RETURN ON PUMP FROM EVANS CHEMETICS

1. Chemical Product & Company Identification

Product n-Butyl 3-Mercaptopropionate

Evans Chemetics LP, 228 East Main St. Waterloo, NY 13148
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2. Composition / Information On Ingredients

n-Butyl 3-mercaptopropionate	CAS#	16215-21-7	98.0 % Nom
n-Butanol	CAS#	71-36-3	2.0 % Max.

3. Hazards Identification

EMERGENCY OVERVIEW

Near-water white liquid. Butyl-like odor. Combustible. Causes eye irritation.

POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE:
May cause moderate irritation with corneal injury.

SKIN:
Prolonged exposure may cause skin irritation. A single prolonged exposure may result in the material being absorbed in harmful amounts.

INGESTION:
Single dose oral toxicity is considered to be moderate. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death. If aspirated (liquid enters the lung), may be rapidly absorbed through the lungs and result in injury to other body systems.

INHALATION:
Excessive exposure may cause severe irritation to the upper respiratory tract (nose and throat). Signs and symptoms of excessive exposure may be central nervous system effects. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:
For the minor component (s) n-butanol. In animals, effects have been reported on the following organs: central nervous system, kidney, liver, lung. Butanol has been reported to cause eye effects (tearing, blurred vision, sensitivity to light, temporary corneal effects), hearing loss and vertigo. No relevant information found on other component (s).

CANCER INFORMATION:
No relevant information found.

TERATOLOGY (BIRTH DEFECTS):
For the minor component (s) n-butanol. Birth defects are unlikely. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the

mother. No relevant information found on other component (s).

REPRODUCTIVE EFFECTS:
No relevant information found.

4. First Aid

EYE:
Irrigate with flowing water immediately and continuously for at least 15 minutes. Consult medical personnel.

SKIN:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician if irritation persists. Destroy items which cannot be decontaminated, such as shoes.

INGESTION:
Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

INHALATION:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personell. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN:
Because rapid absorption may occur through lungs if aspirated and cause systemic effects, the decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. Fire Fighting Measures

FLAMMABLE PROPERTIES

FLASH POINT:	195 °F Nom
	METHOD USED: closed cup
AUTOIGNITION TEMPERATURE:	Not determined

FLAMMABILITY LIMITS:

LFL:	NOT DETERMINED
UFL:	NOT DETERMINED

HAZARDOUS COMBUSTION PRODUCTS:
During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to sulfur oxides, hydrogen sulfide, carbon monoxide and carbon dioxide.

OTHER FLAMMABILITY INFORMATION:
Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

EXTINGUISHING MEDIA:
Water fog or fine spray, carbon dioxide, dry chemical, foam. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF type) or protein

foams may function but much less effectively.

MEDIA TO BE AVOIDED:
Do not use direct water stream.

FIRE FIGHTING INSTRUCTIONS:
Keep people away. Isolate fire area and deny unnecessary entry. Do not use direct water stream. May spread fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Move container from fire area if this is possible without hazard. Fight fire from protected location or safe distance. Consider use of unmanned hose holder or monitor nozzles. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this MSDS.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:
Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. Accidental Release Measures

(See Section 15 for Regulatory Information)

PROTECT PEOPLE:
Clear non-emergency personnel from area. Avoid contact with eyes. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls/Personal Protection.

PROTECT THE ENVIRONMENT:
Avoid contamination of all waterways.

CLEANUP:
Contain liquid. Absorb with materials such as sand. Transfer to suitable and properly labeled containers. Remove residual using hot soapy water. See Section 13, Disposal Considerations.

7. Handling And Storage

HANDLING:
Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld or perform similar operations on or near empty containers. See Section 8, Exposure Controls/Personal Protection.

STORAGE:
Store away from oxidizing materials. Do not store in carbon steel. See Section 8, Exposure Controls/Personal Protection. See Section 10, Stability and Reactivity.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS:
Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION:
Use chemical goggles.

SKIN PROTECTION:
Use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water and launder clothing before reuse. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and destroyed.

RESPIRATORY PROTECTION:
Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

EXPOSURE GUIDELINES:
n-Butyl alcohol: ACGIH TLV and OSHA PEL are 50 ppm Ceiling, Skin. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.
A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposure should be considered.

9. Physical And Chemical Properties

APPEARANCE/PHYSICAL STATE:	Near-water white liquid
ODOR:	Butyl-like.
VAPOR PRESSURE:	0.182 hPa @ 25 ℃ , calculated
VAPOR DENSITY:	Not determined
BOILING POINT:	217 ℃ @ 760 mmHg
SOLUBILITY IN WATER/MISCIBILITY:	Insoluble
SPECIFIC GRAVITY OR DENSITY:	1.04 - 1.06, DIN 51757
PARTITION COEFFICIENT (log Pow):	2.5, calculated

10. Stability And Reactivity

CHEMICAL STABILITY:
Thermally stable at typical use temperatures.

CONDITIONS TO AVOID:
Product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

INCOMPATIBILITY WITH OTHER MATERIALS:
Avoid contact with oxidizing materials. Reaction with oxidizers can be violent. Avoid unintended contact with ammonia, strong acids and strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS:
Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Hazardous decomposition products may include and are not limited to hydrogen sulfide and sulfur oxides. Toxic gases are released during decomposition.

HAZARDOUS POLYMERIZATION:
Will not occur.

11. Toxicological Information

(See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

ACUTE ORAL TOXICITY:
Note: Single dose oral LD50 has not been determined.

ACUTE DERMAL TOXICITY:
Note: The dermal LD50 has not been determined.

GENETIC TOXICITY IN VITRO:
Note: For the minor component (s) n-butanol. In vitro mutagenicity studies were negative. No relevant information found on other component (s).

12. Ecological Information

(For detailed Ecological data,write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

BIOACCUMULATION:

Bioconcentration factor (BCF)	43.9
Method:	calculated

DEGRADATION & PERSISTENCE:
No relevant information found.

MOVEMENT & PARTITIONING:
Log Pow = 2.5, calculated

ECOTOXICITY:

No relevant information found.

13. Disposal Considerations

(See Section 15 for Regulatory Information)

DISPOSAL:

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Evans Chemetics has no control over the management practices or manufacturing processes of parties handling or using this material. The information presented here pertains only to the product as shipped in its intended condition as described in msds section 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device.

As a service to its customers, Evans can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums.

14. Transport Information

DEPARTMENT OF TRANSPORTATION (D.O.T.):
For D.O.T. regulatory information, if required, consult transportation regulations, product shipping papers or contact your Evans representative.

15. Regulatory Information

(Not meant to be all-inclusive selected regulations represented)

U.S. REGULATIONS

SARA 313 INFORMATION:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

COMPONENTS	CAS NUMBER	CONCENTRATION
n-Butanol	71-36-3	2 %

SARA HAZARD CATEGORY:
This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard.
A delayed health hazard.
A fire hazard.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW:
The following product components are cited on certain state lists as mentioned.
Non-listed components may be shown in the composition section of the MSDS.

OSHA HAZARD COMMUNICATION STANDARD:
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

16. Other Information

HAZARD RATING SYSTEMS:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	2
Flammability	2
Reactivity	1

17. Disclaimer:

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