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MSDS

Material Safety Data Sheet

from: **Mallinckrodt Baker, Inc.**
222 Red School Lane
Plymouth, NJ 08865



24 Hour Emergency Telephone: 800-368-2191
CHEMTREC: 1-800-424-9090

National Response in Canada
CAWTEC: 015-893-4080

Outside U.S. and Canada
Chemtreat 302 488 7818

NOTE: CHEMTREC, CAWTEC and National
Response Center emergency numbers to be
used only in the event of chemical emergencies
involving a spill, leak, fire, exposure or accident
involving chemicals

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance

-BROMOBUTANE

SDS Number: B4176 --- Effective Date: 12/08/96

. Product Identification

Synonyms: Butane, 1-Bromo-; Butyl bromide normal; N-Butyl bromide

CAS No.: 109-65-9

Molecular Weight: 137.03

Chemical Formula: CH3(CH2)2CH2Br

Product Codes: C878

. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Butyl Bromide, Normal	109-65-9	90 - 100%	Yes

. Hazards Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT LIVER, KIDNEYS AND CENTRAL NERVOUS SYSTEM..

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 3 - Severe (Flammable)

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS

Storage Color Code: Red (Flammable)

Potential Health Effects

Information on the human health effects from exposure to this substance is limited.

Inhalation:

Inhalation causes irritation of mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. High levels can cause dizziness and lightheadedness.

Ingestion:

No information found, but compound should be handled as a potential health hazard. May cause irritation to the gastro-intestinal tract.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Repeated exposure may cause liver and kidney damage.

Aggravation of Pre-existing Conditions:

No information found.

. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes while removing

contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

. Fire Fighting Measures

Fire:

Flash point: 65C (149F) CC Autoignition temperature: 509C (948F) Flammable limits in air % by volume: lel: 2.6; uel: 6.6 Flammable liquid and vapor. Maybe ignited by heat, sparks, flames. Fire may produce irritating or poisonous gases.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapor explosion hazard indoors, outdoors and in sewers. Runoff to sewer may create fire or explosion hazard. Vapors can flow along surfaces to distant ignition source and flash back. Sealed containers may rupture when heated. Contact with strong oxidizers may cause fire. Sensitive to static discharge.

Fire Extinguishing Media:

Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures.

. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. J. T. Baker SOLUSORB(tm) solvent adsorbent is recommended for spills of this product.

. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material

may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

. Physical and Chemical Properties

Appearance:

Colorless liquid

Odor:

No information found.

Solubility:

Insoluble in water.

Specific Gravity:

1.2686 @ 25C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

100 - 101C (212 - 214F)

Melting Point:

-112C (-170F)

Vapor Density (Air=1):

4.72

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

0. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Oxides of carbon as well as ionic or oxidized halogen.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers and strong bases.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

1. Toxicological Information

Investigated as a mutagen.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Elemental Bromide, Normal (109-65-9)	No	No	None

2. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

3. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

4. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: N-BUTYL BROMIDE

Hazard Class: 3

UN/NA: UN1126

Packing Group: II

Information reported for product/size: 250ML

International (Water, I.M.O.)

Proper Shipping Name: 1-BROMOBUTANE

Hazard Class: 3.2

UN/NA: UN1126

Packing Group: II

Information reported for product/size: 250ML

International (Air, I.C.A.O.)

Proper Shipping Name: 1-BROMOBUTANE

Hazard Class: 3.2

UN/NA: UN1126

Packing Group: II

Information reported for product/size: 250ML

5. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Butyl Bromide, Normal (109-65-9)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	DSL	NDSL	Phil.
Butyl Bromide, Normal (109-65-9)	No	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-	TPQ	List	-SARA 313-
	RQ			Chemical Catg.
Butyl Bromide, Normal (109-65-9)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8 (d)
Butyl Bromide, Normal (109-65-9)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 RA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
 activity: No (Pure / Liquid)

Australian Hazchem Code: 2[Y]E
Poison Schedule: No information found.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

6. Other Information

NFPA Ratings: Health: 2 Flammability: 3 Reactivity: 0

Label Hazard Warning:

WARNING! FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT LIVER, KIDNEYS AND CENTRAL NERVOUS SYSTEM..

Label Precautions:

Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor. Wash thoroughly after handling. Avoid contact with eyes, skin and clothing.

Label First Aid:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. In all cases call a physician.

Product Use:

Laboratory Reagent.

Revision Information:

Pure. New 16 section MSDS format, all sections have been revised.

Disclaimer:

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