



SIGMA-ALDRICH

## Material Safety Data Sheet

Date Printed: 12/07/2004  
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Version 1.60

### Section 1 - Product and Company Information

**Product Name** Bromoethane, 98%  
**Product Number** 124052  
**Brand** Aldrich Chemical

**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 314 771 5765  
**Fax:** 800 325 5052  
**Emergency Phone:** 414 273 3850 Ext. 5996

### Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
BROMOETHANE	74-96-4	No	200-825-8	602-055-00-1

**Formula** C2H5Br  
**Synonyms** Bromic ether, Bromoethane, Bromure d'ethyle, Ethyl bromide (ACGIH:OSHA), Etylu bromek (Polish), Halon 2001, Hydrobromic ether, Monobromoethane, NCI-C55481

### Section 3 - Hazards Identification

#### Emergency Overview

Flammable (USA) Highly Flammable (EU). Harmful. Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. Possible Carcinogen (US). Target organ(s): Nerves, Liver, Kidneys, Heart. May develop pressure.

**HMS Rating**  
Health: 2\* Flammability: 3 Reactivity: 1

**NFPA Rating**  
Health: 2 Flammability: 3 Reactivity: 1

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

### Section 5 - Fire Fighting Measures

**Flammable Hazards:** Yes

#### Explosion Hazards

Vapor may travel considerable distance to source of ignition and flash back. Container explosion can occur under fire conditions. In advanced or massive fires the area should be evacuated and the fire should be fought from a remote explosion-resistant location.

**Flash Point:** -10 °F -23 °C

**Explosion Limits:** Lower: 6.75 % Upper: 11.25 %

**Autoignition Temp:** 511 °C **Flammability:** Yes

#### Extinguishing Media

##### Suitable

Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

#### Firefighting

##### Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

##### Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

#### Procedure to be Followed in Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

#### Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### Methods for Cleaning Up

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

### Section 7 - Handling and Storage

#### Handling

##### User Exposure

Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

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**Storage****Suitable**

Keep container closed. Keep away from heat, sparks, and open flame.

**Special Requirements**

Refrigerate before opening. May develop pressure. Open carefully.

**Section 8 - Exposure Controls / PPE****Engineering Controls**

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

**Personal Protective Equipment****Respiratory**

Government approved respirator.

**Hand**

Compatible chemical-resistant gloves.

**Eye**

Chemical safety goggles.

**General Hygiene Measures**

Wash thoroughly after handling. Wash contaminated clothing before reuse.

**Exposure Limits**

Country	Type	Value
Poland	NDS	50 MG/M3
Poland	NDSch	100
Poland	NDSP	

**Exposure Limits, RTECS**

Country	Source	Type	Value
USA	ACGIH	TWA	5 PPM
USA	MSHA Standard-air	TWA	200 PPM (890 MG/M3)
USA	OSHA	PEL	8H TWA 200 PPM (890 MG/M3)
New Zealand	OEL		200 PPM (890 MG/M3)

Remarks: check ACGIH TLV

**Section 9 - Physical/Chemical Properties****Appearance**

Color: Almost colorless  
Form: Clear liquid

Molecular Weight: 108.97 AMU

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	37 - 40 °C	760 mmHg
MP/MP Range	-119 °C	
Freezing Point	N/A	
Vapor Pressure	389.818 mmHg	20 °C
Vapor Density	3.75 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.46 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	

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VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	-10 °F
Flash Point °C	-23 °C
Explosion Limits	Lower: 6.75 % Upper: 11.25 %
Flammability	N/A
Autoignition Temp	511 °C
Refractive Index	1.425
Solubility	N/A

Method: closed cup  
Method: closed cup

N/A = not available

**Section 10 - Stability and Reactivity****Stability****Stable**

Stable.

**Materials to Avoid**

Strong bases, Strong oxidizing agents, Magnesium, Potassium, Calcium, Sodium, Aluminum, Zinc, Alkali metals.

**Hazardous Decomposition Products****Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide, Hydrogen bromide gas.

**Hazardous Polymerization****Hazardous Polymerization**

Will not occur.

**Section 11 - Toxicological Information****Route of Exposure****Skin Contact**

Causes skin irritation.

**Skin Absorption**

May be harmful if absorbed through the skin.

**Eye Contact**

Causes eye irritation.

**Inhalation**

Material is irritating to mucous membranes and upper respiratory tract. Harmful if inhaled.

**Ingestion**

Harmful if swallowed.

**Target Organ(s) or System(s)**

Nerves. Liver. Kidneys. Heart.

**Signs and Symptoms of Exposure**

Exposure can cause: Narcotic effect. Dizziness. Weakness. Ataxia. Tremors. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: KH6475000

**Toxicity Data**

Oral - Rat: 1350 mg/kg (LD50)

Inhalation - Rat: 26,980 ppm (LC50)

Intraperitoneal - Rat: 1750 MG/KG (LD50)

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Inhalation - Mouse: 16,230 ppm (LC50)  
Remarks: Behavioral:Somnolence (general depressed activity).  
Gastrointestinal:Hypermotility, diarrhea.

Intraperitoneal - Mouse: 2850 MG/KG (LD50)

#### Chronic Exposure - Carcinogen

Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Rat - Inhalation: 100 PPM 6H/2Y I

Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Brain and Coverings:Tumors.

Mouse - Inhalation: 200 PPM 6H/2Y I

Result: Tumorigenic:Carcinogenic by RTECS criteria. Tumorigenic Effects: Uterine tumors

#### IARC Carcinogen List

Rating  
Group 3

#### NTP Carcinogen List

<u>Rating</u>	<u>Species</u>	<u>Route</u>
Clear evidence.	Mouse	Inhalation
Some evidence.	Rat	Inhalation

#### Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Hamster	100 MG/L	ovary	Sister chromatid exchange

### Section 12 - Ecological Information

No data available.

### Section 13 - Disposal Considerations

#### Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.  
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.  
Observe all federal, state, and local environmental regulations.

### Section 14 - Transport Information

#### DOT

**Proper Shipping Name:** Ethyl bromide  
**UN#:** 1891  
**Class:** 6.1  
**Packing Group:** Packing Group II  
**Hazard Label:** Toxic substances.  
**PIH:** Not PIH

#### IATA

**Proper Shipping Name:** Ethyl bromide  
**IATA UN Number:** 1891  
**Hazard Class:** 6.1  
**Packing Group:** II

### Section 15 - Regulatory Information

#### EU Directives Classification

**Symbol of Danger:** F Xn

#### Indication of Danger

Highly Flammable. Harmful.

**Risk Statements** R: 11 20/22 40

Highly flammable. Harmful by inhalation and if swallowed. Limited evidence of a carcinogenic effect.

**Safety Statements** S: 36/37

Wear suitable protective clothing and gloves.

#### US Classification and Label Text

#### Indication of Danger

Flammable (USA) Highly Flammable (EU), Harmful.

#### Risk Statements

Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect.

#### Safety Statements

Wear suitable protective clothing and gloves.

#### US Statements

Possible Carcinogen (US). Target organ(s): Nerves. Liver. Kidneys. Heart. May develop pressure.

#### United States Regulatory Information

**SARA Listed:** No

**TSCA Inventory Item:** Yes

#### Canada Regulatory Information

#### WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

**DSL:** Yes

**NDSL:** No

### Section 16 - Other Information

#### Disclaimer

For R&D use only. Not for drug, household or other uses.

#### Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

