



# LABORATORY REAGENT

INDO GULF COMPANY TEL - 0091-22-2345522-/356. FAX - 23476535.

## Material Safety Data Sheet N-Butyl bromide (1-Bromobutane)

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** N-Butyl bromide (1-Bromobutane)  
**Synonyms:** 1-Butyl Bromide; 1-Bromobutane.

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
109-65-9	N-Butyl bromide	>98	203-691-9

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: clear yellow clear liquid. Flash Point: 65 deg F.

**Warning! Flammable liquid and vapor.** Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression.

**Target Organs:** Central nervous system, respiratory system, eyes, skin.

#### Potential Health Effects

**Eye:** Causes eye irritation. May cause chemical conjunctivitis and corneal damage.

**Skin:** Causes skin irritation. May be harmful if absorbed through the skin. May cause cyanosis of the extremities.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed. Ingestion of large amounts may cause CNS depression.

**Inhalation:** Causes respiratory tract irritation. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Vapors may cause dizziness or suffocation.

**Chronic:** Prolonged or repeated skin contact may cause defatting and dermatitis. May cause liver and kidney damage. Prolonged or repeated exposure may cause nausea, dizziness, and headache. Narcotic in high concentrations.

#### Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

#### Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Containers may explode in the heat of a fire. Flammable liquid and vapor.

**Extinguishing Media:** Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam.

**Flash Point:** 65e deg F ( 18.33 deg C)

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:**Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 3; Instability: 0

#### Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

#### Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
N-Butyl bromide	none listed	none listed	none listed

**OSHA Vacated PELs:** N-Butyl bromide: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** 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:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

## Section 9 - Physical and Chemical Properties

**Physical State:** Clear liquid

**Appearance:** clear yellow

**Odor:** None reported.

**pH:** Not available.

**Vapor Pressure:** 40 mm Hg @ 20 deg C

**Vapor Density:** 4.72

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** 100-104 deg C @ 760.00mmHg

**Freezing/Melting Point:** -112 deg C

**Decomposition Temperature:** Not available.

**Solubility:** 0.608g/l (30 c)  
**Specific Gravity/Density:** 1.2760g/cm<sup>3</sup>  
**Molecular Formula:** C<sub>4</sub>H<sub>9</sub>Br  
**Molecular Weight:** 137.02

#### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Ignition sources, excess heat.

**Incompatibilities with Other Materials:** Strong oxidizing agents, strong bases, active metals, alkali metals, magnesium, potassium, sodium.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, hydrogen bromide.

**Hazardous Polymerization:** Has not been reported.

#### Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 109-65-9: EJ6225000

**LD50/LC50:**

**CAS#** 109-65-9:

Inhalation, mouse: LC50 = 25000 mg/m<sup>3</sup>/2H;

Inhalation, rat: LC50 = 47000 mg/m<sup>3</sup>/2H;

Oral, rat: LD50 = 2761 mg/kg;

**Carcinogenicity:**

**CAS#** 109-65-9: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found

**Teratogenicity:** No information found

**Reproductive Effects:** No information found

**Mutagenicity:** Mutations in microorganisms: *Salmonella typhimurium* = 10 umol/plate. Microsomal Mutagenicity Assay: *Salmonella typhimurium* 10 umol/plate.

**Neurotoxicity:** No information found

**Other Studies:**

#### Section 12 - Ecological Information

**Ecotoxicity:** No data available. No information available.

**Environmental:** No data available.

**Physical:** No data available.

**Other:** None.

### Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

### Section 14 - Transport Information

	IATA	
<b>Shipping Name:</b>	1-BROMOBUTANE	
<b>Hazard Class:</b>	3	
<b>UN Number:</b>	UN1126	
<b>Packing Group:</b>	II	

### Section 15 - Regulatory Information

**Hazard Symbols:**

XI

**Risk Phrases:**

R 10 Flammable.

R 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety Phrases:**

S 16 Keep away from sources of ignition - No smoking.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

### Section 16 - Additional Information

**MSDS Creation Date:** 12/12/1997

**Revision #6 Date:** 11/11/2004

*The information above is believed to be accurate and represents the best information*

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