

## SAFETY DATA SHEET

Creation Date 16-Apr-2012

Revision Date 27-Aug-2021

Revision Number 3

### 1. Identification

**Product Name** 2-Bromobutane

**Cat No. :** A15069

**CAS No** 78-76-2  
**Synonyms** sec-Butyl bromide

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
**Email:** tech@alfa.com  
www.alfa.com

##### **Emergency Telephone Number**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660.  
After normal business hours, call Carechem 24 at (866) 928-0789.

### 2. Hazard(s) identification

#### **Classification**

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

|  |              |
|--|--------------|
| Flammable liquids                                | Category 2   |
| Corrosive to metals                              | Category 1   |
| Skin Corrosion/Irritation                        | Category 1 C |
| Serious Eye Damage/Eye Irritation                | Category 1   |
| Specific target organ toxicity (single exposure) | Category 3   |
| Target Organs - Respiratory system.              |              |

#### Label Elements

##### **Signal Word**

Danger

**Hazard Statements**

Highly flammable liquid and vapor  
 May be corrosive to metals  
 Causes severe skin burns and eye damage  
 May cause respiratory irritation

**Precautionary Statements****Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 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 only in original container  
 Keep cool

**Response**

Immediately call a POISON CENTER or doctor/physician

**Inhalation**

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

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 Wash contaminated clothing before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Spills**

Absorb spillage to prevent material damage

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed  
 Store in corrosive resistant polypropylene container with a resistant inliner  
 Store in a dry place

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Harmful to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

| Component     | CAS No  | Weight % |
|---------------|---------|----------|
| 2-Bromobutane | 78-76-2 | >95      |

#### 4. First-aid measures

|  |  |
|--|--|
| <b>General Advice</b>                      | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.  |
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.  |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.  |
| <b>Inhalation</b>                          | If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.   |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.   |
| <b>Most important symptoms and effects</b> | Causes burns by all exposure routes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>                  | Treat symptomatically  |

#### 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Water mist may be used to cool closed containers. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | 21 °C / 69.8 °F   |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | 265 °C / 509 °F   |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | 6.6%  |
| <b>Lower</b>                            | 2.6%  |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

#### **Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

#### **Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen bromide.

#### **Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

#### **NFPA**

**Health**  
3

**Flammability**  
3

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

|   |  |
|---|--|
| <b>Personal Precautions</b>                 | Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges. |
| <b>Environmental Precautions</b>            | Should not be released into the environment. Do not flush into surface water or sanitary sewer system.   |
| <b>Methods for Containment and Clean Up</b> | Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.  |

## 7. Handling and storage

|                 |   |
|-----------------|---|
| <b>Handling</b> | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges. |
| <b>Storage.</b> | Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong bases. Metals.  |

## 8. Exposure controls / personal protection

|                                      |  |
|--------------------------------------|--|
| <b>Exposure Guidelines</b>           | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.  |
| <b>Engineering Measures</b>          | Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. |
| <b>Personal Protective Equipment</b> |  |
| <b>Eye/face Protection</b>           | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.                                      |
| <b>Skin and body protection</b>      | Wear appropriate protective gloves and clothing to prevent skin exposure.  |
| <b>Respiratory Protection</b>        | No protective equipment is needed under normal use conditions.   |
| <b>Hygiene Measures</b>              | Handle in accordance with good industrial hygiene and safety practice.   |

## 9. Physical and chemical properties

|                            |                             |
|----------------------------|-----------------------------|
| <b>Physical State</b>      | Liquid                      |
| <b>Appearance</b>          | Yellow                      |
| <b>Odor</b>                | aromatic                    |
| <b>Odor Threshold</b>      | No information available    |
| <b>pH</b>                  | Not applicable              |
| <b>Melting Point/Range</b> | -112 °C / -169.6 °F         |
| <b>Boiling Point/Range</b> | 91 °C / 195.8 °F @ 760 mmHg |
| <b>Flash Point</b>         | 21 °C / 69.8 °F             |

|  |                          |
|--|--------------------------|
| Evaporation Rate                       | No information available |
| Flammability (solid,gas)               | Not applicable           |
| Flammability or explosive limits       |                          |
| Upper                                  | 6.6%                     |
| Lower                                  | 2.6%                     |
| Vapor Pressure                         | 70 mbar @ 20 °C          |
| Vapor Density                          | 4.7                      |
| Specific Gravity                       | 1.250                    |
| Solubility                             | No information available |
| Partition coefficient; n-octanol/water | No data available        |
| Autoignition Temperature               | 265 °C / 509 °F          |
| Decomposition Temperature              | No information available |
| Viscosity                              | No information available |
| Molecular Formula                      | C4 H9 Br                 |
| Molecular Weight                       | 137.02                   |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available   |
| <b>Stability</b>                        | Stable under normal conditions.  |
| <b>Conditions to Avoid</b>              | Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Strong bases, Metals  |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen bromide                |
| <b>Hazardous Polymerization</b>         | No information available. Hazardous polymerization does not occur.                       |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

## 11. Toxicological information

### Acute Toxicity

**Product Information** No acute toxicity information is available for this product

### **Component Information**

**Toxicologically Synergistic** No information available

### **Products**

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

**Irritation** Irritating to eyes, respiratory system and skin

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component     | CAS No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|---------------|---------|------------|------------|------------|------------|------------|
| 2-Bromobutane | 78-76-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Respiratory system

**STOT - repeated exposure** None known

|   |   |
|---|---|
| <b>Aspiration hazard</b>                          | No information available  |
| <b>Symptoms / effects, both acute and delayed</b> | Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Endocrine Disruptor Information</b>            | No information available  |
| <b>Other Adverse Effects</b>                      | The toxicological properties have not been fully investigated.  |

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

|                                      |   |
|--------------------------------------|---|
| <b>Persistence and Degradability</b> | Insoluble in water Persistence is unlikely based on information available.  |
| <b>Bioaccumulation/ Accumulation</b> | No information available.   |
| <b>Mobility</b>                      | Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility. |

## 13. Disposal considerations

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Methods</b> | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
|-------------------------------|---|

## 14. Transport information

### DOT

|                             |               |
|-----------------------------|---------------|
| <b>UN-No</b>                | UN2339        |
| <b>Proper Shipping Name</b> | 2-BROMOBUTANE |
| <b>Hazard Class</b>         | 3             |
| <b>Packing Group</b>        | II            |

### TDG

|                             |               |
|-----------------------------|---------------|
| <b>UN-No</b>                | UN2339        |
| <b>Proper Shipping Name</b> | 2-BROMOBUTANE |
| <b>Hazard Class</b>         | 3             |
| <b>Packing Group</b>        | II            |

### IATA

|                             |               |
|-----------------------------|---------------|
| <b>UN-No</b>                | UN2339        |
| <b>Proper Shipping Name</b> | 2-BROMOBUTANE |
| <b>Hazard Class</b>         | 3             |
| <b>Packing Group</b>        | II            |

### IMDG/IMO

|                             |               |
|-----------------------------|---------------|
| <b>UN-No</b>                | UN2339        |
| <b>Proper Shipping Name</b> | 2-BROMOBUTANE |
| <b>Hazard Class</b>         | 3             |
| <b>Packing Group</b>        | II            |

## 15. Regulatory information

### United States of America Inventory

| Component     | CAS No  | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|---------------|---------|------|---|-----------------------------|
| 2-Bromobutane | 78-76-2 | X    | ACTIVE  | -                           |

**Legend:**

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

**International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Japan (ISHL), Japan (ISHL).

| Component     | CAS No  | DSL | NDSL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|---------------|---------|-----|------|-----------|-------|------|------|------|-------|------|
| 2-Bromobutane | 78-76-2 | X   | -    | 201-140-7 | X     | X    | X    | X    | X     | -    |

**U.S. Federal Regulations**

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component     | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| 2-Bromobutane | -             | X          | -            | -        | -            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

**16. Other information**

**Prepared By** Health, Safety and Environmental Department  
 Email: tech@alfa.com  
 www.alfa.com

**Creation Date** 16-Apr-2012  
**Revision Date** 27-Aug-2021  
**Print Date** 27-Aug-2021  
**Revision Summary** SDS authoring systems update, replaces ChemGes SDS No. 78-76-2/2.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**