

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 05.11.2010

Version 8.7

### 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Catalogue No.	803279
Product name	1,3-Dibromopropane for synthesis
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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#### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a>

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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### 2. Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 3, H226  
Acute toxicity, Category 4, Oral, H302  
Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Chronic aquatic toxicity, Category 2, H411

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

##### Classification (67/548/EEC or 1999/45/EC)

R10  
Xn; R22  
Xi; R36/38  
N; R51/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

##### Hazard pictograms



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*Signal word*

Warning

*Hazard statements*

H226 Flammable liquid and vapour.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H411 Toxic to aquatic life with long lasting effects.

*Precautionary statements*

P210 Keep away from heat.  
P273 Avoid release to the environment.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Reduced labelling (≤125 ml)**

*Hazard pictograms*



*Signal word*

Warning

CAS-No. 109-64-8

**Labelling (67/548/EEC or 1999/45/EC)**

Symbol(s)	Xn	Harmful
	N	Dangerous for the environment
R-phrases(s)	10-22-36/38-51/53	Flammable. Harmful if swallowed. Irritating to eyes and skin. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases(s)	61	Avoid release to the environment. Refer to special instructions/ Safety data sheets.
EC-No.	203-690-3	

**Reduced labelling (≤125 ml)**

Symbol(s)	Xn	Harmful
	N	Dangerous for the environment
R-phrases(s)	10-22	Flammable. Harmful if swallowed.

**2.3 Other hazards**

None known.

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**3. Composition/information on ingredients**

Formula	Br(CH <sub>2</sub> ) <sub>3</sub> Br	C <sub>3</sub> H <sub>6</sub> Br <sub>2</sub> (Hill)
CAS-No.	109-64-8	
EC-No.	203-690-3	
Molar mass	201,88 g/mol	

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#### 4. First aid measures

##### 4.1 Description of first aid measures

After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

irritant effects, Dizziness, Unconsciousness, Nausea, Vomiting, Headache, CNS disorders

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

No information available.

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#### 5. Fire-fighting measures

##### 5.1 Extinguishing media

*Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder, Water

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible material, Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of:

hydrogen bromide

##### 5.3 Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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#### 6. Accidental release measures

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

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapours, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

##### 6.2 Environmental precautions

Do not empty into drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills.

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Observe possible material restrictions (see sections 7.2 and 10.5).  
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

#### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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### 7. Handling and storage

#### 7.1 Precautions for safe handling

Observe label precautions.

*Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C.

#### 7.3 Specific end uses

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

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### 8. Exposure controls/personal protection

#### 8.1 Control parameters

#### 8.2 Exposure controls

##### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

##### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

*Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

full contact:

Glove material:	Viton (R)
Glove thickness:	0,70 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 10 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (full contact), KCL 730 Camatril® -Velours (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment:*

Flame retardant antistatic protective clothing

*Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

*Environmental exposure controls*

Do not empty into drains.

Risk of explosion.

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## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	pungent
Odour Threshold	No information available.
pH	No information available.
Melting point	-34 °C
Boiling point/boiling range	166 - 168 °C at 1.013 hPa
Flash point	54 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.

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Vapour pressure	2,6 hPa at 20 °C
Relative vapour density	6,97
Relative density	1,98 g/cm <sup>3</sup> at 20 °C
Water solubility	1,68 g/l at 30 °C
Partition coefficient: n-octanol/water	log Pow: 2,37 Method: (experimental) No remarkable bioaccumulation potential is expected (log Pow 1-3). (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

## 9.2 Other data

none

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## 10. Stability and reactivity

### 10.1 Reactivity

Vapour/air-mixtures are explosive at intense warming.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, strong alkalis, Metals

### 10.4 Conditions to avoid

Heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Exposure to moisture.

### 10.5 Incompatible materials

no information available

### 10.6 Hazardous decomposition products

in the event of fire: See chapter 5.

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## 11. Toxicological information

### 11.1 Information on toxicological effects

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*Acute oral toxicity*

LD50 rat

Dose: 315 mg/kg

(External MSDS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

*Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

*Skin irritation*

Irritations

Causes skin irritation.

*Eye irritation*

Causes serious eye irritation.

*Sensitisation*

Result: negative

(External MSDS)

*Specific target organ toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

No aspiration toxicity classification

## 11.2 Further information

*Further information*

Systemic effects:

After uptake of large quantities:

Headache, Nausea, Vomiting, CNS disorders, Dizziness, Unconsciousness

Absorption may result in damage of the following:

Liver, Kidney

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## 12. Ecological information

### 12.1 Toxicity

*Toxicity to fish*

LC50

Species: Pimephales promelas (fathead minnow)

Dose: 1,79 mg/l

Exposure time: 96 h

(ECOTOX Database)

*Toxicity to algae*

IC50

Species: algae

Dose: 19 mg/l

Exposure time: 72 h

(External MSDS)

### 12.2 Persistence and degradability

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*Biodegradability*

Result: Not readily biodegradable.

10 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

**12.3 Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

log Pow: 2,37

Method: (experimental)

No remarkable bioaccumulation potential is expected (log Pow 1-3). (Lit.)

**12.4 Mobility in soil**

No information available.

**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**

*Additional ecological information*

Do not allow to run into surface waters, wastewater, or soil.

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**13. Disposal considerations**

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**14. Transport information**

**ADR/RID**

UN 1993 FLAMMABLE LIQUID, N.O.S. (1,3-DIBROMOPROPANE), 3, III

**IATA**

UN 1993 FLAMMABLE LIQUID, N.O.S. (1,3-DIBROMOPROPANE), 3, III

**IMDG**

UN 1993 FLAMMABLE LIQUID, N.O.S. (1,3-DIBROMOPROPANE), 3, III

EmS F-E S-E

The transport regulations are cited according to international regulations and in the form applicable in Germany. Possible national deviations in other countries are not considered.

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**15. Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

*EU regulations*

Major Accident Hazard 96/82/EC  
Legislation Flammable.

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Quantity 1: 5.000 t

Quantity 2: 50.000 t

96/82/EC

Dangerous for the environment

9b

Quantity 1: 200 t

Quantity 2: 500 t



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Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.
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*National legislation*

Storage class VCI	3 Flammable Liquids
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## 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

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## 16. Other information

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

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

### Full text of R-phrases referred to under sections 2 and 3

R10	Flammable.
R22	Harmful if swallowed.
R36/38	Irritating to eyes and skin.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Training advice

Provide adequate information, instruction and training for operators.

Regional representation:	This information is given on the authorised Safety Data Sheet for your country.
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### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*