

## SAFETY DATA SHEET

Preparation Date: 2/10/2016

Revision Date: 2/10/2016

Revision Number: G1

### 1. IDENTIFICATION

**Product identifier**

**Product code:** B1157  
**Product Name:** 1-BROMOPROPANE, REAGENT

**Other means of identification**

**Synonyms:** Propyl bromide  
 n-Propyl bromide  
**CAS #:** 106-94-5  
**RTECS #** TX4110000  
**CI#:** Not available

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

**Recommended use:** Solvent. Chemical intermediate.  
**Uses advised against** No information available

**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 by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Flammable liquids	Category 2

**Label elements**

## Danger

### Hazard statements

Causes skin irritation  
Causes serious eye irritation  
May damage fertility or the unborn child  
May cause respiratory irritation. May cause drowsiness or dizziness  
May cause damage to organs through prolonged or repeated exposure  
Highly flammable liquid and vapor



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

Not available

### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wash face, hands and any exposed skin thoroughly after handling  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear protective gloves  
Wear protective gloves/protective clothing/eye protection/face protection

### Precautionary Statements - Response

*IF exposed or concerned: Get medical advice/attention*

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: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

### Precautionary Statements - Storage

Store locked up

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

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

1-Bromopropane 106-94-5	106-94-5	100
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### 4. FIRST AID MEASURES

#### First aid measures

##### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126).

##### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes 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 breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

##### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

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

##### **Symptoms**

Causes eye irritation. Causes skin irritation. May cause central nervous system effects. Drowsiness. Dizziness. Lightheadedness. Headache. It may affect the peripheral nervous system. Paresthesia (numbness and tingling of the extremities). Weakness. Coughing and wheezing. Dyspnea (Difficulty breathing and shortness of breath). May affect the liver.

#### 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:**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. 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 monoxide; Carbon dioxide; Hydrogen bromide gas

**Specific hazards:**

Highly flammable  
May be ignited by heat, sparks or flames  
Container explosion may occur under fire conditions or when heated  
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)  
Fire may produce irritating, corrosive 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. Prevent product from entering drains. Do not let this chemical enter the environment. Prevent entry into waterways, sewers, basements or confined areas.

**Methods and material for containment and cleaning up****Methods for containment**

Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). 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 clean non-sparking tools to collect absorbed material. 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. 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. Bases.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### Control parameters

### **National occupational exposure limits**

#### **United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
1-Bromopropane 106-94-5	None	None	0.1 ppm TWA	None

#### **Canada**

Components	Alberta	British Columbia	Ontario	Quebec
1-Bromopropane 106-94-5	10 ppm TWA 50 mg/m <sup>3</sup> TWA	10 ppm TWA	10 ppm TWA	None

#### **Australia and Mexico**

Components	Australia	Mexico
1-Bromopropane 106-94-5	None	None

### Appropriate engineering controls

#### **Engineering measures to reduce exposure:**

Ensure adequate ventilation. 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 Safety glasses with side-shields

**Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.

**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**

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<b>Physical state:</b> Liquid.	<b>Appearance:</b> No information available	<b>Color:</b> Colorless.
<b>Odor:</b> Sweet.	<b>Taste</b> No information available	<b>Formula:</b> CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> Br
<b>Molecular/Formula weight:</b> 123.00	<b>Flammability:</b> Highly flammable	<b>Flash point (°C):</b> 21
<b>Flashpoint (°C/°F):</b> 21-25.5°C/70-78°F	<b>Flash Point Tested according to:</b> Closed cup	<b>Autoignition Temperature (°C/°F):</b> 490°C/914°F
<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available	<b>pH:</b> No information available
<b>Melting point/range(°C/°F):</b> -100°C/-166°F	<b>Boiling point/range(°C/°F):</b> 71°C/159.8°F	<b>Decomposition temperature(°C/°F):</b> No information available
<b>Bulk density:</b> No information available	<b>Density (g/cm<sup>3</sup>):</b> 1.353 @ 20°C	<b>Specific gravity:</b> 1.353
<b>Vapor pressure @ 20°C (kPa):</b> 14.8	<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 4.25
<b>VOC content (g/L):</b> No information available	<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> 2.10
<b>Viscosity:</b> No information available	<b>Miscibility:</b> No information available	<b>Solubility:</b> Soluble in Acetone Soluble in Ethanol Soluble in Chloroform Soluble in Benzene Soluble in carbon tetrachloride Slightly soluble in water Solubility in Water: 0.25 g/100 mL at 20 deg. C

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with oxidizing agents  
Reactive with bases

### 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. Bases.

#### **Hazardous decomposition products:**

Carbon monoxide. Carbon dioxide. Hydrogen bromide gas.

### 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:**

Ingestion. Skin. Inhalation.

### Acute Toxicity

### Component Information

*1-Bromopropane - 106-94-5*

**LD50/oral/rat** = 3600 mg/kg

**LD50/oral/mouse** = 4700 mg/kg

**LD50/dermal/rat** = No information available

**LD50/dermal/rabbit** = No information available

**LC50/inhalation/rat** = 253 g/m<sup>3</sup> Inhalation LC50 Rat 30 min

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50 information** = No information available

### Product Information

**LD50/oral/rat** =

**VALUE- Acute Tox Oral** = 3600mg/kg

**LD50/oral/mouse** =

**Value - Acute Tox Oral** = 4700mg/kg

**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** = 253000mg/m<sup>3</sup> (30 min)

**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:** Contact causes skin irritation.

**Eye Contact:** Causes serious eye irritation.

**Inhalation** Irritating to respiratory system. May affect behavior/central nervous system. Inhalation of vapors may cause drowsiness and dizziness. May cause headache. May cause muscle weakness. May cause lightheadedness. May cause trouble concentrating. Symptoms may include coughing and wheezing, and shortness of breath. It may affect the liver.

**Ingestion** May affect liver .

**Aspiration hazard** No information available

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

**Chronic Toxicity** Prolonged or repeated inhalation may affect the peripheral nervous system (weakness, peripheral neuropathy with paresthesia - a tingling, pricking, or numbness of the skin (known as the feeling of "pins and needles") generally of the hands and feet (extremities))  
Prolonged or repeated inhalation may affect the liver  
Prolonged or repeated inhalation may affect metabolism (weight loss)

**Sensitization:** No information available

**Mutagenic Effects:** May affect genetic material  
DNA damage - human leukocyte

**Carcinogenic effects:** Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
1-Bromopropane	Not listed	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans	Reasonably Anticipated To Be A Human Carcinogen	Present	Not listed	Not listed

**Reproductive toxicity** May damage fertility or the unborn child

**Reproductive Effects:** May decrease fertility in males and females  
Experiments have shown reproductive toxicity effects in male and female laboratory animals

**Developmental Effects:** May cause adverse developmental effects based on animal data

May cause harm to the unborn child

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** Respiratory system. central nervous system.

**STOT - repeated exposure** Peripheral Nervous System (PNS). Nervous System. liver.

**Target Organs:** Peripheral nervous system. Nervous system. Liver.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** Aquatic environment.

*1-Bromopropane - 106-94-5*

**Freshwater Fish Species Data:** 67.3 mg/L LC50 Pimephales promelas 96 h flow-through 1

1-Bromopropane - 106-94-5

**Persistence and degradability:** No information available  
**Bioaccumulative potential:** Potential for bioconcentration in aquatic organisms is low.  
**Mobility:** It is expected to have very high mobility based on estimated Koc.

### 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	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
1-Bromopropane	None	None	None	None

### 14. TRANSPORT INFORMATION

#### DOT

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**ERG No:** 129  
**Marine Pollutant:** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions:** No Information available  
**Symbol(s):** No information available

#### TDG (Canada)

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available

#### ADR

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Packing Group:** II  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

## 14. TRANSPORT INFORMATION

### IMO / IMDG

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**EMS:** F-E  
**MFAG:** No information available  
**Maximum Quantity:** No information available

### RID

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**Description:** No information available

### IATA

**UN-No:** UN2344  
**Proper Shipping Name:** Bromopropanes  
**Hazard Class:** 3  
**Subsidiary Risk:** No information available  
**Packing Group:** II  
**ERG Code:** 3L

### Special Provisions

**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
1-Bromopropane	Present	Present KE-03707	Present	Present (2)-73	Present	Present	Present 203-445-0

### U.S. Regulations

#### 1-Bromopropane

Massachusetts RTK: Present  
 New Jersey RTK Hazardous Substance List: 4198  
 Pennsylvania RTK: Present

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

Product code: B1157

Product name: 1-BROMOPROPANE,  
REAGENT

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**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:**

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
1-Bromopropane	Not Listed	developmental toxicity	male reproductive toxicity	female reproductive toxicity

**CERCLA/SARA**

Components	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 <i>de minimis</i>
1-Bromopropane	None	None	None	None	None

**U.S. TSCA**

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
1-Bromopropane	Not Applicable	Not Applicable

**Canada****WHMIS hazard class:**

B2 Flammable liquid  
D2A Very toxic materials  
D2B Toxic materials

**1-Bromopropane**

B2 D2A D2B

**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	Canada (DSL)	Canada (NDSL)
1-Bromopropane	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
1-Bromopropane	Not listed	Not listed

**EU Classification****R-phrases)**

R11 - Highly flammable.  
R60 - May impair fertility.  
R63 - Possible risk of harm to the unborn child.  
R67 - Vapors may cause drowsiness and dizziness.  
R36/37/38 - Irritating to eyes, respiratory system and skin.  
R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.

**S -phrase(s)**

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53 - Avoid exposure - obtain special instructions before use.

Components	Classification	Concentration Limits:	Safety Phrases
1-Bromopropane	F; R11 Xi; R36/37/38 Xn; R48/20 Repr.Cat.2; R60 Repr.Cat.3; R63 R67	No information	S53 S45

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Xn - Harmful.

Xi - Irritant.

F - Highly flammable.

Xn



Xi



F

**16. OTHER INFORMATION**

## 16. OTHER INFORMATION

**Preparation Date:** 2/10/2016  
**Revision Date:** 2/10/2016  
**Prepared by:** Sonia Owen

**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**