1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Description BENZENE-D6 "100%" (D, 99.96%)

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
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
MATERIAL SAFETY DATA SHEET

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

- Chemical Formula: C6D6
- Molecular Weight: 84.15
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.
MATERIAL SAFETY DATA SHEET

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)

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE</td>
<td>TWA 10 ppm</td>
<td>STEL 0.5 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL 2.5 ppm</td>
<td></td>
</tr>
</tbody>
</table>

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

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
Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.
Melting Point 5.5 °C (41.9 °F) - lit
Boiling Point 80 °C (176 °F) - lit
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/cm³ 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/m3
LD50 Dermal Rabbit 8,263 mg/kg
LD50 Oral Rat Serious Damage/Eye Irritation 2,990 mg/kg
Skin - rabbit - Eye irritation - 24 h
Corrosion/Irritation Skin - rabbit - Skin irritation - 24 h
**MATERIAL SAFETY DATA SHEET**

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>No data available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory or Skin Sensitization</td>
<td>Not available.</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Genotoxicity in vivo Mouse</td>
<td>Inhalation. Sister chromatid exchange.</td>
</tr>
<tr>
<td>IARC</td>
<td>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.</td>
</tr>
<tr>
<td>ACGIH</td>
<td>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.</td>
</tr>
<tr>
<td>NTP</td>
<td>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.</td>
</tr>
<tr>
<td>OSHA</td>
<td>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.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity</td>
<td>Causes damage to organs.</td>
</tr>
<tr>
<td>Single Exposure</td>
<td>Causes damage to organs.</td>
</tr>
<tr>
<td>Repeated Exposure</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**12 ECOLOGICAL INFORMATION**

**Toxicity**

<table>
<thead>
<tr>
<th>Toxicity to Fish LC50</th>
<th>Oncorhynchus mykiss (rainbow trout) - 5.90 mg/l - 96 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to Daphnia and Other Aquatic Invertebrates EC50</td>
<td>Daphnia magna (Water flea) - 22.0 mg/l - 48 h</td>
</tr>
<tr>
<td>Toxicity to Algae and Other Aquatic Plants ErC50</td>
<td>Pseudokirchneriella subcapitata (green algae) - 29.00 mg/l - 72 h</td>
</tr>
</tbody>
</table>
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 1114
Prop. Ship. Name Benzene
Hazard Class 3
Packing Group II
Reportable Quantity 10 lbs.
(RQ) DOT US
Marine Pollutant No
Poison Inhalation No
Hazard

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