

## Section 1 - Product and Company Information

Product Name CIS-ACONITIC ACID  
 Product Number A3412  
 Brand ALDRICH  
 Company Sigma-Aldrich Canada, Ltd  
 Address 2149 Winston Park Drive  
 Oakville ON L6H 6J8 CA  
 Technical Phone: 9058299500  
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## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	
CIS-ACONITIC ACID	585-84-2	Yes	
Ingredient Name	CAS #	Percent	SARA 313
1,4-DIOXANE	123-91-1	<= 2	Yes
METHANE, DICHLORO-	75-09-2	<= 2	Yes
Formula	C6H6O6		

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Harmful.  
 May form explosive peroxides. May cause cancer. Harmful if swallowed. Irritating to eyes, respiratory system and skin. Harmful by inhalation. May cause sensitization by skin contact. Repeated exposure may cause skin dryness or cracking. Target organ(s): Liver. Kidneys. Calif. Prop. 65 carcinogen. Readily absorbed through skin. Probable Carcinogen (US).

## HMIS RATING

HEALTH: 3\*  
 FLAMMABILITY: 0  
 REACTIVITY: 1

## NFPA RATING

HEALTH: 3  
 FLAMMABILITY: 0  
 REACTIVITY: 1

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

## INHALATION EXPOSURE

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

## DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

## EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

## Section 5 - Fire Fighting Measures

## FLASH POINT

N/A

## AUTOIGNITION TEMP

N/A

## FLAMMABILITY

N/A

## EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

## FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

## Section 6 - Accidental Release Measures

## PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

## METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

## Section 7 - Handling and Storage

## HANDLING

User Exposure: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

## STORAGE

Suitable: Keep tightly closed.  
 Store at -20°C

## Section 8 - Exposure Controls / PPE

## ENGINEERING CONTROLS

Mechanical exhaust required.

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## PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.  
 Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

## GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

## Section 9 - Physical/Chemical Properties

## Appearance

Physical State: Solid  
 Color: Faintly yellow  
 Form: Powder

## Property

Value

At Temperature or Pressure

Molecular Weight 174.11 AMU  
 pH N/A  
 BP/BP Range N/A  
 MP/MP Range 125 °C  
 Freezing Point N/A  
 Vapor Pressure N/A  
 Vapor Density N/A  
 Saturated Vapor Conc. N/A  
 SG/Density N/A  
 Bulk Density N/A  
 Odor Threshold N/A  
 Volatile% N/A  
 VOC Content N/A  
 Water Content N/A  
 Solvent Content N/A  
 Evaporation Rate N/A  
 Viscosity N/A  
 Surface Tension N/A  
 Decomposition Temp. N/A  
 Flash Point N/A  
 Explosion Limits N/A  
 Flammability N/A  
 Autoignition Temp N/A  
 Refractive Index N/A  
 Optical Rotation N/A  
 Miscellaneous Data N/A  
 Solubility N/A

N/A - not available

## Section 10 - Stability and Reactivity

## STABILITY

Stable: Stable.  
 Materials to Avoid: Oxidizing agents.

## HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen chloride gas, Phosgene gas.

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## HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

## Section 11 - Toxicological Information

## ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.  
 Skin Absorption: May be harmful if absorbed through the skin.  
 Eye Contact: Causes eye irritation.  
 Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.  
 Ingestion: May be harmful if swallowed.

## SENSITIZATION

Skin: May cause allergic skin reaction.

## TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Kidneys. Liver. Damage to the liver. Damage to the kidneys. Pancreas.

## SIGNS AND SYMPTOMS OF EXPOSURE

Damage to the kidneys. Nausea, dizziness, and headache. Exposure can cause: Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood. Damage to the liver.

## CONDITIONS AGGRAVATED BY EXPOSURE

The toxicological properties have not been thoroughly investigated. May cause nervous system disturbances.

## CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

## CHRONIC EXPOSURE - TERATOGEN

Result: Laboratory experiments have shown teratogenic effects.

## CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

## Section 12 - Ecological Information

No data available.

## Section 13 - Disposal Considerations

## APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

## Section 14 - Transport Information

## DOT

Proper Shipping Name: None  
 Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

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## IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

## Section 15 - Regulatory Information

## EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn  
 Indication of Danger: Harmful.  
 R: 36/38-40  
 Risk Statements: Irritating to eyes and skin. Limited evidence of a carcinogenic effect.  
 S: 26-36/37  
 Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.

## US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
 Risk Statements: May form explosive peroxides. Harmful if swallowed. May cause cancer. Irritating to eyes, respiratory system and skin. Harmful by inhalation. May cause sensitization by skin contact. Repeated exposure may cause skin dryness or cracking.  
 Safety Statements: Avoid exposure - obtain special instructions before use. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
 US Statements: Target organ(s): Liver. Kidneys. Calif. Prop. 65 carcinogen. Readily absorbed through skin. Probable Carcinogen (US).

## UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes  
 NOTES: These products are subject to SARA section 313 reporting requirements.

## UNITED STATES - STATE REGULATORY INFORMATION

## CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer.

## CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.  
 DSL: No  
 DSL: Yes

## Section 16 - Other Information

## DISCLAIMER

For R&D use only. Not for drug, household or other uses.

## WARRANTY

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

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