



SAFETY DATA SHEET

Creation Date 23-Apr-2010

Revision Date 11-Nov-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Description: 1-Butanethiol
Cat No. 150800000; 150800010; 150800500; 150802500
Synonyms n-Butyl mercaptan

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

Recommended Use Laboratory chemicals
Uses advised against No Information available

Details of the supplier of the safety data sheet

Company

Acros Organics BVBA
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

Emergency Telephone Number

For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100

CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Skin Corrosion / irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ systemic toxicity (single exposure)	Category 3
Flammable liquids.	Category 2

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R phrases mentioned in this Section, see Section 16

Symbol(s) Xn - Harmful
F - Highly flammable

R -phrase(s) R11 - Highly flammable

Risk Combination Phrases R20/22 - Harmful by inhalation and if swallowed
R36/37/38 - Irritating to eyes, respiratory system and skin

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2. HAZARDS IDENTIFICATION

Label Elements



Signal Word

Danger

Hazard Statements

- H315 - Causes skin irritation
- H335 - May cause respiratory irritation
- H319 - Causes serious eye irritation
- H332 - Harmful if inhaled
- H302 - Harmful if swallowed
- H225 - Highly flammable liquid and vapor

Precautionary Statements - EU (§28, 1272/2008)

- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
- P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

Other Hazards

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC No.	Weight %	CAS-No	Classification	GHSCLAS	REACH Reg. No.
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Butyl mercaptan 109-79-5	EEC No. 203-705-3	>95	109-79-5	F; R11 Xn; R20/22 Xi; R36/37/38	STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302) Acute Tox. 4 (H332) Flam Liq. 2 (H225)	-
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For the full text of the R phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of first aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Immediate medical attention is required

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes
Immediate medical attention is required

Ingestion

Do not induce vomiting
Call a physician or Poison Control Center immediately

Inhalation

Move to fresh air
If breathing is difficult, give oxygen
Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device
Immediate medical attention is required

Notes to Physician

Treat symptomatically

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Cool closed containers exposed to fire with water spray

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Flammable
Containers may explode when heated
Vapors may form explosive mixtures with air
Vapors may travel to source of ignition and flash back

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Thermal decomposition can lead to release of irritating gases and vapors

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental precautions

Should not be released into the environment.

Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use only under a chemical fume hood Wear personal protective equipment Do not get in eyes, on skin, or on clothing Avoid ingestion and inhalation Keep away from open flames, hot surfaces and sources of ignition Use only non-sparking tools Use explosion-proof equipment Take precautionary measures against static discharges

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place Flammables area Keep away from heat and sources of ignition

Specific End Uses

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters
Exposure limits
Component

Butyl mercaptan

European Union	The United Kingdom	France	Belgium	Spain
		VME: 0.5 ppm VME: 1.5 mg/m ³	TWA: 1.8 mg/m ³ TWA: 0.5 ppm	VLA-ED: 0.5 ppm VLA-ED: 1.9 mg/m ³

Component

Butyl mercaptan

Italy	Portugal	The Netherlands	Finland	Denmark
	TWA: 0.5 ppm		TWA: 1.9 mg/m ³ TWA: 0.5 ppm STEL: 1.5 ppm STEL: 5.6 mg/m ³	TWA: 1.5 mg/m ³ TWA: 0.5 ppm

Component

Butyl mercaptan

Austria	Switzerland	Poland	Norway	Ireland
STEL: 0.5 ppm STEL: 1.5 mg/m ³ MAK: 0.5 ppm MAK: 1.5 mg/m ³ Ceiling: 0.5 ppm Ceiling: 1.5 mg/m ³	STEL: 3.8 mg/m ³ STEL: 1 ppm MAK: 1.9 mg/m ³ MAK: 0.5 ppm	NDSch: 2 mg/m ³ NDS: 1 mg/m ³	TWA: 0.5 ppm TWA: 1.5 mg/m ³	TWA: 1.8 mg/m ³ TWA: 0.5 ppm

Derived No Effect Level (DNEL)

No information available.

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Predicted No Effect Concentration (PNEC)	No information available.
Exposure controls	
Engineering Measures	Use only under a chemical fume hood Ensure that eyewash stations and safety showers are close to the workstation location Use explosion-proof electrical/ventilating/lighting/equipment
Personal protective equipment	
Eye Protection	Safety glasses with side-shields
Hand Protection	Protective gloves
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
odor	Garlic-like, Stench
pH	No information available.
Vapor Pressure	83 mmHg @ 37.7 °C
Vapor Density	3.1 (Air = 1.0)
Boiling Point/Range	98°C / 208.4°F @ 760 mmHg
Melting Point/Range	-116°C / -176.8°F
Flash Point	0.5°C / 32.9°F
Explosion Limits	
Lower	1.4 vol%
Upper	11.3 vol%
Water Solubility	Slightly soluble
Specific Gravity	0.840
Molecular Formula	C4 H10 S
Molecular Weight	90.18

10. STABILITY AND REACTIVITY

Reactivity
Chemical Stability
 Air sensitive.

Possibility of Hazardous Reactions
Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions . None under normal processing..

Conditions to Avoid
 Incompatible products, Excess heat, Keep away from open flames, hot surfaces and sources of ignition, Exposure to air.

Incompatible Materials

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Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Butyl mercaptan	1500 mg/kg (Rat)	>34.6 g/kg (Rabbit)	4020 ppm (Rat) 4 h

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization	No information available.
Mutagenic Effects	No information available
Reproductive Effects	No information available.
Developmental Effects	No information available.
Target Organs	Eyes Skin Respiratory system
Other Adverse Effects	The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information
Endocrine Disruptor Information	None known

12. ECOLOGICAL INFORMATION

Toxicity
Ecotoxicity effects

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Butyl mercaptan		5.5 mg/L LC50 48 h		EC50: <0.043 mg/L

Persistence and degradability

Readily biodegradable

Bioaccumulative potential

No information available.

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Component	log Pow
Butyl mercaptan	2.28

Mobility in soil

Results of PBT and vPvB assessment

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products

Dispose of in accordance with local regulations

Contaminated Packaging

Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

IMDG/IMO

UN-No UN2347
Hazard Class 3
Packing Group II
Proper Shipping Name Butyl mercaptans

ADR

UN-No UN2347
Hazard Class 3
Packing Group II
Proper Shipping Name Butyl mercaptans

IATA

UN-No UN2347
Hazard Class 3
Packing Group II
Proper Shipping Name Butyl mercaptan

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

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International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Butyl mercaptan	203-705-3	-		X	X	-	X	X	X	X	KE-05-0249 X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory Lists

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - China Inventory of Existing Chemical Substances

AICS - Inventory of Chemical Substances

KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2-3

R11 - Highly flammable

R20/22 - Harmful by inhalation and if swallowed

R36/37/38 - Irritating to eyes, respiratory system and skin

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Revision Summary Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet