

## 1 Identification

### Product identifier

**Product name:** 1,2-Dibromoethane

**Stock number:** 36623

**CAS Number:**  
106-93-4

**EC number:**  
203-444-5

**Index number:**  
602-010-00-6

**Relevant identified uses of the substance or mixture and uses advised against.**

**Identified use:** SU24 Scientific research and development

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

#### Manufacturer/Supplier:

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

**Information Department:** Health, Safety and Environmental Department

#### 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 of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Carc. 1A H350 May cause cancer.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

#### Hazard pictograms



GHS06 GHS08

### Signal word

**Danger**

### Hazard statements

H301+H311 Toxic if swallowed or in contact with skin.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H350 May cause cancer.

H335 May cause respiratory irritation.

### Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P320 Specific treatment is urgent (see on this label).

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects



### Classification system

#### HMIS ratings (scale 0-4)

#### (Hazardous Materials Identification System)

HEALTH **2** Health (acute effects) = 2

FIRE **0** Flammability = 0

REACTIVITY **1** Physical Hazard = 1

<b>Product name: 1,2-Dibromoethane</b>	
<b>Other hazards</b> <b>Results of PBT and vPvB assessment</b> <b>PBT:</b> Not applicable. <b>vPvB:</b> Not applicable.	(Contd. of page 1)
<b>3 Composition/information on ingredients</b> <b>Chemical characterization: Substances</b> <b>CAS# Description:</b> 106-93-4 1,2-Dibromoethane <b>Identification number(s):</b> <b>EC number:</b> 203-444-5 <b>Index number:</b> 602-010-00-6	
<b>4 First-aid measures</b> <b>Description of first aid measures</b> <b>General information</b> Immediately remove any clothing soiled by the product. Remove breathing apparatus only after contaminated clothing has been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration. <b>After inhalation</b> Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. <b>After skin contact</b> Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice. <b>After eye contact</b> Rinse opened eye for several minutes under running water. Then consult a doctor. <b>After swallowing</b> Do not induce vomiting; immediately call for medical help. <b>Information for doctor</b> <b>Most important symptoms and effects, both acute and delayed</b> No further relevant information available. <b>Indication of any immediate medical attention and special treatment needed</b> No further relevant information available.	
<b>5 Fire-fighting measures</b> <b>Extinguishing media</b> <b>Suitable extinguishing agents</b> Product is not flammable. Use fire-fighting measures that suit the surrounding fire. <b>Special hazards arising from the substance or mixture</b> If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide Hydrogen bromide (HBr) <b>Advice for firefighters</b> <b>Protective equipment:</b> Wear self-contained respirator. Wear fully protective impervious suit.	
<b>6 Accidental release measures</b> <b>Personal precautions, protective equipment and emergency procedures</b> Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation <b>Environmental precautions:</b> Do not allow material to be released to the environment without proper governmental permits. <b>Methods and material for containment and cleaning up:</b> Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. <b>Prevention of secondary hazards:</b> No special measures required. <b>Reference to other sections</b> See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information.	
<b>7 Handling and storage</b> <b>Handling</b> <b>Precautions for safe handling</b> Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Open and handle container with care. <b>Information about protection against explosions and fires:</b> The product is not flammable <b>Conditions for safe storage, including any incompatibilities</b> <b>Storage</b> <b>Requirements to be met by storerooms and receptacles:</b> No special requirements. <b>Information about storage in one common storage facility:</b> Store away from oxidizing agents. Store away from metals. Store in the dark. <b>Further information about storage conditions:</b> Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from exposure to light. <b>Specific end use(s)</b> No further relevant information available.	
<b>8 Exposure controls/personal protection</b> <b>Additional information about design of technical systems:</b> Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. <b>Components with limit values that require monitoring at the workplace:</b>  1,2-Dibromoethane ppm ACGIH TLV Confirmed animal carcinogen Austria Carcinogen (skin) Belgium Carcinogen (skin) Finland TWA 20; 30-STEL (skin) Carcinogen	(Contd. on page 3)


Product name: <b>1,2-Dibromoethane</b>											
<div>France Carcinogen Hungary 0.8 mg/m3-STEL (skin) Carcinogen Korea TLV Confirmed animal carcinogen Netherlands MAC-TGG 20 (skin) Carcinogen Norway TWA 0.1 Poland TWA 0.5 mg/m3 Sweden Carcinogen Switzerland MAK-W 0.1 (skin) Carcinogen United Kingdom TWA 0.5 (skin) Carcinogen USA PEL 20; 30-CEILING (skin)</div> <div>Control parameters</div> <div>Components with limit values that require monitoring at the workplace:</div> <div>106-93-4 1,2-Dibromoethane (100.0%)</div> <table><tr><td>PEL (USA)</td><td>Long-term value: 20 ppm Ceiling limit value: 30; 50* ppm *5-min peak per 8-hr shift</td></tr><tr><td>REL (USA)</td><td>Long-term value: 0.045 ppm Ceiling limit value: 0.13* ppm *15-min; See Pocket Guide App. A</td></tr><tr><td>TLV (USA)</td><td>Skin</td></tr><tr><td>EL (Canada)</td><td>Long-term value: 0.5 ppm Skin; IARC 2A</td></tr><tr><td>EV (Canada)</td><td>Long-term value: (L) ppm Skin</td></tr></table> <div>Additional information: No data</div> <div>Exposure controls</div> <div>Personal protective equipment</div> <div>General protective and hygienic measures</div> <div>The usual precautionary measures for handling chemicals should be followed.</div> <div>Keep away from foodstuffs, beverages and feed.</div> <div>Remove all soiled and contaminated clothing immediately.</div> <div>Wash hands before breaks and at the end of work.</div> <div>Store protective clothing separately.</div> <div>Avoid contact with the eyes and skin.</div> <div>Maintain an ergonomically appropriate working environment.</div> <div>Breathing equipment: Use self-contained respiratory protective device in emergency situations.</div> <div>Protection of hands:</div> <div>Impervious gloves</div> <div>Check protective gloves prior to each use for their proper condition.</div> <div>The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.</div> <div>Eye protection: Safety glasses</div> <div>Body protection: Protective work clothing.</div>		PEL (USA)	Long-term value: 20 ppm Ceiling limit value: 30; 50* ppm *5-min peak per 8-hr shift	REL (USA)	Long-term value: 0.045 ppm Ceiling limit value: 0.13* ppm *15-min; See Pocket Guide App. A	TLV (USA)	Skin	EL (Canada)	Long-term value: 0.5 ppm Skin; IARC 2A	EV (Canada)	Long-term value: (L) ppm Skin
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9 Physical and chemical properties											
Information on basic physical and chemical properties											
General Information											
Appearance:											
Form:	Liquid										
Color:	Clear										
Odor:	Not determined										
Odor threshold:	Not determined.										
pH-value:	Not determined.										
Change in condition											
Melting point/Melting range:	9 °C (48 °F)										
Boiling point/Boiling range:	132 °C (270 °F)										
Sublimation temperature / start:	Not determined										
Flash point:											
Flammability (solid, gaseous)	Not determined.										
Ignition temperature:	Not determined										
Decomposition temperature:	Not determined										
Auto igniting:	Not determined.										
Danger of explosion:											
Explosion limits:	Product does not present an explosion hazard.										
Lower:	Not determined										
Upper:	Not determined										
Vapor pressure:	Not determined										
Density at 20 °C (68 °F):	2.179 g/cm³ (18.184 lbs/gal)										
Relative density	Not determined.										
Vapor density	Not determined.										
Evaporation rate	Not determined.										
Solubility in / Miscibility with											
Water:	Hydrolyzes slowly										
Partition coefficient (n-octanol/water):	Not determined.										
Viscosity:											
dynamic:	Not determined.										
kinematic:	Not determined.										
Other information	No further relevant information available.										
10 Stability and reactivity											
Reactivity No information known.											
Chemical stability Stable under recommended storage conditions.											
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.											
Possibility of hazardous reactions No dangerous reactions known											
Conditions to avoid No further relevant information available.											
Incompatible materials:											
Oxidizing agents											
Alkali metals											

Product name: 1,2-Dibromoethane	
Alkaline earth metals Magnesium Aluminum/aluminum alloys. Light <b>Hazardous decomposition products:</b> Carbon monoxide and carbon dioxide Hydrogen bromide	(Contd. of page 3)

<b>11 Toxicological information</b>	
<b>Information on toxicological effects</b> <b>Acute toxicity:</b> Fatal if inhaled. Toxic in contact with skin. Toxic if swallowed. Danger through skin absorption.	
<b>LD/LC50 values that are relevant for classification:</b>	
Oral	LD50 108 mg/kg (rat)
Dermal	LD50 300 mg/kg (rabbit)
<b>Skin irritation or corrosion:</b> Causes skin irritation. <b>Eye irritation or corrosion:</b> Causes serious eye irritation. <b>Sensitization:</b> Sensitizing effect by skin contact is possible with prolonged exposure. <b>Germ cell mutagenicity:</b> No effects known. <b>Carcinogenicity:</b> May cause cancer. EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies. NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals. ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure. IARC-2A: Probably carcinogenic to humans: limited human evidence; sufficient evidence in experimental animals The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance. <b>Reproductive toxicity:</b> No effects known. <b>Specific target organ system toxicity - repeated exposure:</b> No effects known. <b>Specific target organ system toxicity - single exposure:</b> May cause respiratory irritation. <b>Aspiration hazard:</b> No effects known. <b>Subacute to chronic toxicity:</b> Dibromoethane is an experimental teratogen and carcinogen. Mutagenic data has also been reported. It has been implicated in worker sterility through sperm damage. Causes severe irritation. May damage the liver and kidneys. <b>Subacute to chronic toxicity:</b> No effects known. <b>Additional toxicological information:</b> To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	


<b>12 Ecological information</b>	
<b>Toxicity</b> <b>Aquatic toxicity:</b> No further relevant information available. <b>Persistence and degradability</b> No further relevant information available. <b>Bioaccumulative potential</b> No further relevant information available. <b>Mobility in soil</b> No further relevant information available. <b>Ecotoxical effects:</b> <b>Remark:</b> Toxic for aquatic organisms <b>Additional ecological information:</b> <b>General notes:</b> Do not allow material to be released to the environment without proper governmental permits. Toxic for aquatic organisms Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Toxic to aquatic life. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. <b>Results of PBT and vPvB assessment</b> <b>PBT:</b> Not applicable. <b>vPvB:</b> Not applicable. <b>Other adverse effects</b> No further relevant information available.	

<b>13 Disposal considerations</b>	
<b>Waste treatment methods</b> <b>Recommendation</b> Consult state, local or national regulations to ensure proper disposal. <b>Uncleaned packagings:</b> <b>Recommendation:</b> Disposal must be made according to official regulations.	

<b>14 Transport information</b>	
UN-Number DOT, IMDG, IATA	UN1605
UN proper shipping name DOT IMDG, IATA	Ethylene dibromide ETHYLENE DIBROMIDE
Transport hazard class(es) DOT 	
Class Label Class	6.1 Toxic substances. 6.1 6.1 (T1) Toxic substances

**Product name: 1,2-Dibromoethane**

(Contd. of page 4)

<b>Label</b> <b>IMDG, IATA</b> 	6.1
<b>Class</b> <b>Label</b>	6.1 Toxic substances. 6.1
<b>Packing group</b> <b>DOT, IMDG, IATA</b>	I
<b>Environmental hazards:</b>	Environmentally hazardous substance, liquid
<b>Special precautions for user</b> <b>Segregation groups</b>	Warning: Toxic substances Liquid halogenated hydrocarbons
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT</b> <b>Marine Pollutant (DOT):</b>	No
<b>UN "Model Regulation":</b>	UN1605, Ethylene dibromide, 6.1, I

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)  
**Hazard pictograms**



GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H301+H311 Toxic if swallowed or in contact with skin.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H350 May cause cancer.

H335 May cause respiratory irritation.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P320 Specific treatment is urgent (see on this label).

P361 Take off immediately all contaminated clothing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

**SARA Section 313 (specific toxic chemical listings)**

106-93-4 1,2-Dibromoethane

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**

106-93-4 1,2-Dibromoethane

**Prop 65 - Developmental toxicity**

106-93-4 1,2-Dibromoethane

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male**

106-93-4 1,2-Dibromoethane

**Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Date of preparation / last revision** 11/23/2015 / -

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

(Contd. on page 6)

USA

Product name: <b>1,2-Dibromoethane</b>	
IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)	(Contd. of page 5) USA