide:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 0.11 mg/l  
End point: mortality  
Exposure time: 48 h  
Test Type: static test  
Remarks: (ECHA)

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.01 mg/l  
End point: Growth inhibition  
Exposure time: 20 d  
Remarks: (ECOTOX Database)  
The value is given in analogy to the following substances: hydrogen cyanide

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): 2.3 mg/l  
Exposure time: 30 min  
Test Type: static test  
Remarks: (IUCLID)

**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:**

**Potassium cyanide:**

Biodegradability : Remarks: The methods for determining

biodegradability are not applicable to inorganic substances.

### **Bioaccumulative potential**

#### **Components:**

##### **tripotassium hexacyanoferrate(III):**

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

##### **Potassium cyanide:**

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

### **Mobility in soil**

No data available

### **Other adverse effects**

#### **Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

### **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 1588  
Proper shipping name : Cyanides, inorganic, solid, n.o.s.  
(Potassium cyanide)  
Class : 6.1

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Packing group : II  
 Labels : Division 6.1 - Toxic substances  
 Packing instruction (cargo : 676  
 aircraft)  
 Packing instruction : 669  
 (passenger aircraft)

**IMDG-Code**

UN number : UN 1588  
 Proper shipping name : CYANIDES, INORGANIC, SOLID, N.O.S.  
 (Potassium cyanide)  
 Class : 6.1  
 Packing group : II  
 Labels : 6.1  
 EmS Code : F-A, S-A  
 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 1588  
 Proper shipping name : Cyanides, inorganic, solid, n.o.s.  
 (Potassium cyanide)  
 Class : 6.1  
 Packing group : II  
 Labels : Division 6.1 - Toxic substances  
 ERG Code : 157  
 Marine pollutant : yes  
 Poison Inhalation Hazard : No

**Special precautions for user**

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

**SECTION 15. REGULATORY INFORMATION**

**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Potassium cyanide	151-50-8	10	250

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Potassium cyanide	151-50-8	10	250

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
Potassium cyanide	151-50-8	100

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

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

Potassium cyanide      151-50-8       $\geq 1 - < 5 \%$

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Potassium cyanide      151-50-8       $\geq 1 - < 5 \%$

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 SOCOMI Intermediate or Final VOC's (40 CFR 60.489).

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Potassium cyanide      151-50-8       $\geq 1 - < 5 \%$

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Potassium cyanide      151-50-8       $\geq 1 - < 5 \%$

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Potassium cyanide      151-50-8       $\geq 1 - < 5 \%$

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

### US State Regulations

#### Massachusetts Right To Know

Potassium cyanide      151-50-8

#### Pennsylvania Right To Know

tripotassium hexacyanoferrate(III)      13746-66-2

Potassium cyanide      151-50-8

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

#### Washington Chemicals of High Concern

Product does not contain any listed chemicals

## California Prop. 65

WARNING: This product can expose you to chemicals including Potassium cyanide, which is/are known to the State of California to cause 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 Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / C	: Ceiling limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / C	: Ceiling value not be exceeded at any time.
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 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;

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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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