



## 1-Bromo-2-Butyne

### Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of Compilation : May 27, 2013  
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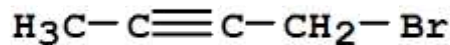
## 1-Bromo-2-Butyne Safety Data Sheet

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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

#### 1.1 Product Identifier

Product name	: 1-Bromo-2-butyne
CAS RN	: 3355-28-0
EC list no.	: 608-891-3
Synonyms	: 1-Bromobut-2-yne;2-Butynyl bromide
Technical name	: 1-Bromo-2-butyne
Molecular formula	: C <sub>4</sub> H <sub>5</sub> Br
Structural formula	:



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

**Relevant identified uses:** Used as an intermediate in the production of pharmaceutical ingredients.

**Uses advised against:** None

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

**FACTORY & REGISTERED OFFICE:**

Jubilant Ingrevia Limited, Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh-244223, India  
T +91-5924-267437& +91-5924-267438

**HEAD OFFICE:**

Jubilant Ingrevia Limited  
Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh, 201301 – India  
T +91-120-4361000 - F +91-120-4234881 / 84 / 85 / 87 / 95 / 96 [support@jubl.com](mailto:support@jubl.com) - [www.jubilantingrevia.com](http://www.jubilantingrevia.com)

#### 1.4. Emergency telephone number

For Chemical Emergency ONLY (in the case of fire, leak, spill, exposure or accident) Call

Chemtrec: 1-800-424-9300 (US), 1-703-527-3887 (Outside U.S.)

Chemtrec (India) : 000-800-100-7141

For ALL other emergencies call Emergency Control Room Gajraula at 99970 22412

### SECTION 2: HAZARD(S) IDENTIFICATION

#### 2.1 Classification of the substance or mixture

**GHS-US classification**

Flammable Liquid: Category 3

Acute Toxicity (oral): Category 3

Skin Corrosion/irritant: Category 2

Serious eye damage/eye irritant: Category 2A

Specific Target Organ Toxicity: Category 3  
(After Single Exposure)

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### 2.2 Label Elements

#### Pictograms:



**Signal word:** *Danger!*

### 2.3 Hazard and Precautionary Statements:

#### HAZARD STATEMENTS

- H226: Flammable liquid and Vapor.
- H301: Toxic if swallowed.
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

#### PRECAUTIONARY STATEMENTS

- P210: Keep away from heat/sparks/open flames/.../hot surfaces. ... No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ventilating/lighting/.../ equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
- P270: Do not eat drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P330: Rinse mouth.
- P370+P378: In case of fire: Use water for extinction.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362: Take off contaminated clothing and wash before reuse.
- 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.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P405: Store locked up.
- P403+233: Store in a well ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container to local/regional/national/international regulations.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.1 Substance

Substance	CAS Number	Assay/Purity
1-Bromo-2-butyne	3355-28-0	Min. 98%

### 3.2 Mixture

Not applicable

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures:

- **Eyes:** If in eyes rinse cautiously with water for at least 15 minutes. Remove contact lenses if easy to do so. Continue rinsing. Seek medical attention.
- **Skin:** Immediately take off all contaminated clothing. Wash thoroughly with water for at least 15 minutes. Wash contaminated clothes before reuse. Seek immediate medical attention.
- **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if you feel unwell. Monitor for respiratory distress. Apply artificial respiration if not breathing. Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- **Ingestion:** If swallowed call a poison center if you feel unwell. Rinse mouth. Do NOT induce vomiting by use of emetics. Seek medical attention.

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

- **Acute effects:**  
1-Bromo-2-butyne is toxic if swallowed , causes skin and serious eye irritation. It may cause respiratory irritation.
- **Chronic effects:**  
To the best of our knowledge the chronic effects of this compound have not been fully investigated.

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

No data available

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1 : Extinguishing media

**Suitable extinguishing media:** Dry chemical, foam, water spray, carbon dioxide.

**Unsuitable extinguishing media:** Solid streams of water

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

**Specific hazards:** Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

**Hazardous combustion products:** These products include: Carbon oxides, Halogenated compounds

**5.3 : Advice for firefighters**

As in any fire, wear self-contained breathing apparatus. Wear full protective suit.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 : Personal precautions, protective equipment and emergency procedures**

**Personal precautions:** Use extra personal protective equipment (self-contained breathing apparatus). Keep people away from and upwind of spill/leak. Keep away from ignition sources. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

**6.2 : Environmental precautions**

Prevent product from entering drains

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

Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

**6.4 : Reference to other sections**

For disposal see section 13.

**SECTION 7: HANDLING AND STORAGE**

**7.1 : Precautions for safe handling**

**Safe Handling:**

- Handling is performed in a well ventilated place.
- Wear suitable protective equipment.
- Prevent generation of vapour or mist.
- Keep away from heat/sparks/open flame/hot surfaces. -No smoking.
- Take measures to prevent the build up of electrostatic charge.
- Use explosion-proof equipment.
- Wash hands and face thoroughly after handling.
- Use a closed system if possible.
- Use a ventilation, local exhaust if vapour or aerosol will be generated.
- Avoid contact with skin, eyes and clothing.

**7.2 : Storage**

- Store in a tightly closed container under nitrogen at 2-8 °C in a dry and ventilated place
- Store away from heat, flame and sparks.
- Store in a flame proof area.
- Store away from incompatible materials.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 : Control parameters

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

### 8.2 : Exposure Limits Values

- OSHA PEL: No data available.
- NIOSH REL: No data available.
- ACGIH TLV: No data available.

### 8.3 : Exposure Limits (International)

- No Information available

### 8.4 : Derived No-Effect-Levels (DNEL) Predicted No-Effect-concentration (PNEC)

- No Information available

### 8.5 : Exposure controls

#### General protective and hygiene measures

- Wear protective gloves/protective clothing/eye protection/face protection.
- The standard precautionary measures should be adhered to when handling
- Wash hands during breaks and at the end of handling the material
- Immediately remove any contaminated clothing

#### Appropriate Engineering Controls:

- Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

### 8.6 : Personal Protection

**Eye/face protection:** Face shield and safety glasses 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, Flame retardant antistatic protective 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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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)

### 8.7 : Occupational hygiene

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- No data available.

### 8.8 : Additional Information

- No data available.

### 8.9 : Control of environmental exposure

- Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Information on basic physical and chemical properties.

Sr. No.	Parameter	Typical value
1.	Appearance	Colorless to yellow colored liquid
2.	Molecular weight	132.99
3.	Odor	characteristic odor
4.	pH	6-7 (16g/l water @20 °C)
5.	pKa (@25°C)	No information available
6.	Melting point	No data available
7.	Boiling point	123-125°C
8.	Flash point	36°C closed cup
9.	Evaporation rate (n-BuAc=1)	No data available
10.	Flammability	Flammable
11.	Upper/lower flammability or Explosive limits	No data available
12.	Vapor pressure	15.2 Torr at 25°C
13.	Relative Density	1.519 g/cm <sup>3</sup> at 25 °C
14.	Solubility	Soluble in organic solvents like MDC, Methanol, MTBE etc. Insoluble in water
15.	Partition coefficient ( Octonol /water)	1.93 at 25 °C (Estimated)
16.	Auto-ignition temperature	No information available
17.	Decomposition temperature	No information available
18.	Viscosity	0.614Cp (Predicted)
19.	Explosive property	Product is not explosive. However, formation of explosive air/vapor mixtures are possible
20.	Oxidizing property	No information available

## SECTION 10: STABILITY AND REACTIVITY

- Reactivity:** No data available
- Chemical stability:** Stable under proper recommended conditions.
- Possibility of hazardous reactions:** No special reactivity has been reported
- Conditions to avoid:** Spark, Open flame, Static discharge
- Incompatible materials:** Oxidizing agents
- Hazardous decomposition Products :** Carbon dioxide, Carbon monoxide, Hydrogen bromide
- Hazardous Polymerization:** Polymerization will not occur.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 : Information on toxicological effects**

**Acute Toxicity:**

- Oral: LD50 (rat): 290 mg/kg (Predicted Oral rat LD50 from Consensus method-US EPA Tool)
- Inhalation: LC50(rat): No data available
- Dermal LD50 (rat): No data available

**Skin irritation/corrosion :** Causes skin irritation

**Eye damage/irritation:** Causes serious eye irritation

**Respiratory or skin sensitization:** No data available

**Germ cell mutagenicity:** No data available.

**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No data available

**Specific target organ system toxicity - repeated exposure:** No effects known.

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

**Aspiration hazard:** No data available.

**Additional information:** To the best of our knowledge, the chemical, physical and toxicological properties of this substance have not been thoroughly investigated.

**RTECS:** Not available

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 : Toxicity**

- Fathead minnow LC<sub>50</sub> (96 hr)- 26.9 mg/L (Predicted Fathead minnow LC50 (96 hr) from Consensus method)  
As per predicted results it may be harmful to aquatic life so discharge into the environment must be avoided.

**12.2 : Persistence and degradability**

1-Bromo-2-butyne	
Persistence and degradability	Not readily biodegradable

**12.3 : Bio accumulative potential**

1-Bromo-2-butyne	
Bio accumulative potential	BCF-8.77L/Kg (Log BCF- 0.943) (Estimated)

**12.4 : Mobility in Soil**

1-Bromo-2-butyne	
Soil Adsorp. Coeff. (Estimated Koc)	1.86





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Henry's Law Constant	1.24E-003 atm-m <sup>3</sup> /mole (Estimated)
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## 12.5 : Other adverse effects

- No data available

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 : Disposal of waste

- Product:** Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

### 13.2 : Disposal of packaging

- Contaminated packaging:** Dispose of as unused product. Do not re-use empty containers.

## SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be Hazardous for transport by Air/ Rail/ Road and Sea and thus regulated by IATA/ ICAO/ US DOT/ IMO/ IMDG.

	ADR/ RID/ DOT	IMDG	IATA
<b>14.1 UN number</b>	UN1993	UN1993	UN1993
<b>14.2 UN proper shipping name</b>	Flammable liquids, n.o.s (1-Bromo-2-butyne)	Flammable liquids, n.o.s(1-Bromo-2-butyne)	Flammable liquids, n.o.s(1-Bromo-2-butyne)
<b>14.3 Transport hazard class(es)</b>	3	3	3
<b>14.4 Packing group</b>	III	III	III
<b>14.5 Environmental hazards</b>	No	No	No

## SECTION 15: REGULATORY INFORMATION

### Classification as per CLP Regulation 1272/2008:

Flammable Liquid: Category 3

Acute toxicity (oral): Category 3

Skin Corrosion/irritant: Category 2

Serious eye damage/eye irritant: Category 2A

Specific Target Organ Toxicity: Category 3

(After Single Exposure)

### **Hazard Statements:**

H226, H301, H315, H319, H335

Chemical Inventory Lists:	Status
TSCA:	Not Listed



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EC list	Listed
Canada(DSL/NDSL):	Not Listed
China Catalog of Hazardous chemicals 2022	Not Listed
New Zealand Inventory of Chemicals (NZIoC)	Not Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed
Inventory of Existing and New Chemical Substances (ENCS)	Not Listed
Japan ISHL Existing Substances List (ISHL)	Not Listed
China: IECSC	Not Listed
Existing Chemicals List (KECI)	Not Listed
Australian Inventory of Chemical Substances (AICS)	Not Listed
Chemical Substance Inventory in Taiwan, China (TCSI)	Listed

### US information

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):** 1-Bromo-2-Butyne not listed.

**SARA 302/304 :** 1-Bromo-2-Butyne not listed.

**SARA 311/312 :** See section 2 for more information

**California Prop. 65:** 1-Bromo-2-Butyne not listed.

**CAA (Clean Air Act):** 1-Bromo-2-Butyne not listed.

**CWA (Clean Water Act):** 1-Bromo-2-Butyne not listed.

### EU Information

**Water hazard class (WGK) 3 - severe hazard to waters**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006:** 1-Bromo-2-Butyne not listed.

## SECTION 16: OTHER INFORMATION

### a) : Compilation information of safety data sheet

Date of Compilation	: May 27, 2013
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### b) A key or legend to aberrations and acronyms used in the safety data sheet

SCBA	= Self Contained Breathing Apparatus.
NIOSH REL	= National Institute for Occupational Safety and Health Recommended Exposure Limit.
OSHA PEL	= Occupational Safety and Health Administration Permissible Exposure Limit.



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RTECS	= Registry of Toxic Effects of Chemical Substances.
IARC	= International Agency for Research on Cancer.
TSCA	= Toxic Substances Control Act.
DSL/NDSL	= Domestic/Non-Domestic Substances List.
TLV	= Threshold Limit Value.
ACGIH	= American Conference of Governmental Industrial Hygienists.
REACH	= Registration, Evaluation, Authorization and Restriction of Chemicals.
CLP	= Classification, Labeling and Packaging.
GHS	= Globally Harmonized System.
IMDG-Code	= International Maritime Code for Dangerous Goods.
ICAO	= International Civil Aviation Organization.
IATA/DGR	= International Air Transport Association/Dangerous Goods Regulation.

### c) Key Literature reference and sources for data

#### Biographical reference and data sources

- Globally Harmonized System of Classification and Labelling of Chemicals.
- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009
- REG (EC) no. 1907/2006, last modification by REG (EC) Nr. 830/2015

#### SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

(End of Safety Data Sheet)