

## SAFETY DATA SHEET

Preparation Date: 09/12/2016

Revision Date: Not Applicable

Revision Number: Not Applicable

### 1. IDENTIFICATION

#### Product identifier

**Product code:** I2025  
**Product Name:** Isobutyl Mercaptan

#### Other means of identification

**Synonyms:** Isobutanethiol  
 Isobutyl thiol  
 1-Propanethiol, 2-methyl-

**CAS #:** 513-44-0  
**RTECS #** TZ7630000  
**CI#:** Not available

#### Recommended use of the chemical and restrictions on use

**Recommended use:** For manufacturing or laboratory use only.  
**Uses advised against** Not for food or drug use.

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000.

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300

**Contact Person:** Martin LaBenz (West Coast)

**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

#### Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 2

#### Label elements

##### **Danger**

##### **Hazard statements**

Causes skin irritation  
 Causes serious eye irritation  
 May cause respiratory irritation  
 Highly flammable liquid and vapor



**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

Not available

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/ /equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool  
Wear protective gloves  
Wear eye/face protection

**Precautionary Statements - Response**

IN CASE OF FIRE: Use dry chemical, water spray, alcohol-resistant foam or CO2 to extinguish.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
If skin irritation occurs: Get medical advice/attention  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed  
Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %
Isobutyl Mercaptan	513-44-0	100

**4. FIRST AID MEASURES**

**First aid measures**

**General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.

**Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Causes skin irritation. Causes serious eye irritation. Irritating to respiratory system.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media:** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray, mist, or foam.

**Unsuitable Extinguishing Media:** Do not use a solid (straight) water stream as it may scatter and spread fire.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:** Carbon Oxides. Sulfur Oxides.

**Specific hazards:** Flammable  
May be ignited by heat, sparks or flames  
Vapor may travel considerable distance to source of ignition and flash back  
Vapors may form explosive mixtures with air  
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)  
Container explosion may occur under fire conditions or when heated  
Fire may produce irritating and/or toxic gases

**Special Protective Actions for Firefighters**

**Specific Methods:** Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

**Methods for containment** Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

#### **Safe Handling Advice**

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Take precautionary measures against static discharges. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

#### **Incompatible Materials:**

Oxidizing agents  
Strong oxidizing agents  
Alkalis  
Alkali Metals  
Bases  
Reducing agents

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

### **National occupational exposure limits**

## United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Isobutyl Mercaptan	513-44-0	None	None	None	None

## Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Isobutyl Mercaptan	513-44-0	None	None	None	None

## Australia and Mexico

Components	CAS-No.	Australia	Mexico
Isobutyl Mercaptan	513-44-0	None	None

## Appropriate engineering controls

### Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

## Individual protection measures, such as personal protective equipment

### Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Gloves. Long sleeved clothing. Chemical resistant apron.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Liquid	<b>Appearance:</b> Clear.	<b>Color:</b> Colorless to pale yellow.
<b>Odor:</b> No information available.	<b>Taste</b> No information available.	<b>Formula:</b> C4H10S
<b>Molecular/Formula weight:</b> 90.18	<b>Flammability:</b> Combustible	<b>Flashpoint (°C/°F):</b> -10°C (14°F)
<b>Flash Point Tested according to:</b> Closed cup	<b>Autoignition Temperature (°C/°F):</b> No information available	<b>Lower Explosion Limit (%):</b> No information available
<b>Upper Explosion Limit (%):</b> No information available	<b>Melting point/range(°C/°F):</b> No information available	<b>Decomposition temperature(°C/°F):</b> No information available
<b>Boiling point/range(°C/°F):</b> 87° - 89°C (189° - 192°F)	<b>Bulk density:</b> No information available	<b>Density (g/cm3):</b> 0.83
<b>Specific gravity:</b> No information available	<b>pH:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available

**Evaporation rate:**  
No information available

**Vapor density:**  
No information available

**VOC content (g/L):**  
No information available

**Odor threshold (ppm):**  
No information available

**Partition coefficient  
(n-octanol/water):**  
No information available

**Viscosity:**  
No information available

**Miscibility:**  
No information available

**Solubility:**  
Slightly soluble in water  
Soluble in Ether  
Soluble in Alcohol

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with oxidizing agents

### Chemical stability

**Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:**  
Oxidizing agents  
Strong oxidizing agents  
Alkalis  
Alkali Metals  
Bases  
Reducing agents

**Hazardous decomposition products:** Carbon oxides. Sulfur oxides.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Skin. Eyes. Ingestion. Inhalation.

### Acute Toxicity

### **Component Information**

Isobutyl Mercaptan

CAS-No. 513-44-0

**LD50/oral/rat** = 7168 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = No information available  
**LD50/dermal/rat** = 7168 mg/kg Oral LD50  
**LC50/inhalation/rat** = No information available

LC50/inhalation/mouse = No information available  
 Other LD50 or LC50 information = No information available

**Product Information**

LD50/oral/rat =  
 VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =  
 Value - Acute Tox Oral = No information available

LD50/dermal/rabbit  
 VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat  
 VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat  
 VALUE-Vapor = No information available  
 VALUE-Gas = No information available  
 VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse  
 VALUE-Vapor = No information available  
 VALUE - Gas = No information available  
 VALUE - Dust/Mist = No information available

Symptoms

**Skin Contact:** Causes skin irritation.  
**Eye Contact:** Causes eye irritation.  
**Inhalation** Irritating to respiratory system. Symptoms may include coughing and wheezing. Other symptoms may include sore throat, chest tightness, coughing.  
**Ingestion** Health injuries are not known or expected under normal use.  
**Aspiration hazard** No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Chronic Toxicity** No information available.  
**Sensitization:** No information available.  
**Mutagenic Effects:** No information available  
**Carcinogenic effects:** Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Isobutyl Mercaptan	513-44-0	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** Respiratory system.  
**STOT - repeated exposure** No information available.  
**Target Organs:** No information available.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.  
**Persistence and degradability:** No information available  
**Bioaccumulative potential:** No information available.  
**Mobility:** No information available.

**13. DISPOSAL CONSIDERATIONS**

**Disposal Methods**

**Waste from residues / unused products:**  
 Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**  
 Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Isobutyl Mercaptan	513-44-0	None	None	None	None

**14. TRANSPORT INFORMATION**

**DOT**

**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Subsidiary Class** 3  
**Packing group:** II  
**Emergency Response Guide Number** 130  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions** A3, A6, IB2, T4, TP1  
**Symbol(s):** No information available  
**Description:** UN2347, Butyl mercaptan, 3, II

**TDG (Canada)**  
**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Subsidiary Risk:** 3  
**Packing Group:** II  
**Marine Pollutant Description:** No Information available  
UN2347, Butyl mercaptan, 3, II

**ADR**  
**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Packing Group:** II  
**Subsidiary Risk:** 3  
**Description:** UN2347, Butyl mercaptan, 3, II

**IMO / IMDG**  
**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Subsidiary Risk:** 3  
**Packing Group:** II  
**Marine Pollutant Description:** No information available  
**EMS:** F-E  
**Description:** UN2347, Butyl mercaptan, 3, II

**RID**  
**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Subsidiary Risk:** 3  
**Packing Group:** II  
**Description:** UN2347, Butyl mercaptan, 3, II

**ICAO**  
**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Subsidiary Risk:** 3  
**Packing Group:** II  
**Description:** UN2347, Butyl mercaptan, 3, II

**IATA**  
**UN-No:** UN2347  
**Proper Shipping Name:** Butyl mercaptan  
**Hazard Class:** 3  
**Subsidiary Risk:** 3  
**Packing Group:** II  
**ERG Code:** 3L  
**Special Provisions Description:** No information available  
UN2347, Butyl mercaptan, 3, II

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines	Japan ENCS	CHINA	Australia	EINECS-No.
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				<b>(PICCS)</b>			<b>(AICS)</b>	
<i>Isobutyl Mercaptan</i>	513-44-0	Present	Not present	Present	Present (2)-464	Present	Present	Present 208-162-6

## U.S. Regulations

*Isobutyl Mercaptan*

**FDA - 21 CFR - Total Food Additives** Present (Not Regulated under 21 CFR)

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**

**Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Isobutyl Mercaptan</i>	513-44-0	Not Listed	Not Listed	Not Listed	Not Listed

## CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Isobutyl Mercaptan</i>	513-44-0	None	None	None	None	None

## U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Isobutyl Mercaptan</i>	513-44-0	Not Applicable	Not Applicable

## Canada

**WHMIS hazard class:**

B2 Flammable liquid

D2B Toxic materials

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

## Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
<i>Isobutyl Mercaptan</i>	513-44-0	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
<i>Isobutyl Mercaptan</i>	513-44-0	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
<i>Isobutyl Mercaptan</i>	513-44-0	Not listed

## EU Classification

**R-phrases(s)**

R11 - Highly flammable.

R36/37/38 - Irritating to eyes, respiratory system and skin.

**Product code:** I2025

**Product name:** Isobutyl Mercaptan

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**S -phrase(s)**

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Isobutyl Mercaptan	513-44-0		No information	

**The product is classified in accordance with Annex VI to Directive 67/548/EEC****Indication of danger:**

F - Highly flammable.

Xi - Irritant.

**F****Xi****16. OTHER INFORMATION**

**Preparation Date:** 09/12/2016  
**Revision Date:** Not Applicable  
**Prepared by:** Roumann Pangilinan

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**