



Cambridge Isotope Laboratories, Inc.
3 Highwood Drive
Tewksbury, MA 01876

Number:
Issue Date

ULM-2427
12/04/14

Page 1 of 10

MATERIAL SAFETY DATA SHEET

1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Description MIREX UNLABELED

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

Carcinogen, Target Organ Effect, Toxic by ingestion, Toxic by skin absorption

Target Organs

Liver

GHS Classification

Acute toxicity, Oral (Category 3)
Acute toxicity, Dermal (Category 3)
Carcinogenicity (Category 2)
Reproductive toxicity (Category 2)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label Information

Signal Word Danger

Hazards Identification

Health hazard
Skull & crossbones
Environment



Cambridge Isotope Laboratories, Inc.
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Number:
Issue Date

ULM-2427
12/04/14

Page 2 of 10

MATERIAL SAFETY DATA SHEET

Hazard Statement(s)

- Toxic if swallowed or in contact with skin.
- Suspected of causing cancer.
- Suspected of damaging fertility or the unborn child.
- Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wash skin thoroughly after handling.
- Do not eat, drink, or smoke when using this product.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- IF ON SKIN: Wash with plenty of soap and water.
- IF exposed or concerned: Get medical/attention.
- Specific measures (see supplemental first aid instructions on this label).
- Rinse mouth.
- Remove/take off immediately all contaminated clothing.
- Wash contaminated clothing before reuse.
- Collect spillage.
- Store locked up.
- Dispose of contents/ container to an approved waste disposal plant.

HMIS Ratings

Chronic Health	*
Physical	0
Flammability	0
Health	2

NFPA Codes

Fire	0
Health	2
Reactivity	0

Potential Health Effects

Eyes	Contact may cause eye irritation.
Ingestion	Toxic if swallowed.
Inhalation	May be harmful 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

Chemical Formula C10Cl12



Cambridge Isotope Laboratories, Inc.
3 Highwood Drive
Tewksbury, MA 01876

Number:
Issue Date

ULM-2427
12/04/14

Page 3 of 10

MATERIAL SAFETY DATA SHEET

Molecular Weight 545.5
CAS No. 2385-85-5
EC No. 219-196-6
Index No. 602-077-00-1

4 FIRST AID MEASURES

First Aid Measures

Eyes Flush eye with water for 15 minutes. Get medical attention.

Ingestion Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Skin Wash with soap and plenty of water. Consult a physician.

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

Hazardous Decomposition Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas.

Fire Fighting Equipment Wear self contained breathing apparatus for fire fighting if necessary.

6 ACCIDENTAL RELEASE MEASURES

Accidental Release Measures

Personal Precautions Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental Precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains.



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Number:
Issue Date

ULM-2427
12/04/14

Page 4 of 10

MATERIAL SAFETY DATA SHEET

Methods and materials for containment and cleanup Pick up and arrange disposal without creating dust. Sweep up and shovel. 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.

Conditions for Safe Storage

Storage Store at room temperature away from light and moisture.

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 (Unlabeled Compound)

Form Solid

Color No data available

Odor No data available

Odor Threshold No data available

pH No data available



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Number:
Issue Date

ULM-2427
12/04/14

Page 5 of 10

MATERIAL SAFETY DATA SHEET

Melting Point	485°C
Boiling Point	No data available
Flashpoint	No data available
Evaporation Rate	No data available
Fammability	
Flammable Limits	No data available
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Density	No data available
Solubility in Water	No data available
Partition Coefficient	log Pow: 5.28
Auto Ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available

10 STABILITY AND REACTIVITY

Stability and Reactivity

Chemical Stability	Stable if stored under recommended conditions.
Conditions to Avoid	Not available
Hazardous decomposition products	Formed under fire conditions: Carbon oxides, Hydrogen chloride gas
Materials to avoid	Strong oxidizing agents

11 TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Dermal Rabbit	800 mg/kg Behavioral: Somnolence (general depressed activity); Diarrhea
LD50 Oral Rat	235 mg/kg
Serious Damage/Eye Irritation	No data available



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Number:
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ULM-2427
12/04/14

Page 6 of 10

MATERIAL SAFETY DATA SHEET

Skin Corrosion/Irritation	No data available
Inhalation	No data available
Respiratory or Skin Sensitization	Not available
Germ Cell Mutagenicity	Genotoxicity in vitro - rat - Oral Other mutation test systems Genotoxicity in vivo - mouse - Oral Other mutation test systems
Genotoxicity in vivo Mouse	Oral - Other mutation test systems
Carcinogenicity	Carcinogenicity - rat - Oral Tumorigenic: Carcinogenic by RTECS criteria. Liver: Tumors. Carcinogenicity - rat - Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Carcinogenicity - mouse - Oral Tumorigenic: Carcinogenic by RTECS criteria. Liver: Tumors. Limited evidence of carcinogenicity in animal studies.
IARC	2B- Group 2B: Possibly carcinogenic to humans.
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	Reasonably anticipated to be a human carcinogen.
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.



Cambridge Isotope Laboratories, Inc.
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Number:
Issue Date

ULM-2427
12/04/14

Page 7 of 10

MATERIAL SAFETY DATA SHEET

Reproductive Toxicity

Suspected human reproductive toxicant
no data available

Reproductive toxicity - rat - Oral

Maternal Effects: Ovaries, fallopian tubes. Maternal Effects: Uterus, Cervix, vagina. Effects on Embryo or fetus: Fetotoxicity (except death, e.g., stunted fetus)

Reproductive toxicity - rat - Oral

Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females).

Reproductive toxicity - rat - Oral

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Other developmental abnormalities.

Reproductive toxicity - rat - Oral

Effects on Fertility: Litter size (e.g.: # fetuses per litter; measured before birth). Specific Development Abnormalities: Homeostasis Specific Development Abnormalities: Musculoskeletal system.

Reproductive toxicity - rat - Subcutaneous

Maternal Effects: Uterus, cervix, vagina.

Reproductive toxicity - rat - Unreported

Effects on Newborn: Stillbirth. Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive)

Reproductive toxicity - mouse - Oral

Effects on Fertility: Other measures of fertility

Reproductive toxicity - mouse - Oral

Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Reproductive toxicity - Mammal - Unreported

Effects on Newborn: Stillbirth. Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Developmental Toxicity - rat - Oral

Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow). Specific Developmental Abnormalities: Homeostasis

Developmental toxicity - Mammal - Unreported

Specific Developmental Abnormalities: Eye, ear. Specific Development Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Respiratory system.



Cambridge Isotope Laboratories, Inc.
3 Highwood Drive
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Number:
Issue Date

ULM-2427
12/04/14

Page 8 of 10

MATERIAL SAFETY DATA SHEET

Specific Target Organ Toxicity

Single Exposure No data available
Repeated Exposure No data available

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Other Information

RTECS PC8225000

12 ECOLOGICAL INFORMATION

Toxicity

Toxicity to Fish LC50 Oncorhynchus mykiss (rainbow trout) - 0.023 mg/l - 96 h

Toxicity to Daphnia and Other Aquatic Invertebrates EC50 Daphnia magna (Water flea) - 2.6 mg/l - 2.6 mg/l - 48 h

Persistence and Degradability Not available

Bioaccumulative Potential Bioaccumulation Pimephales promelas (fathead minnow) - 32 d - 1.2 ug/l
Bioconcentration factor (BCF): 18,100

Mobility in Soil Not available

PBT and vPvB Assessment Not available

Other Adverse Effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13 DISPOSAL CONSIDERATIONS

Disposal Considerations

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



Cambridge Isotope Laboratories, Inc.
3 Highwood Drive
Tewksbury, MA 01876

Number:
Issue Date

ULM-2427
12/04/14

Page 9 of 10

MATERIAL SAFETY DATA SHEET

14 TRANSPORT INFORMATION

Transportation Information-DOT/IATA/IMDG

UN Number	2811
Prop. Ship. Name	Toxic solids, organic, n.o.s., (Mirex)
Hazard Class	6.1
Packing Group	III
Marine Pollutant	Marine pollutant
Poison Inhalation Hazard	No

15 REGULATORY INFORMATION

Regulatory Information

Carcinogen, Target Organ Effect, Toxic by ingestion, Toxic by skin absorption

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

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

California Proposition 65	WARNING! This product contains a chemical known by the state of California to cause cancer.
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Canada



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Number:
Issue Date

ULM-2427
12/04/14

Page 10 of 10

MATERIAL SAFETY DATA SHEET

DSL Status No
EU Hazard Toxic. Harmful. Dangerous for the environment.

Safety Statements

Keep locked up.
When using do not eat, drink or smoke.
After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
If swallowed, seek medical advice immediately and show this container or label.
Avoid exposure - obtain special instructions before use.
Dispose of this material and its container at hazardous or special waste collection point
Avoid release to the environment. Refer to special instructions/safety data sheet
If swallowed, rinse mouth with water (only if the person is conscious)

Risk Statements

Toxic in contact with skin and if swallowed.
Limited evidence of a carcinogenic effect.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Possible risk of impaired fertility.
Possible risk of harm to the unborn child.

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 12/04/14
Version Number 2