



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

Number:  
Issue Date

CDLM-629  
08/29/12

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## MATERIAL SAFETY DATA SHEET

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### 1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Description BENZENE (13C6, 99%; D6, 98%)

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

E-mail [cilsales@isotope.com](mailto:cilsales@isotope.com)  
Web Site [www.isotope.com](http://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

Flammable liquid, Carcinogen, Target Organ Effect, Irritant.

#### Target Organs

Blood, Eyes, Female reproductive system, Bone marrow.

#### GHS Classification

Flammable liquids (Category 2)  
Acute toxicity, Oral (Category 5)  
Aspiration Hazard (Category 1)  
Skin irritation (Category 2)  
Eye irritation (Category 2)  
Germ Cell Mutagenicity (Category 1A, 1B)  
Carcinogenicity (Category 1A, 1B)  
Hazardous to the aquatic environment, Acute hazard (Category 2)

#### GHS Label Information

Signal Word Danger



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### Hazards Identification

Flame  
Health hazard  
Exclamation mark

### Hazard Statement(s)

Highly flammable liquid and vapour.  
May be harmful if swallowed.  
May be fatal if swallowed and enters airways.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause genetic defects.  
May cause cancer.  
Toxic to aquatic life.

### Precautionary Statement(s)

Obtain special instructions before use.  
Keep away from heat/sparks/open flames/hot surfaces- No smoking.  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
IF IN EYES: Rinse with water for several minutes. Remove contact lenses.  
IF exposed or concerned: Get medical advice/attention.  
Do NOT induce vomiting.

### HMIS Ratings

Chronic Health	*
Physical	0
Flammability	3
Health	2

### NFPA Codes

Fire	3
Health	2
Reactivity	0

### Potential Health Effects

Eyes	Causes eye irritation.
Ingestion	Aspiration hazard if swallowed - can enter lungs and cause damage.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through the skin. Causes skin irritation.

## 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Composition / Information on Ingredients

CAS No.	71-43-2 (Unlabeled)
EC No.	200-753-7
Index No.	601-020-00-8



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### 4 FIRST AID MEASURES

#### First Aid Measures

Eyes	Flush eye with water for 15 minutes. Get medical attention.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin	Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. GET MEDICAL ATTENTION. Contaminated clothing should be discarded in a manner which limits further exposure.
Additional Information	Move out of dangerous area. Consult a physician and show this safety data sheet.

### 5 FIRE FIGHTING MEASURE

#### Fire Fighting Measures

Extinguishing Media	For large fires, apply water from as far as possible applied in large quantities as a mist or spray. For small fires, use "alcohol" foam, dry chemical or carbon dioxide.
Explosion Hazards	May cause flash fire or explosion.
Fire Fighting Equipment	Wear self contained breathing apparatus for fire fighting if necessary.
Fire Fighting Procedures	Use water spray to cool unopened containers.

### 6 ACCIDENTAL RELEASE MEASURES

#### Accidental Release Measures

Personal Precautions	Use personal protective equipment, and ensure adequate ventilation. Avoid breathing vapors, mist, gas. Remove ignition sources, and move personnel to safe area. Vapors accumulate especially in low areas to form explosive concentrations.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.



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Methods and materials for containment and cleanup      Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.

### 7 HANDLING AND STORAGE

#### Precautions for Safe Handling

Handling      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

Storage      Keep container tightly closed in a cool, dry and well-ventilated place. Opened containers must be carefully resealed and kept upright to prevent leakage.

### 8 EXPOSURE CONTROL / PERSONAL PROTECTION

#### OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

CHEMICAL NAME		OSHA PEL	ACGIH TLV
BENZENE	TWA	10 ppm	0.5 ppm
	STEL		2.5 ppm

#### Personal Protection

Eyes - Face      Wear safety glasses with side shields (or goggles) and a face shield.

Respiratory      Wear appropriate NIOSH/MSHA approved respirator.

Protective Clothing      Wear suitable gloves.

### 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Physical and Chemical Properties (Unlabeled Compound)

Form	Liquid
Color	Colourless
pH	No data available
Melting Point	5.5 °C (41.9 °F) - lit
Boiling Point	80 °C (176 °F) - lit



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Flashpoint	-11.0 °C (12.2 °F) - closed cup
Lower Explosion Limit	1.3% (V)
Upper Explosion Limit	8% (V)
Vapor Pressure	221.3 hPa (166.0 mmHg) at 37.7 °C (99.9 °F)
Density	0.874 g/cm <sup>3</sup> at 25 °C (77 °F)
Solubility in Water	No data available
Partition Coefficient	log Pow: -0.77
Auto Ignition Temperature	562 °C (1,044 °F)

### 10 STABILITY AND REACTIVITY

#### Stability and Reactivity

Chemical Stability	Stable if stored under recommended conditions.
Possibility of Hazardous Reactions	Vapors may form explosive mixture with air.
Conditions to Avoid	Avoid Heat, Flames and Sparks.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. - Carbon oxides.
Materials to avoid	Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals.

### 11 TOXICOLOGICAL INFORMATION

#### Acute Toxicity

LC50 Inhalation Rat	female - 4 h - 44,700 mg/m <sup>3</sup>
LD50 Dermal Rabbit	8,263 mg/kg
LD50 Oral Rat	2,990 mg/kg
Serious Damage/Eye Irritation	Eyes - rabbit - Eye irritation - 24 h
Skin Corrosion/Irritation	Skin - rabbit - Skin irritation - 24 h
Inhalation	No data available.



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Respiratory or Skin Sensitization	Not available.
Germ Cell Mutagenicity	Not available.
Genotoxicity in vivo Mouse	Inhalation. Sister chromatid exchange.
IARC	No component of this 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 identifiable 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	Not available.
Specific Target Organ Toxicity	
Single Exposure	Causes damage to organs.
Repeated Exposure	No data available.
Other Information	
RTECS	CY1400000

### 12 ECOLOGICAL INFORMATION

#### Toxicity

Toxicity to Fish LC50	Oncorhynchus mykiss (rainbow trout) - 5.90 mg/l - 96 h
Toxicity to Daphnia and Other Aquatic Invertebrates EC50	Daphnia magna (Water flea) - 22.0 mg/l - 48 h
Toxicity to Algae and Other Aquatic Plants ErC50	Pseudokirchneriella subcapitata (green algae) - 29.00 mg/l - 72 h

### 13 DISPOSAL CONSIDERATIONS

#### Disposal Considerations



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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	1114
Prop. Ship. Name	Benzene
Hazard Class	3
Packing Group	II
Reportable Quantity (RQ) DOT US	10 lbs.
Marine Pollutant	No
Poison Inhalation Hazard	No

### 15 REGULATORY INFORMATION

Regulatory Information

Flammable liquid, Carcinogen, Target Organ Effect, Irritant.

SARA

Sara 302 Component	No chemicals in this material are subject to the reporting requirements.
Sara 313 Component	No chemicals in this material are subject to the reporting requirements.

SARA 311/312 Hazards

Fire (Y/N)	Y
Acute (Y/N)	Y
Chronic (Y/N)	Y

STATE REGULATIONS

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



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California Proposition 65      WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

### Canada

DSL Status      All components of this product are on the Canadian DSL list.  
EU  
Hazard      Flammable. Toxic.

### Safety Statements

Avoid exposure - obtain special instructions before use.  
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### Risk Statements

May cause cancer.  
May cause heritable genetic damage.  
Highly flammable.  
Irritating to eyes and skin.  
Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.  
Harmful: may cause lung damage if swallowed.

## 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      08/29/12  
Version Number      2