



Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810

Number:
Issue Date

CLM-2478
12/21/10

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MATERIAL SAFETY DATA SHEET

1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Description MALONONITRILE (1,2,3-¹³C₃, 99%)

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
ANDOVER, MA 01810
USA

E-mail cilsales@isotope.com
Web Site www.isotope.com

Phone Numbers

Emergency Contact Chemtrec
Emergency Phone 1-800-424-9300 (24 hours)

Customer Service 1-800-322-1174 (8:30-5:30 EST)
Phone
Transportation 1-202-483-7616 (24 hours)

2 HAZARDS IDENTIFICATION

OSHA Hazards

Highly toxic by inhalation, Highly toxic by ingestion, Toxic by skin absorption

Target Organs

Blood, Central nervous system, cardiovascular system

GHS Label Information

Signal Word Danger

Hazards Identification

Skull & crossbones
Environment

Hazard Statement(s)

Fatal if swallowed.
Toxic in contact with skin.
Toxic if inhaled.
Causes mild skin irritation.
Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s)



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Avoid breathing dust/fume/gas/mist/vapours/spray
Wash skin thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Call a POISON CENTER or doctor/physician.
Dispose of contents/container to an approved waste disposal plant.

HMIS Ratings

Chronic Health	*
Physical	0
Flammability	0
Health	4

NFPA Codes

Fire	2
Health	2
Reactivity	0

Potential Health Effects

Eyes	Contact may cause eye irritation.
Ingestion	May be fatal if swallowed.
Inhalation	May be fatal if inhaled. May cause respiratory tract irritation.
Skin	Toxic if absorbed through skin. May cause skin irritation.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Composition / Information on Ingredients

Synonyms	Dicyanomethane
Chemical Formula	*CH2(*CN)2
Molecular Weight	69.04
CAS No.	109-77-3 (unlabeled)
EC No.	203-703-2
Index No.	608-009-00-7

4 FIRST AID MEASURES

First Aid Measures

Eyes	Flush eyes with water as a precaution.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.



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Inhalation	If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin	Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
Additional Information	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

5 FIRE FIGHTING MEASURE

Fire Fighting Measures

Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
Fire Fighting Equipment	Wear self contained breathing apparatus for fire fighting if necessary.

6 ACCIDENTAL RELEASE MEASURES

Accidental Release Measures

Personal Precautions	Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleanup	Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7 HANDLING AND STORAGE

Precautions for Safe Handling

Handling	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.
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Conditions for Safe Storage

Storage	Store at room temperature away from light and moisture.
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8 EXPOSURE CONTROL / PERSONAL PROTECTION

Personal Protection

Eyes - Face	Wear safety glasses with side shields (or goggles) and a face shield.
Skin	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory	When appropriate, use NIOSH/CEN approved respirator.
Protective Clothing	Wear suitable protective clothing and gloves.
Work Hygienic Practices	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Form	Solid
pH	No data available
Melting Point	30 - 32 °C (86 - 90 °F) - lit
Flashpoint	86 °C (187 °F) - closed cup
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Density	1.049 g/cm ³ at 25 °C (77 °F)
Solubility in Water	No data available
Auto Ignition Temperature	No data available

10 STABILITY AND REACTIVITY

Stability and Reactivity

Chemical Stability	Stable if stored under recommended conditions.
Conditions to Avoid	Do not heat over 130 C
Hazardous decomposition products	Formed under fire conditions - Carbon oxides, Nitrogen oxides (NO _x)



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Materials to avoid Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents

11 TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral Mouse 19 mg/kg
Serious No data available
Damage/Eye
Irritation

Skin Skin - rabbit - Mild skin irritation - 4 h
Corrosion/Irritation

Inhalation No data available

Respiratory or Skin Not available
Sensitization

Genotoxicity in vitro Not a mutagenic in Ames Test. Histidine reversion (Ames)
Ames test

IARC No component of the product present at levels greater than or equal to 0.1 % is identifiable 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 identifiable 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 Not available
Toxicity

Specific Target Organ Toxicity

Single Exposure No data available
Repeated Exposure No data available

Signs and Symptoms of Exposure

May be partially metabolized to cyanide in the body.
The onset of symptoms is generally delayed pending conversion to cyanide.
Headache
Dizziness
Convulsions
Cyanosis
Irregular breathing
Lung irritation
Central nervous system depression



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Other Information

RTECS OO3150000

12 ECOLOGICAL INFORMATION

Toxicity

Toxicity to Fish Pimephales promelas (fathead minnow) - 0.51 mg/l - 96 h
LC50

Toxicity to Daphnia Daphnia magna (Water flea) - 21.4 mg/l - 24 h
and Other Aquatic
Invertebrates EC50

Persistence and Not available
Degradability

Bioaccumulative Not available
Potential

Mobility in Soil Not available

PBT and vPvB Not available
Assessment

Other Adverse An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Effects Very toxic to aquatic life with long lasting effects.

13 DISPOSAL CONSIDERATIONS

Disposal Considerations

Product Disposal Waste materials should be disposed of under conditions which meet Federal, State, and Local
environmental control regulations.

14 TRANSPORT INFORMATION

Transportation Information-DOT/IATA/IMDG

UN Number 2647
Proper Shipping Malononitrile
Name
Hazard Class 6.1
Packing Group II
Reportable Quantity 1000 lbs



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(RQ) DOT US
Marine Pollutant No
Poison Inhalation No
Hazard

15 REGULATORY INFORMATION

Regulatory Information

Highly toxic by inhalation, Highly toxic by ingestion, Toxic by skin absorption

SARA

Sara 302 Yes
Component
Sara 313 Yes
Component

SARA 311/312 Hazards

Acute (Y/N) Y

STATE REGULATIONS

Massachusetts Yes
Right to Know
Pennsylvania Right Yes
to Know
New Jersey Right Yes
to Know

California This product does not contain any chemicals known to State of California to cause cancer, birth
Proposition 65 defects, or any other reproductive harm.

Canada

DSL Status All components of this product are on the Canadian DSL list.

EU

Hazard Toxic. Dangerous for environment.

Safety Statements

Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
Take off immediately all contaminated clothing.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment. Refer to special instructions/safety data sheet.



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Risk Statements

Toxic by inhalation, in contact with skin and if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16 OTHER INFORMATION

Additional MSDS Information

This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Approved On 12/21/10
Version Number 1