

MATERIAL SAFETY DATA SHEET

Stabilized N-Propyl Bromide

Updated on 8/10/2009

Material Identification

Product Name: Stabilized NPB (N-Propyl Bromide)
CAS No: 106-94-5
Chemical Family: Halogenated hydrocarbons
Primary Usage: Specialty cleaning solvent.

For emergencies in the US, please call CHEMTREC: 800-424-9300 for help

Hazardous Ingredients/Identity Information

	CAS NO.	Weight %	OSHA PEL	ACGIH TLV
n-Propyl bromide	106-94-5	95	**	Not est.
1,2 Epoxybutane	106-88-7	<1	Not est.	Not est.
Tert-butanol	75-65-0	<1	100 ppm	100 ppm
n-Propanol	71-23-8	>4	400 ppm	400 ppm

**Source of Exposure Limit Data: Manufacturer's TWA

Physical Data

Boiling Point 159 °F. (70.9 C.)
Freezing Point -166 °C.
Vapor Pressure 143 mmHg
Vapor Density 4.3
Water Solubility 2.5 g/l
Evaporation Rate Not Determined
Decomposition Temp. >400 degrees C.

Appearance Clear colorless liquid
Odor Slight Ethereal
Iso-Propyl Bromide <100 ppm

Hitac Chemicals Inc
1040 S. Milwaukee Ave. Suite 230, IL 60090
Tel: (224)522-8020; Fax: (224)836-5139

Fire and Explosion Data

Flash Point	None
Extinguishing Media	Material is not flammable.
Special Fire Fighting Procedures	Fire fighters should wear NIOSH-approved self-contained breathing apparatus in positive pressure mode.

Unusual Fire/Explosion Hazards	Product will decompose at temperatures above 400°C releasing fumes of carbon monoxide, carbon dioxide, hydrogen bromide and/or bromine.
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HMIS Hazard Ratings

NPB HAZARD RATING		HMIS RANK
HEALTH HAZARD	2	0 INSIGNIFICANT
FIRE HAZARD	0	1 SLIGHT
REACTIVITY HAZARD	0	2 MODERATE
		3 HIGH
		4 EXTREME

Acute Exposures

SIGNS AND SYMPTOMS BY ROUTES OF EXPOSURE AND FIRST AID PROCEDURES

INHALATION: High concentrations are irritating to the respiratory tract. May cause headache, dizziness, nausea vomiting narcosis in confined or poorly ventilated areas. Remove victim to fresh air. Provide oxygen if breathing is difficult. Administer cardiac pulmonary resuscitation (CPR) if victim is not breathing. Seek medical attention.

SKIN: Brief contact may cause slight irritation, prolonged contact may cause moderate irritation and dermatitis. This problem may be accentuated by liquid becoming trapped against the skin by contaminated clothing and shoes. Remove contaminated clothing. Wash effected area with plenty of soap and water. Launder contaminated clothing before reuse. If irritation persists, seek medical attention.

EYES: Contact or high vapor concentration may cause irritation and pain. If irritation persists, seek medical attention. Flush eyes with water for 15 minutes while holding eyelids open. If irritation persists, seek medical attention.

INGESTION: Swallowing of this material may result in irritation of the mouth and gastrointestinal tract, abdominal pain and vomiting in addition to effects similar to those caused by inhalation. If victim is conscious, have him drink large amounts of water. DO NOT induce vomiting. DO NOT give anything by mouth to an unconscious person. Seek immediate medical attention.

Workplace exposure limit for 8 hour workday: 100 ppm

Carcinogenicity NTP: Not listed

IARC: Not listed

OSHA: Not regulated

California Proposition 65:Not listed

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Special Protective Equipment and Ventilation

Respiratory Protection	At high levels of concentration, use self-contained breathing apparatus.
Ventilation Requirements	Use adequate mechanical or local exhaust ventilation to keep vapor and mist levels as low as possible.
Eye/Face	Splash-proof chemical safety goggles or face shield. Contact lenses should not be worn when working with this material.
Protective Gloves	Gloves impervious to chemicals. Viton & Norfoil recommended. Do not use natural rubber gloves.
Protective Clothing Work/Hygienic Practices	Clean body-covering, apron and boots not made of natural rubber. Eliminate body contact with this chemical. Do not eat, drink or smoke until after work washing.
Special/Other	Provide a safety eye bath at work area. Provide a safety shower.

Reactive Hazards

Stability	Stable.
Conditions to Avoid	Avoid temperatures above 400 C.
Hazardous Polymerization	Will not occur.
Incompatibility (material to avoid)	Avoid strong oxidizers and acids. May attack some plastics, rubber and coatings. Thoroughly test for all applications before use.

Precautions for Safe Handling and Use

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Evacuate the areas. Stop leak if this can be done without risk. Contain spills and cover with vermiculite or sand.

WASTE DISPOSAL METHOD

Dispose of in accordance with Local, State and Federal regulations. Do not flush to sanitary sewer or waterway. Refer to RCRA regulations 40 CFR 260-281 for waste disposal instructions.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container tightly closed when not in use. Protect from extreme temperatures. Isolate from incompatible materials. Do not store near food.

OTHER PRECAUTIONS

Keep this chemical out of reach of children. Minimize body contact with this product. Avoid inhaling fumes or vapors.

Transport Information

Hazardous Materials Descriptions and Proper Shipping Names
(Vapor degreasing solvent, halogenated hydrocarbon mixture, n.o.s.)

Hazard Class - Non-flammable liquid

Packing Group - III

Label(s) Required - None

Quantity Limitations- Not Regulated

Classification number – 149980-2

Marine and Air Transportation

MATERIAL SAFETY DATA SHEET

Neat N-Propyl Bromide

Updated on 8/10/2009

MSDS Name: 1-Bromopropane, 99.5%
Synonyms: N-Propyl Bromide.

CAS#106-94-5

For emergencies in the US, please call CHEMTREC: 800-424-9300 for help

Hazard Symbols: XN

Risk Phrases: 10 20

EMRGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 25 deg C. May cause central nervous system depression. May cause liver and kidney damage. May cause blood abnormalities. May cause severe eye and skin irritation with possible burns. Causes respiratory tract irritation and possible burns. May cause adverse reproductive effects based upon animal studies.

Warning!

Target Organs: Kidneys, central nervous system, liver, bone marrow.

Potential Health Effects:

EYE: Causes eye irritation and possible burns.

Skin: Causes skin irritation and possible burns.

Ingestion: May cause irritation of the digestive tract.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause liver and kidney damage. Vapours may cause dizziness or suffocation. Exposure may cause bone marrow changes. Exposure may cause blood abnormalities. Causes respiratory tract irritation with possible burns.

Chronic: Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. There are not enough human data on 1-bromopropane to determine whether the chemical has harmed human reproduction and development. However, research on lab rats shows 1-bromopropane can damage reproduction and development in that animal. Effects, such as a lengthened estrous (reproductive) cycle, occurred when female rats inhaled 1-bromopropane at concentrations of 250 ppm.

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

Skin: Get medical aid. Flush skin with plenty of water at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes.

Ingestion: If victim is conscious and alert, give 2-4 cup of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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

Notes to Physician: Treat symptomatically and supportively.

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NOISH (approved or equivalent), and full protective gear.

Vapors may form an explosive mixture with air. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. May polymerize explosively when involved in a fire. Vapors can spread along the ground and collect in low or confined areas.

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Extinguishing Media: For small fires, used dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires ,use water spray, fog, or alcohol-resistant foam. Water may be ineffective. DO NOT get water inside containers. Do NOT use straight streams of water.

Flash Point: 25 deg C(77.00 deg F)

Autoignition Temperature: 490 deg C(914.00 deg F)

Explosion Limits, Lower: 4.60 vol %

Upper: 7.8vol%

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

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

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth),then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool.

Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

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. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits:

1-Bromopropane none listed none listed none listed

OSHA Vacated PELs: 1-Bromopropane: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: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Physical State: Liquid

Appearance: clear, colorless

Odor: None reported.

PH: Not available

Vapor Pressure: 146 [mmHg@20C](#)

Vapor Density: 4.34(air=1)

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 71 deg [C@760](#) mm Hg

Freezing/Melting Point:-110deg C

Decomposition Temperature: Not available.

Solubility: 2.5 g/l

Specifics Gravity/Density: 1.35 g/cm3

Molecular Formula: C3H7Br

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Molecular Weight: 122.99

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, hydrogen bromide.

Hazardous Polymerization: Has not been reported.

RTECS#:

CAS# 106-94-5:TX110000

LD50/LC50:

CAS# 106-94-5:

Inhalation, rat:LC 50 =253 gm/m3/30M;<BR.

Carcinogenicity:

CAS#106-94-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: Experimental reproductive effects have been reported.

Teratogenicity: No information available.

Reproductive Effective: See actual entry in RTECS for complete information.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Other Studies: No data available.

US FEDERAL

TSCA

CAS#106-94-5 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals are listed under a Chemical Test Rules.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS#106-94-5: acute, chronic, flammable.

Section 313

No chemicals are reported under Section 313.

Clean Air act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS#106-94-5 can be found on the following state right to know lists: Pennsylvania, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols

XN

Risk Phases:

R 10 Flammable.

R 20 Harmful by inhalation.

Safety Phrases:

S 24 Avoid contact with skin.

S 9 Keep container in a well-ventilated place.