

## MATERIAL SAFETY DATA SHEET (MSDS)

### SECTION 1: Identification

**1.1 Product identifiers**

**Product Name :** 1-Bromo-3,5-difluorobenzene

**Cat No.:** A14053

**CAS No. :** 461-96-1

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

**Recommended uses :** Laboratory chemicals

**Uses advised against:** Food, drug, pesticide or biocidal product use.

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

**Company :** Krishna Solvechem Limited.  
B/503, Sahayog, S. V. Road,  
Kandivali (West), Mumbai – 400067. India.

**Telephone :** +91-22-6123 0222

**Email :** exports@kscl.co.in

**1.4 Emergency telephone number**

**Emergency Phone :** +91-8657457330

### SECTION 2: Hazards identification

**2.1 Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	(Category 3)
Acute oral toxicity	(Category 4)
Skin Corrosion/Irritation	(Category 2)
Serious Eye Damage/Eye Irritation	(Category 2)
Specific target organ toxicity (repeated exposure)	(Category 2)
Target Organs - Blood, Hematopoietic system.	

**2.2 Label elements**

**Pictogram :**



**Signal word**

Warning

**Hazard statement (s)**

Flammable liquid and vapor  
May cause damage to organs through prolonged or repeated exposure



**Precautionary statement (s)**

**Prevention**

Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection

Do not eat, drink or smoke when using this product

Contaminated work clothing should not be allowed out of the workplace

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting/equipment

Use only non-sparking tools

Take precautionary measures against static discharge

**IF ON SKIN (or hair):**

If skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

**Eyes:**

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

**Ingestion:**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage:**

Store in a well-ventilated place. Keep cool



<b>Hazards not otherwise classified (HNOC)</b>	<b>Disposal:</b> Dispose of contents/container to an approved waste disposal plant
	Very toxic to aquatic life with long lasting effects

### SECTION 3: Composition / information on ingredients

<b>3.1</b>		
Component	CAS-No	Weight %
1-Bromo-3,5-difluorobenzene	461-96-1	99

### SECTION 4: First aid measures

<b>4.1 Description of first aid measures</b>	
<b>If inhalation :</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>In case of skin contact :</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>In case of eye contact :</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Ingestion :</b>	Clean mouth with water. Get medical attention
<b>4.2 Most important symptoms and effects :</b>	Difficulty in breathing. May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
<b>4.3 Notes to Physician :</b>	Treat symptomatically

### SECTION 5: Firefighting effects

<b>5.1 Extinguishing media</b>	
<b>Suitable extinguishing media :</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media: :</b>	No information available
<b>5.2 Flash Point :</b>	45 °C / 113 °F
<b>Method :</b>	No information available



<b>Autoignition Temperature:</b>	No information available
<b>Explosion Limits:</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available
<b>Specific Hazards Arising from the Chemical :</b>	Flammable. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air. Do not allow run-off from fire-fighting to enter drains or water courses.
<b>Hazardous Combustion Products :</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Hydrogen halides. Gaseous hydrogen fluoride (HF). Fluorine. Bromine.

<b>5.4 Protective Equipment and Precautions for Firefighters:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
<b><u>NFPA:</u></b>	<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
	2	2	0	N/A

## SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Remove all sources of ignition. Take precautionary measures against static discharges
- 6.2 Environmental precautions**  
Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.
- 6.3 Methods and materials for containment and cleaning up**  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not let this chemical enter the environment.

## SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**  
Avoid contact with skin and eyes. Do not breathe mist/vapors/spray. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges.



## 7.2 Conditions for safe storage

Keep in a dry, cool and well-ventilated place. Refer product specification and/or product label for specific storage temperature requirement. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area. Keep container tightly closed in a dry and well-ventilated place.

## SECTION 8: Exposure controls/personal protection

### 8.1 Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### 8.2 Exposure controls

#### Personal protective equipment -

##### Eye / Face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

##### Skin protection and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

##### Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice..

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	Light yellow Liquid
b) Odour	No information available
c) Odour Threshold	No information available
d) pH	No information available
e) Melting point / freezing point	-27 °C / -16.6 °F
f) Initial boiling point and	140 °C / 284 °F @ 760 mmHg



<b>boiling range</b>	
<b>g) Flash point</b>	45 °C / 113 °F
<b>h) Evaporation rate</b>	No information available
<b>i) Flammability (solid, gas)</b>	Not applicable
<b>j) Upper/lower flammability or explosive limits</b>	No data available No data available
<b>k) Vapour pressure</b>	10.36 hPa @ 25 °C
<b>l) Vapour density</b>	No data available
<b>m) Specific Gravity</b>	1.676
<b>n) Solubility</b>	No information available
<b>o) Partition coefficient: n octanol/water</b>	No data available
<b>p) Auto-ignition temperature</b>	No information available
<b>q) Decomposition temperature</b>	No information available
<b>r) Viscosity</b>	No information available
<b>s) Molecular formula</b>	C6 H3 Br F2
<b>t) Molecular Weight</b>	192.99

### SECTION 10: Stability and Reactivity

<b>10.1 Reactive Hazard :</b>	None known, based on information available
<b>10.2 Chemical stability :</b>	Stable under normal conditions.
<b>10.3 Possibility of hazardous reactions :</b>	None under normal processing.
<b>10.4 Conditions to avoid :</b>	Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.
<b>10.5 Incompatible materials:</b>	Strong oxidizing agents
<b>10.6 Hazardous decomposition products :</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen halides, Gaseous hydrogen fluoride (HF), Fluorine, Bromine
<b>10.7 Hazardous Polymerization</b>	Hazardous polymerization does not occur



## SECTION 11: Toxicological information

### 11.1

#### Information on toxicological effects

#### Acute toxicity:

#### Product Information:

#### Component Information

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation :** No information available

**Sensitization:** May cause sensitization by skin contact

**Carcinogenicity :** The table below indicates whether each agency has Any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
1-Bromo-3,5-difluoro benzene	461-96-1	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects:** No information available.

**Reproductive Effects:** No information available.

**Developmental Effects :** No information available.

**Teratogenicity:** No information available.

**STOT - single exposure :** None known

**STOT - repeated exposure:** Blood Hematopoietic system

**Aspiration hazard :** No information available.

**Symptoms / effects, both acute and delayed:** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

**Endocrine Disruptor Information :** No information available

**Other Adverse Effects :** The toxicological properties have not been fully investigated.



## SECTION 12: Ecological information

### 12.1

#### Ecotoxicity:

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

**12.2 Persistence and degradability:** Insoluble in water Persistence is unlikely based on information Available.

**Bioaccumulation/ Accumulation** No information available

**12.3 Mobility:** Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility.

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods:** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## SECTION 14: Transport information

### 14.1 UN number :

DOT : UN1993      TDG : UN1993  
IATA : UN1993      IMDG : UN1993

### 14.2 UN proper shipping name

**DOT :** Flammable liquid, n. o. s.      **TDG :** Flammable liquid, n. o. s.

**IMDG :** Flammable liquid, n. o. s.      **IATA :** Flammable liquid, n. o. s.

**14.3 Transport hazard class(es)**      DOT: 3      TDG: 3      IMDG: 3      IATA: 3

**14.4 Packaging group:**      DOT: III      TDG: III      IMDG: III      IATA: III

## SECTION 15: Regulatory information

### 15.1 United states of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification Active/Inactive	TSCA - EPA Regulatory Flags
1-Bromo-3,5-Difluoro benzene	461-96-1	-	-	-

**Legend:**





**TSCA - Toxic Substances Control Act, (40 CFR Part 710)**

X - Listed

'-' - Not Listed

**TSCA 12(b) - Notices of Export** Not applicable

**International Inventories:**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
1-Bromo-3,5-difluoro benzene	461-96-1	-	-	-	-	-	-	-	-

**U.S. Federal Regulations**

**SARA 313** Not applicable

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA** Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**15.2 U.S. State Right-to-Know Regulations:**

Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N



**U.S. Department of Homeland Security** - This product does not contain the any DHS Chemicals.

**Other International Regulations**

**Mexico – Grade**

No information available

**SECTION 16: Other information**

<b>16.1 Prepared By:</b>	Regulatory affairs Krishna Solvechem Limited
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<b>Revision Date:</b>	19-Feb-2023
<b>Print Date:</b>	19-Feb-2023
<b>Revision Summary:</b>	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C F R 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**16.2 Disclaimer:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.