

## 1: Identification of substance / mixture

### 1. Product Identifier

Substance

Product Name **1-Bromo-4-fluorobenzene**  
Product Code 001225  
CAS Number 460-00-4  
Other Names 4-Bromofluorobenzene  
IUPAC  
MFCD Number MFCD00000342  
EC/EINECS 207-300-2  
REACH Number Index-No

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

Research and Development

### 3. Details of the supplier of the safety data sheet

Fluorochem Ltd  
Unit 14, Graphite Way  
Hadfield  
Derbyshire  
SK13 1QH  
UK

Telephone: +44(0)1457 860111  
Fax: +44(0)1457 892799  
Email: sds@fluorochem.co.uk



### 4. Emergency telephone number

+44(0)7855 268577 -

## 2. Hazards Identification

### 1. Classification of the substance or mixture

H226	Flam Liq. 3	
H315	Skin Irrit. 2	
H319	Eye Irrit. 2	
H335	STOT SE 3a	

### 2. Label elements

Signal Word **Warning**



### Hazard Statements

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

### Precautionary Phrases

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303 + P361 + P533	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378	In case of fire: Use sand, CO2 or extinguishing powder for extinction.

### 3. Other Hazards

Additional precautionary phrases are located throughout the safety data sheet

## 3. Composition / Information on Ingredients

### 1. Substances

Product Name	Hazards	Concentration
1-Bromo-4-fluorobenzene		
CAS Number: 460-00-4 EC/EINECS: 207-300-2	H226, H315, H319, H335 Eye Irrit. 2, Flam Liq. 3, Skin Irrit. 2, STOT SE 3a	<=100%

## 4. First Aid Measures

### 1. Description of first aid measures

<i>Skin Contact</i>	P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P332 + P313: If skin irritation occurs: Get medical advice/attention.
<i>Eye Contact</i>	P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313: If eye irritation persists: Get medical advice/attention.
<i>Ingestion</i>	Wash out mouth with water.
<i>Inhalation</i>	P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

### 2. Most important symptoms and effects

There may be irritation and redness.

### 3. Indication of any immediate medical attention

No additional measures required

## 5. Firefighting measures

### 1. Extinguishing Media

<i>Suitable</i>	P370 + P378: In case of fire: Use sand, CO2 or extinguishing powder for extinction.
<i>Unsuitable</i>	no data

### 2. Special Hazards arising from the substance or mixture

In combustion toxic fumes may form.

### 3. Advice for Fire Fighters

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

## 6. Accidental Release Measures

### 1. Personal Precautions

Eliminate all sources of ignition.  
Do not attempt to take action without suitable protective clothing – see section 8 of SDS.

### 2. Environmental Precautions

Do not discharge into drains or rivers.  
Contain the spillage using bunding.

### 3. Methods & Materials

Mix with sand or vermiculite.  
Transfer to a closable, labelled salvage container for disposal by an appropriate method.

### 4. Preventing the occurrence of secondary hazards.

No Special Measures Required

## 7. Handling and Storage

### 1. Personal Precautions

- Safe Handling* Ensure there is sufficient ventilation of the area.  
P240: Ground/bond container and receiving equipment.  
P264: Wash hands thoroughly after handling.
- Protection against explosions and fires* P241: Use explosion-proof electrical/ventilating/lighting/. equipment.  
P242: Use only non-sparking tools.  
P243: Take precautionary measures against static discharge.  
P362: Take off contaminated clothing and wash before reuse.

### 2. Conditions for safe storage, including any incompatibilities

- Managing Storage Risks* Store in cool, well ventilated area.  
Keep away from sources of ignition.  
Keep container tightly closed.  
Keep away from direct sunlight.
- Storage Controls* No special requirements
- Maintaining Integrity* P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
P233: Keep container tightly closed.
- Other advice* P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

### 3. Specific End Uses

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

## 8. Exposure Controls/Personal Protection

### 1. Control Parameters

No Data Available

### 2. Exposure Controls

- General protective and hygiene measures* P280: Wear protective gloves/protective clothing/eye protection/face protection.  
Wash hands during breaks and at the end of handling the material  
Immediately remove any contaminated clothing
- Engineering measures* P271: Use only outdoors or in a well-ventilated area.
- Eye / Face Protection* Safety Glasses with side-shields.
- Hand protection* Protective gloves.
- Respiratory protection* P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
Use breathing protection with high concentrations
- Skin protection* Handle with gloves.  
Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practice.  
Wash and dry hands.  
Protective clothing.
- Other personal protection advice* no data

## 9. Physical and Chemical Properties

### 1. Physical and Chemical Properties

Appearance	Liquid
Odour	Aromatic
Odour threshold	No Data Available
PH	No Data Available
Melting point / Freezing point	-18 to -16°C
Initial boiling point and boiling range	152-155°C

Flash point	60°C
Evaporation rate	No Data Available
Flammability(solid,gas)	No Data Available
Upper/lower flammability or explosive limits	No Data Available
Vapour pressure	No Data Available
Vapour density	No Data Available
Relative density	1.604
Solubility(ies):	No Data Available
Partition coefficient: n-octanol/water	No Data Available
Auto-ignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive properties	No Data Available
Oxidising properties	No Data Available

## 2. Other Information

No additional information available

## 10. Stability and Reactivity

### 1. Reactivity

no unusual reactivity

### 2. Stability

Stable under normal conditions.

### 3. Possibility of Hazardous Reactions

no hazardous reactions known

### 4. Conditions to Avoid

Extremes of temperature and direct sunlight  
Heat, flames and sparks.

### 5. Incompatible Materials

Oxidising agents.  
Strong acids.  
Strong bases.  
Strong reducing agents.

### 6. Hazardous Decomposition Products

In combustion emits toxic fumes.  
In combustion emits toxic fumes of carbon dioxide / carbon monoxide.  
In combustion emits toxic fumes of hydrogen fluoride.  
In combustion emits toxic fumes of hydrogen bromide.

## 11. Toxicology information

### 1. Information

<i>Acute Toxicity</i>	no data
<i>Skin corrosion/irritation</i>	irritant for skin and mucous membranes
<i>Serious eye Damage/irritation</i>	irritant effect
<i>Respiratory or skin sensitisation</i>	No sensitizing effect known
<i>Germ Cell mutagenicity</i>	not known
<i>Carcinogenicity</i>	not known
<i>Reproductive toxicity</i>	not known

*STOT-single exposure* not known

*STOT-repeated exposure* not known

*Aspiration hazard* not known

## 2. Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
No classification data on carcinogenic properties of this material is available from the EPA, IARC,NTP,OSHA or ACGIH

## 12. Ecological Information

### 1. Toxicity

not known

### 2. Persistence and degradability

not known

### 3. Bio-Accumulative Potential

not known

### 4. Mobility and Soil

not known

### 5. Results of PBT & vPvB assessment

not known

### 6. Other adverse effects

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

## 13. Disposal Considerations

### 1. Waste Treatment Methods

*Disposal Operations*

*Disposal of Packaging* Disposal must be made according to official regulations.

## 14. Transport Information

### Air (ICAO)

1. **UN Number:** 1993
2. **Shipping Name:** Flammable liquid, n.o.s.
3. **Transport hazard class(es):** : 3 Sub Class :



4. **Packing group:** III
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:**

### Road (ADR)

1. **UN Number:** 1993
2. **Shipping Name:** FLAMMABLE LIQUID, N.O.S (1-Bromo-4-fluorobenzene).
3. **Transport hazard class(es):** : 3 Sub Class :



4. **Packing group:** III  
5. **Environmental hazards:**  
6. **Special Precautions for user:**  
7. **Transport in bulk:**

## Sea (IMDG)

1. **UN Number:** 1993  
2. **Shipping Name:** Flammable liquid, n.o.s.  
3. **Transport hazard class(es):** : 3      Sub Class :



4. **Packing group:** III  
5. **Environmental hazards:**  
6. **Special Precautions for user:**  
7. **Transport in bulk:** IBCINS: IBC03  
IBCPCOV: -  
UNTANKINS: -  
TANKPCOV: TP1, TP29

## 15. Safety, health, environmental and national regulations

### 1. Safety, health, environmental and national regulations:

product is not subject to any additional regulations or provisions

### 2. Safety Assessment

No Chemical Safety Assessment

## 16. Other Information

### 1. Other Information:

ADR: Accord European sur le transport des marchandises Dangereuses par Route(European Agreement concerning the International Carriage of Dangerous Goods by road)  
RID:Reglement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association  
ICAO:International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the ICAO  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
CAS:Chemical Abstracts Service

### 2. Associated risk phrases according to European directive 67/548/EEC

### 3. Disclaimer

The product listed is for research and development purposes only and not for human or animal use. As such, in most cases, the toxicological, ecological and physicochemical properties have not been fully determined and the product should be treated with respect and always handled under suitable conditions by appropriately qualified personnel. The responsible party shall use this datasheet only in conjunction with other sources of information gathered by them, and should make an independent judgement of suitability, 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.