

## Material Safety Data Sheet

Version 4.2

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Acetone cyanohydrin

Product Number : A10000

Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

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2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Combustible Liquid, Target Organ Effect, Toxic by inhalation., Highly toxic by ingestion, Highly toxic by skin absorption

## Target Organs

Central nervous system, Blood, Heart, Liver, Kidney

## GHS Classification

Flammable liquids (Category 4)  
Acute toxicity, Oral (Category 2)  
Acute toxicity, Inhalation (Category 2)  
Acute toxicity, Dermal (Category 1)  
Acute aquatic toxicity (Category 1)  
Chronic aquatic toxicity (Category 1)

## GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H227 Combustible liquid  
H300 + H310 Fatal if swallowed or in contact with skin  
H330 Fatal if inhaled.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash hands thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing.  
P284 Wear respiratory protection.

P302 + P350

P310

P501

IF ON SKIN: Gently wash with plenty of soap and water.

Immediately call a POISON CENTER or doctor/ physician.

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

#### HMIS Classification

Health hazard: 4

Chronic Health Hazard: \*

Flammability: 2

Physical hazards: 0

#### NFPA Rating

Health hazard: 4

Fire: 2

Reactivity Hazard: 0

#### Potential Health Effects

**Inhalation**

Toxic if inhaled. May cause respiratory tract irritation.

**Skin**

May be fatal if absorbed through skin. May cause skin irritation.

**Eyes**

May cause eye irritation.

**Ingestion**

May be fatal if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms :  $\alpha$ -Hydroxyisobutyronitrile  
2-Hydroxyisobutyronitrile

Formula :  $C_4H_7NO$

Molecular Weight : 85.10 g/mol

Component		Concentration
<b>2-Cyanopropan-2-ol</b>		
CAS-No.	75-86-5	-
EC-No.	200-909-4	
Index-No.	608-004-00-X	

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### 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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### 5. FIREFIGHTING MEASURES

#### Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

**Further information**

Use water spray to cool unopened containers.

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**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

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**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
2-Cyanopropan-2-ol	75-86-5	C	1 ppm 4 mg/m3	USA. NIOSH Recommended Exposure Limits
Remarks	15 minute ceiling value			
		TWA	2 ppm	USA. Workplace Environmental Exposure Levels (WEEL)
	Skin			
		STEL	5 ppm	USA. Workplace Environmental Exposure Levels (WEEL)
	Skin			
		C	5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Upper Respiratory Tract irritation Headache Hypoxia/cyanosis Danger of cutaneous absorption			

**Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

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.

**Eye protection**

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

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	clear, liquid
Colour	light yellow

**Safety data**

pH	no data available
Melting point/freezing point	Melting point/range: -19 °C (-2 °F) - lit.
Boiling point	82 °C (180 °F) at 31 hPa (23 mmHg) - lit.
Flash point	75 °C (167 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	2.25 %(V)
Upper explosion limit	11 %(V)
Vapour pressure	no data available
Density	0.932 g/cm <sup>3</sup> at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

Heat, flames and sparks.

**Materials to avoid**

Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Other decomposition products - no data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD50 Oral - rat - 18.65 mg/kg

**Inhalation LC50**

no data available

**Dermal LD50**

LD50 Dermal - rabbit - 15.8 mg/kg

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects****Inhalation**

Toxic if inhaled. May cause respiratory tract irritation.

<b>Ingestion</b>	May be fatal if swallowed.
<b>Skin</b>	May be fatal if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

Cough, Shortness of breath, Headache, Nausea, Vomiting, May cause cyanosis., Convulsions

**Synergistic effects**

no data available

**Additional Information**

RTECS: OD9275000

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.22 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.13 mg/l - 48 h

**Persistence and degradability**

Biodegradability	Biotic/Aerobic
	Result: 80 % - Readily biodegradable.

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

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**13. DISPOSAL CONSIDERATIONS****Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1541    Class: 6.1    Packing group: I  
Proper shipping name: Acetone cyanohydrin, stabilized  
Reportable Quantity (RQ): 10 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: Hazard zone B

**IMDG**

UN number: 1541	Class: 6.1	Packing group: I	EMS-No: F-A, S-A
Proper shipping name: ACETONE CYANOHYDRIN, STABILIZED			
Marine pollutant: Marine pollutant			

**IATA**

UN number: 1541    Class: 6.1

Proper shipping name: Acetone cyanohydrin, stabilized  
IATA Passenger: Not permitted for transport  
IATA Cargo: Not permitted for transport

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## 15. REGULATORY INFORMATION

### OSHA Hazards

Combustible Liquid, Target Organ Effect, Toxic by inhalation., Highly toxic by ingestion, Highly toxic by skin absorption

### SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
2-Cyanopropan-2-ol	75-86-5	1993-04-24

### SARA 313 Components

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

	CAS-No.	Revision Date
2-Cyanopropan-2-ol	75-86-5	1993-04-24

### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

	CAS-No.	Revision Date
2-Cyanopropan-2-ol	75-86-5	1993-04-24

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2-Cyanopropan-2-ol	75-86-5	1993-04-24

### New Jersey Right To Know Components

	CAS-No.	Revision Date
2-Cyanopropan-2-ol	75-86-5	1993-04-24

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. 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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