

## SAFETY DATA SHEET

Version 6.0  
Revision Date 05/28/2017  
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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : 1,2-Dibromoethane

Product Number : D40752  
Brand : Aldrich  
Index-No. : 602-010-00-6

CAS-No. : 106-93-4

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 Spruce Street  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 3), H331  
Acute toxicity, Dermal (Category 3), H311  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Carcinogenicity (Category 1B), H350  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335  
Acute aquatic toxicity (Category 2), H401  
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word : Danger

Hazard statement(s)  
H301 + H311 + H331 : Toxic if swallowed, in contact with skin or if inhaled.

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/doctor if you feel unwell.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none**

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Synonyms	:	EDB Ethylene dibromide
Formula	:	C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub>
Molecular weight	:	187.86 g/mol
CAS-No.	:	106-93-4
EC-No.	:	203-444-5
Index-No.	:	602-010-00-6

**Hazardous components**

Component	Classification	Concentration
<b>1,2-Dibromoethane</b>	Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 1B; STOT SE 3; Aquatic Acute 2; Aquatic Chronic 2; H301 + H311 + H331, H315, H319, H335, H350, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen bromide gas

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

## 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. May darken on storage

## 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 Control parameters

### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
1,2-Dibromoethane	106-93-4	TWA	20 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.31-1970		
		CEIL	30 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.31-1970		
		Peak	50 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.31-1970		
		See Table Z-2		
		TWA	0.045 ppm	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A 15 minute ceiling value		
		C	0.13 ppm	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A 15 minute ceiling value		

## 8.2 Exposure controls

### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

#### Splash contact

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

- |   |  |
|---|--|
| a) Appearance                                   | Form: liquid                                       |
| b) Odour  | No data available                                  |
| c) Odour Threshold                              | No data available                                  |
| d) pH   | No data available                                  |
| e) Melting point/freezing point                 | Melting point/range: 8 - 11 °C (46 - 52 °F) - lit. |
| f) Initial boiling point and boiling range      | 131 - 132 °C (268 - 270 °F) - lit.                 |
| g) Flash point                                  | No data available                                  |
| h) Evaporation rate                             | No data available                                  |
| i) Flammability (solid, gas)                    | No data available                                  |
| j) Upper/lower flammability or explosive limits | No data available                                  |
| k) Vapour pressure                              | 72.0 hPa at 55.0 °C (131.0 °F)                     |
| l) Vapour density                               | No data available                                  |
| m) Relative density                             | 2.18 g/mL at 25 °C (77 °F)                         |
| n) Water solubility                             | No data available                                  |
| o) Partition coefficient: n-octanol/water       | No data available                                  |
| p) Auto-ignition temperature                    | No data available                                  |
| q) Decomposition temperature                    | No data available                                  |
| r) Viscosity                                    | No data available                                  |
| s) Explosive properties                         | No data available                                  |
| t) Oxidizing properties                         | No data available                                  |

### **9.2 Other safety information**

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Alkali metals, Oxidizing agents, Magnesium

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen bromide gas

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 140 mg/kg(1,2-Dibromoethane)

(OECD Test Guideline 401)

Inhalation: No data available(1,2-Dibromoethane)

LD50 Dermal - Rabbit - 300.0 mg/kg(1,2-Dibromoethane)

Remarks: Nutritional and Gross Metabolic:Changes in:Body temperature decrease. Extremely corrosive and destructive to tissue.

No data available(1,2-Dibromoethane)

#### Skin corrosion/irritation

No data available(1,2-Dibromoethane)

#### Serious eye damage/eye irritation

No data available(1,2-Dibromoethane)

#### Respiratory or skin sensitisation

No data available(1,2-Dibromoethane)

#### Germ cell mutagenicity

OECD Test Guideline 478(1,2-Dibromoethane)

Mouse - male

Result: negative

#### Carcinogenicity

This product is or contains a component that has been reported to be proba EPA classification.(1,2-Dibromoethane)

Possible human carcinogen(1,2-Dibromoethane)

(1,2-Dibromoethane)

IARC: 2A - Group 2A: Probably carcinogenic to humans (1,2-Dibromoethane)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (1,2-Dibromoethane)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

No data available(1,2-Dibromoethane)

No data available(1,2-Dibromoethane)

#### Specific target organ toxicity - single exposure

No data available(1,2-Dibromoethane)

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available(1,2-Dibromoethane)

**Additional Information**

RTECS: KH9275000

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting., Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(1,2-Dibromoethane)

Eyes - (1,2-Dibromoethane)

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish	static test LC50 - Oncorhynchus mykiss (rainbow trout) - 1.13 mg/l - 96 h(1,2-Dibromoethane) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 11.61 mg/l - 48 h(1,2-Dibromoethane) (OECD Test Guideline 202)
Toxicity to algae	Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - 6.87 mg/l - 72 h(1,2-Dibromoethane) (OECD Test Guideline 201)

**12.2 Persistence and degradability**

Biodegradability aerobic - Exposure time 28 d(1,2-Dibromoethane)  
Result: 4.2 % - Not readily biodegradable.  
(OECD Test Guideline 301D)

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available(1,2-Dibromoethane)

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Toxic to aquatic life with long lasting effects.

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**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 1605

Class: 6.1

Packing group: I

Proper shipping name: Ethylene dibromide

Reportable Quantity (RQ) : 1 lbs

no

Poison Inhalation Hazard: Hazard Zone B

**IMDG**

UN number: 1605      Class: 6.1      Packing group: I      EMS-No: F-A, S-A  
Proper shipping name: ETHYLENE DIBROMIDE  
Marine pollutant : yes

**IATA**

UN number: 1605      Class: 6.1  
Proper shipping name: Ethylene dibromide  
IATA Passenger: Not permitted for transport  
IATA Cargo: Not permitted for transport

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**15. REGULATORY INFORMATION**

**SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
1,2-Dibromoethane	106-93-4	2007-07-01

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
1,2-Dibromoethane	106-93-4	2007-07-01

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
1,2-Dibromoethane	106-93-4	2007-07-01

**California Prop. 65 Components**

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. 1,2-Dibromoethane	106-93-4	2011-09-01

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. 1,2-Dibromoethane	106-93-4	2011-09-01

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**16. OTHER INFORMATION**

**Full text of H-Statements referred to under sections 2 and 3.**

H301                      Toxic if swallowed.  
H301 + H311 +        Toxic if swallowed, in contact with skin or if inhaled.  
H331  
H311                      Toxic in contact with skin.  
H315                      Causes skin irritation.  
H319                      Causes serious eye irritation.



H331 Toxic if inhaled.  
H335 May cause respiratory irritation.  
H350 May cause cancer.  
H401 Toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.

**HMIS Rating**

Health hazard: 3  
Chronic Health Hazard: \*  
Flammability: 0  
Physical Hazard 0

**NFPA Rating**

Health hazard: 3  
Fire Hazard: 0  
Reactivity Hazard: 0

**Further information**

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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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956  
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