## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**1.1 Product identifiers**

Product name : 2-Bromo-1,1,1-trifluoroethane

CAS-No. : 421-06-7

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

Identified uses : Laboratory chemicals, Manufacture of substances

## 2. HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**
Skin irritation (Category 2)
Eye irritation (Category 2)
Specific target organ toxicity - single exposure (Category 3)
Hazardous to the ozone layer

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**
Irritating to eyes, respiratory system and skin. Dangerous for the ozone layer.

**2.2 Label elements**

**Labelling according Regulation (EC) No 1272/2008 [CLP]**

Pictogram



Signal word Danger

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Avoid release to the environment.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard information (EU)
EUH059 Hazardous to the ozone layer.

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s)



R-phrase(s)
R36/37/38 Irritating to eyes, respiratory system and skin.
R59 Dangerous for the ozone layer.

S-phrase(s)
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S59 Refer to manufacturer/supplier for information on recovery/recycling.

**2.3 Other hazards** - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances**

Formula : C2H2BrF3

Molecular Weight : 162,94 g/mol

| Component | | Concentration |
|---|---|---|
| **2-Bromo-1,1,1-trifluoroethane** | | |
| CAS-No. | 421-06-7 | - |
| EC-No. | 207-001-7 | |

## 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.

**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. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**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**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**4.3 Indication of immediate medical attention and special treatment needed**
no data available

## 5. FIRE-FIGHTING 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, Hydrogen fluoride

**5.3 Precautions for fire-fighters**
Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**
no data available

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

**6.2 Environmental precautions**
Do not let product enter drains.

**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.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

**7.2 Conditions for safe storage, including any incompatibilities**
Store in cool place. 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.

**7.3 Specific end uses**
no data available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**

**Components with workplace control parameters**

**8.2 Exposure controls**

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**
Safety glasses with side-shields conforming to EN166 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**
impervious clothing, 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 a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of 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).

## 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/freezing point | Melting point/range: -94 °C - lit. |
| f) | Initial boiling point and boiling range | 26 - 27 °C - 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 | 774.747 hPa at 20 °C<br>2.604,088 hPa at 55 °C |
| l) | Vapour density | 5.62 - (Air = 1.0) |
| m) | Relative density | 1,788 g/cm3 at 25 °C |
| n) | Water solubility | no data available |
| o) | Partition coefficient: n-octanol/water | no data available |
| p) | Autoignition 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

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity**
no data available

**10.2 Chemical stability**
no data available

**10.3 Possibility of hazardous reactions**
no data available

**10.4 Conditions to avoid**
no data available

**10.5 Incompatible materials**
Strong oxidizing agents

**10.6 Hazardous decomposition products**
Other decomposition products - no data available

## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

**Acute toxicity**
LC50 Inhalation - mouse - 2 h - 240.000 mg/m3
Remarks: Behavioral:Rigidity (includes catalepsy). Liver:Other changes. Kidney, Ureter, Bladder:Other changes.

**Skin corrosion/irritation**
no data available

**Serious eye damage/eye irritation**
no data available

**Respiratory or skin sensitization**
no data available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**
no data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**
no data available

**Aspiration hazard**
no data available

**Potential health effects**

| | |
|---|---|
| **Inhalation** | May be harmful if inhaled. Causes respiratory tract irritation. |
| **Ingestion** | May be harmful if swallowed. |
| **Skin** | May be harmful if absorbed through skin. Causes skin irritation. |
| **Eyes** | Causes serious eye irritation. |

**Signs and Symptoms of Exposure**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**
RTECS: KH6720000

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity**
no data available

**12.2 Persistence and degradability**
no data available

**12.3 Bioaccumulative potential**
no data available

**12.4 Mobility in soil**
no data available

**12.5 Results of PBT and vPvB assessment**
no data available

**12.6 Other adverse effects**
Dangerous for the ozone layer.

## 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.

**Contaminated packaging**
Dispose of as unused product.

## 14. TRANSPORT INFORMATION

**14.1 UN-Number**

| | | |
|---|---|---|
| ADR/RID: - | IMDG: - | IATA: - |

**14.2 UN proper shipping name**

| | | |
|---|---|---|
| ADR/RID: | Not dangerous goods | |
| IMDG: | Not dangerous goods | |
| IATA: | Not dangerous goods | |

**14.3 Transport hazard class(es)**

| | | |
|---|---|---|
| ADR/RID: - | IMDG: - | IATA: - |

**14.4 Packaging group**

| | | |
|---|---|---|
| ADR/RID: - | IMDG: - | IATA: - |

**14.5 Environmental hazards**

| | | |
|---|---|---|
| ADR/RID: no | IMDG Marine pollutant: no | IATA: no |

**14.6 Special precautions for users**
no data available

## 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
no data available

**15.2 Chemical Safety Assessment**
no data available

## 16. OTHER INFORMATION

**Further information**

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. Lookchem 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.

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