

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 01.07.2013

Revision: 19.04.2013

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

**Bromoform, 97%, stab. with ca 3% ethanol**

Stock number:

A11904, L00505

**1.2 Relevant identified uses of the substance**

or mixture and uses advised against.

No further relevant information available.

Identified use:

SU24 Scientific research and development

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

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
 A Johnson Matthey Company  
 Zeppelinstr. 7b  
 76185 Karlsruhe / Germany  
 Tel: +49 (0) 721 84007 280  
 Fax: +49 (0) 721 84007 300  
 Email: tech@alfa.com  
 www.alfa.com

Informing department:

Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS06 skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

T; Toxic

R23: Toxic by inhalation.



Xn; Harmful

R22-40: Harmful if swallowed. Limited evidence of a carcinogenic effect.



Xi; Irritant

R36/38: Irritating to eyes and skin.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Other hazards that do not result in classification**

No information known.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008**

Hazard pictograms

Signal word

Hazard-determining components of labelling:

Hazard statements

The product is classified and labelled according to the CLP regulation.

GHS06, GHS08, GHS09

Danger

Bromoform

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H411 Toxic to aquatic life with long lasting effects.

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P321

Specific treatment (see on this label).

P405

Store locked up.

P501

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

regulations.

**2.3 Other hazards**

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures**

Dangerous components:

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Trade name **Bromoform, 97%, stab. with ca 3% ethanol**

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CAS: 75-25-2 EINECS: 200-854-6	Bromoform T R23; Xn R22-40; Xi R36/38; N R51/53 Acute Tox. 3, H331; Carc. 2, H351; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	97,0%
CAS: 64-17-5 EINECS: 200-578-6	Ethanol F R11 Flam. Liq. 2, H225	3,0%
Additional information		None known.

**SECTION 4: First aid measures****4.1 Description of first aid measures****General information**

Instantly remove any clothing soiled by the product.  
Remove breathing apparatus only after soiled clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

**After skin contact**

Seek immediate medical advice.  
Instantly wash with water and soap and rinse thoroughly.

**After eye contact**

Seek immediate medical advice.

**After swallowing**

Rinse opened eye for several minutes under running water. Then consult doctor.  
Seek medical treatment.

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents**

CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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

If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Hydrogen bromide (HBr)

**5.3 Advice for firefighters****Protective equipment:**

Wear self-contained breathing apparatus.  
Wear full protective suit.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

**6.2 Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.

**6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste according to item 13.

**Prevention of secondary hazards:**

Ensure adequate ventilation.

**6.4 Reference to other sections**

No special measures required.

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle container with care.

**Information about protection against explosions and fires:**

No information known.

**7.2 Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and containers:**

No special requirements.

**Information about storage in one common storage facility:**

Store away from oxidizing agents.  
Store in the dark.

**Further information about storage conditions:**

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from the effects of light.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.

**7.3 Specific end use(s)**

No further relevant information available.

**SECTION 8: Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**8.1 Control parameters****Components with critical values that require monitoring at the workplace:****75-25-2 Bromoform (97,0%)**

MAK (Germany)	- mg/m <sup>3</sup> , - ppm
PEL (USA)	5 mg/m <sup>3</sup> , 0,5 ppm
	Skin
REL (USA)	5 mg/m <sup>3</sup> , 0,5 ppm
	Skin
TLV (USA)	5,2 mg/m <sup>3</sup> , 0,5 ppm

**64-17-5 Ethanol (3,0%)**

AGW (Germany)	960 mg/m <sup>3</sup> , 500 ppm
	2(II);DFG, Y
PEL (USA)	1900 mg/m <sup>3</sup> , 1000 ppm

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REL (USA)	1900 mg/m <sup>3</sup> , 1000 ppm
TLV (USA)	Short-term value: 1880 mg/m <sup>3</sup> , 1000 ppm

Additional information: No data

**8.2 Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.  
 Keep away from foodstuffs, beverages and food.  
 Instantly remove any soiled and impregnated garments.  
 Wash hands during breaks and at the end of the work.  
 Store protective clothing separately.  
 Do not inhale dust / smoke / mist.  
 Avoid contact with the eyes and skin.  
 Maintain an ergonomically appropriate working environment.  
 Use self-contained respiratory protective device in emergency situations.

**Breathing equipment:****Recommended filter device for short term use:**

Use a respirator with organic vapor/acid gas cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

**Protection of hands:**

Check protective gloves prior to each use for their proper condition.  
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Material of gloves**

Fluorocarbon rubber (Viton)

**Penetration time of glove material**

Not determined

**Eye protection:**

Safety glasses

**Body protection:**Face protection  
Protective work clothing.**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Liquid
Colour:	Colorless to pale yellow
Smell:	Not determined
Odour threshold:	Not determined.

pH-value: Not determined.

**Change in condition**

Melting point/Melting range:	8-9 °C
Boiling point/Boiling range:	150 °C
Sublimation temperature / start:	Not determined
Inflammability (solid, gaseous)	Not applicable.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Self-inflammability:	Product is not selfigniting.
Critical values for explosion:	
Lower:	Not determined
Upper:	Not determined
Steam pressure at 20 °C:	6,4 hPa
Density at 20 °C	2,81 g/cm <sup>3</sup>
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water at 20 °C:	3,2 g/l
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.

**Solvent content:**

Organic solvents: 100,0 %

9.2 Other information No further relevant information available.

**SECTION 10: Stability and reactivity****10.1 Reactivity**

No information known.

**10.2 Chemical stability**

Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**10.3 Possibility of hazardous reactions**

No dangerous reactions known

**10.5 Incompatible materials:**

Oxidizing agents

10.6 Hazardous decomposition products:	Light
	Carbon monoxide and carbon dioxide
	Hydrogen bromide

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity:**

Harmful if swallowed.

Fatal if inhaled.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

**LD/LC50 values that are relevant for classification:****75-25-2 Bromoform**

Oral	LD50	933 mg/kg (rat)
Inhalative	LC50/2H	12100 mg/m <sup>3</sup> /2H (mouse)

**Skin irritation or corrosion:**

Causes skin irritation.

**Eye irritation or corrosion:**

Causes serious eye irritation.

**Sensitization:**

No sensitizing effect known.

**Germ cell mutagenicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.

**Carcinogenicity:**

EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.

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

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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-3: Not classifiable as to carcinogenicity to humans.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.  
The following classification is based on the German TRGS 905 (Technical Rules for Dangerous Substances): Suspected of causing cancer.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.

**Reproductive toxicity:****Specific target organ system toxicity - repeated exposure:****Specific target organ system toxicity - single exposure:****Aspiration hazard:****Experience with humans:****Additional toxicological information:**

No effects known.

No effects known.

No effects known.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Toxic  
Harmful  
Irritant

**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****Ecotoxicological effects:****Remark:****Additional ecological information:****General notes:**

No further relevant information available.

No further relevant information available.

No further relevant information available.

No further relevant information available.

Toxic for fish

Do not allow product to reach ground water, water bodies or sewage system.

Toxic for aquatic organisms

Do not allow material to be released to the environment without proper governmental permits.

Water hazard class 2 (Self-assessment): hazardous for water.

Danger to drinking water if even small quantities leak into soil.

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.

**12.5 Results of PBT and vPvB assessment****PBT:****vPvB:****12.6 Other adverse effects**

Not applicable.

Not applicable.

No further relevant information available.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:****Recommendation:**

Disposal must be made according to official regulations.

**SECTION 14: Transport information****UN-Number****ADR, IMDG, IATA**

UN2515

**14.2 UN proper shipping name****ADR****IMDG****IATA**

2515 BROMOFORM  
BROMOFORM, MARINE POLLUTANT  
BROMOFORM

**14.3 Transport hazard class(es)****ADR****Class****Label****IMDG**

6.1 (T1) Toxic substances.

6.1

**Class****Label****IATA**

6.1 Toxic substances.

6.1

**Class****Label**

6.1 Toxic substances.

6.1

**Packing group****ADR, IMDG, IATA**

III

**14.5 Environmental hazards:****Marine pollutant:**

Product contains environmentally hazardous substances: Bromoform  
Symbol (fish and tree)

**14.6 Special precautions for user****Kemler Number:**

Warning: Toxic substances.  
60

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**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**Transport/Additional information:****ADR****Excepted quantities (EQ):**

E1

**Limited quantities (LQ)**

5L

**Transport category**

2

**Tunnel restriction code**

E

**UN "Model Regulation":**

UN2515, BROMOFORM, 6.1, III

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical Substances**

All ingredients are listed.

**Standard for the Uniform Scheduling of Drugs and Poisons**

75-25-2 Bromoform

S4, S6

**National regulations****Information about limitation of use:**

Employment restrictions concerning young persons must be observed.

For use only by technically qualified individuals.

Not applicable

**Classification according to VbF:****Technical instructions (air):**

Class	Share in %
I	97,0
NK	3,0

**Water hazard class:**

Water hazard class 2 (Self-assessment): hazardous for water.

**Other regulations, limitations and prohibitive regulations****ELINCS (European List of Notified Chemical Substances)**

None of the ingredients is listed.

**Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

**REACH - Pre-registered substances**

All ingredients are listed.

**15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 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.

**Relevant phrases**

H225 Highly flammable liquid and vapour.  
H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H331 Toxic if inhaled.  
H351 Suspected of causing cancer.  
H411 Toxic to aquatic life with long lasting effects.  
R11 Highly flammable.  
R22 Harmful if swallowed.  
R23 Toxic by inhalation.  
R36/38 Irritating to eyes and skin.  
R40 Limited evidence of a carcinogenic effect.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Department issuing data specification sheet:****Abbreviations and acronyms:**

Health, Safety and Environmental Department.  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organization  
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  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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