



n - Butyl Mercaptan

Version 1.11

Revision Date 2023-05-19

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2020/878

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product information

Product Name : n - Butyl Mercaptan
 Material : 1125995, 1078953, 1021482, 1021487, 1021492, 1021491,
 1021490, 1021489, 1021488, 1021483, 1021481, 1024804,
 1024805, 1021486, 1021485, 1027453

EC-No.Registration number

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
n-Butyl Mercaptan	109-79-5 203-705-3	Chevron Phillips Chemicals International NV 01-2120737757-41-0001
n-Butyl Mercaptan	109-79-5 203-705-3	Chevron Phillips Chemical Company LP 01-2120737757-41-0002

1.2

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

Relevant Identified Uses Supported : Intermediate: The substance is registered as a Transported Isolated Intermediate with Strictly Controlled Conditions (SCC) defined in Article 18(4) of Regulation EC No. 1907/2006 and must therefore be handled as such.

1.3

Details of the supplier of the safety data sheet

Company : Chevron Phillips Chemical Company LP
 10001 Six Pines Drive
 The Woodlands, TX 77380

Local : Chevron Phillips Chemicals International N.V.
 Airport Plaza (Stockholm Building)
 Leonardo Da Vincilaan 19
 1831 Diegem
 Belgium

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SDS Requests: (800) 852-5530
 Responsible Party: Product Safety Group
 Email:sds@cpchem.com

1.4**Emergency telephone:****Health:**

866.442.9628 (North America)
 1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
 Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
 Mexico CHEMTREC 01-800-681-9531 (24 hours)
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
 Argentina: +(54)-1159839431
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
 Belgium: 070 245 245 (24 hours/day, 7 days/week)
 Bulgaria: +359 2 9154 233
 Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
 Cyprus: 1401
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
 Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Finland: 0800 147 111 09 471 977 (24 hours/day)
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
 Iceland: 543 2222 (24 hours/day, 7 days/week)
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371
 67042473. (24 hours.)
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Lithuania: +370 (85) 2362052
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
 Malta: +356 2395 2000
 The Netherlands: NVIC: +31 (0)88 755 8000
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Portugal: CIAV phone number: +351 800 250 250
 Romania: +40213183606
 Slovakia: +421 2 5477 4166
 Slovenia: Phone number: 112
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24
 hours/day, 7 days/week)
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group
 E-mail address : SDS@CPChem.com
 Website : www.CPChem.com

SECTION 2: Hazards identification**2.1**

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**Classification of the substance or mixture
REGULATION (EC) No 1272/2008**

Flammable liquids, Category 2	H225: Highly flammable liquid and vapor.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2**Labeling (REGULATION (EC) No 1272/2008)**

Hazard pictograms	:	
Signal Word	:	Danger
Hazard Statements	:	H225 Highly flammable liquid and vapor. H302 + H332 Harmful if swallowed or if inhaled. H317 May cause an allergic skin reaction. H410 Very toxic to aquatic life with long lasting effects.
Precautionary Statements	:	Prevention: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. Response: P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P391 Collect spillage.

Hazardous ingredients which must be listed on the label:

- 109-79-5 n-Butyl Mercaptan
- 513-53-1 sec-butyl Mercaptan
- 75-66-1 t-Butyl Mercaptan
- 1679-09-0 t-Amyl Mercaptan

2.3**Other hazards**

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Results of PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients**3.1 - 3.2****Substance or Mixture**

Synonyms : Thiobutyl Alcohol
1-Butanethiol
NBM
Normal Butyl Mercaptan
Butyl Mercaptan

Molecular formula : C4H10S

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]	Specific Conc. Limits, M-factors and ATEs
n-Butyl Mercaptan	109-79-5 203-705-3	Flam. Liq. 2; H225 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Sens. 1B; H317 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	98,5 - 100	M [Acute]=10 M [Chronic]=10

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures**4.1****Description of first-aid measures**

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact

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lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed**Notes to physician**

Symptoms : No data available.

Risks : No data available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No data available.

SECTION 5: Firefighting measures

Flash point : 3,3°C (37,9°F)
Method: ASTM D - 1310

Autoignition temperature : 272°C (522°F)
estimated

5.1**Extinguishing media**

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.

Unsuitable extinguishing media : High volume water jet.

5.2**Special hazards arising from the substance or mixture**

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

5.3**Advice for firefighters**

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Hazardous decomposition products : Carbon oxides. Sulfur oxides.

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SECTION 6: Accidental release measures**6.1****Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2**Environmental precautions**

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3**Methods and materials for containment and cleaning up**

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4**Reference to other sections**

Reference to other sections : For personal protection see section 8. For disposal considerations see section 13.

SECTION 7: Handling and storage**7.1****Precautions for safe handling
Handling**

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

7.2**Conditions for safe storage, including any incompatibilities****Storage**

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Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection**8.1****Control parameters
Ingredients with workplace control parameters****SK**

Zložky	Podstata	Hodnota	Kontrolné parametre	Poznámka
n-Butyl Mercaptan	SK OEL	NPEL priemerný	0,5 ppm, 1,9 mg/m ³	
	SK OEL	NPEL krátkodobý	1 ppm, 3,8 mg/m ³	
Ethyl Mercaptan	SK OEL	NPEL priemerný	0,5 ppm, 1,3 mg/m ³	
	SK OEL	NPEL krátkodobý	1 ppm, 2,6 mg/m ³	

SI

Sestavine	Osnova	Vrednost	Parametri nadzora	Pripomba
n-Butyl Mercaptan	SI OEL	MV	0,5 ppm, 1,9 mg/m ³	
	SI OEL	KTV	1 ppm, 3,8 mg/m ³	
Ethyl Mercaptan	SI OEL	MV	0,5 ppm, 1,3 mg/m ³	
	SI OEL	KTV	1 ppm, 2,6 mg/m ³	

RO

Componente	Sursă	Valoare	Parametri de control	Notă
Ethyl Mercaptan	RO OEL	STEL	1 mg/m ³	

PT

Componentes	Bases	Valor	Parâmetros de controlo	Nota
n-Butyl Mercaptan	PT OEL	VLE-MP	0,5 ppm,	
Ethyl Mercaptan	PT OEL	VLE-MP	0,5 ppm,	

PL

Składniki	Podstawa	Wartość	Parametry dotyczące kontroli	Uwaga
n-Butyl Mercaptan	PL NDS	NDS	1 mg/m ³	
	PL NDS	NDSch	2 mg/m ³	
Ethyl Mercaptan	PL NDS	NDS	1 mg/m ³	
	PL NDS	NDSch	2 mg/m ³	

NO

Komponenter	Grunnlag	Verdi	Kontrollparametrer	Nota
n-Butyl Mercaptan	FOR-2011-12-06-1358	GV	0,5 ppm, 1,5 mg/m ³	
Ethyl Mercaptan	FOR-2011-12-06-1358	GV	0,5 ppm, 1 mg/m ³	

MK

Съставки	Основа	Стойност	Параметри на контрол	Бележка
n-Butyl Mercaptan	MK OEL	MV	0,5 ppm, 1,9 mg/m ³	
Ethyl Mercaptan	MK OEL	MV	0,5 ppm, 1,3 mg/m ³	

LV

Sastāvdaļas	Bāze	Vērtība	Pārvaldības parametri	Piezīme
Ethyl Mercaptan	LV OEL	AER 8 st	1 mg/m ³	

LT

Komponentai	Šaltinis	Vertė	Kontrolės parametrai	Pastaba
Ethyl Mercaptan	LT OEL	IPRD	1 mg/m ³	O,

O pateikimas per nepažeistą odą

IS

Komponenter	Grunnlag	Verdi	Kontrollparametrer	Nota
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n-Butyl Mercaptan	IS OEL	TWA	0,5 ppm, 1,5 mg/m3	
Ethyl Mercaptan	IS OEL	TWA	0,5 ppm, 1 mg/m3	

IE

Components	Basis	Value	Control parameters	Note
n-Butyl Mercaptan	IE OEL	OELV - 8 hrs (TWA)	0,5 ppm, 1,8 mg/m3	
Ethyl Mercaptan	IE OEL	OELV - 8 hrs (TWA)	0,5 ppm,	

HU

Komponensek	Bázis	Érték	Ellenőrzési paraméterek	Megjegyzés
Ethyl Mercaptan	HU OEL	AK-érték	1 mg/m3	N, i,
	HU OEL	CK-érték	2 mg/m3	N, i,

i Ingerlő anyag (izgatja a bőrt, nyálkahártyát, szemet vagy mindhámat)
N Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok. Korrekció NEM szükséges.

HR

Sastojci	Temelj	Vrijednost	Nadzorni parametri	Bilješka
n-Butyl Mercaptan	HR OEL	GVI	0,5 ppm, 1,5 mg/m3	IR-D,
Ethyl Mercaptan	HR OEL	GVI	0,5 ppm, 1,3 mg/m3	
	HR OEL	KGVI	2 ppm, 5,2 mg/m3	

IR-D iritacija dišnih organa

GR

Συστατικά	Βάση	Τιμή	Παράμετροι ελέγχου	Σημείωση
n-Butyl Mercaptan	GR OEL	TWA	0,5 ppm, 1,8 mg/m3	
Ethyl Mercaptan	GR OEL	TWA	10 ppm, 25 mg/m3	
	GR OEL	STEL	10 ppm, 25 mg/m3	

GB

Components	Basis	Value	Control parameters	Note
Ethyl Mercaptan	GB EH40	TWA	0,5 ppm, 1,3 mg/m3	
	GB EH40	STEL	2 ppm, 5,2 mg/m3	

FR

Composants	Base	Valeur	Paramètres de contrôle	Note
n-Butyl Mercaptan	FR VLE	VME	0,5 ppm, 1,5 mg/m3	Valeurs limites indicatives,
sec-butyl Mercaptan	FR VLE	VME	0,5 ppm, 1,5 mg/m3	Valeurs limites indicatives,
t-Butyl Mercaptan	FR VLE	VME	0,5 ppm, 1,5 mg/m3	Valeurs limites indicatives,
Ethyl Mercaptan	FR VLE	VME	0,5 ppm, 1 mg/m3	Valeurs limites indicatives,

Valeurs limites Valeurs limites indicatives
indicatives

FI

Aineosat	Peruste	Arvo	Valvontaa koskevat muuttujat	Huomautus
n-Butyl Mercaptan	FI OEL	HTP-arvot 8h	0,5 ppm, 1,9 mg/m3	
	FI OEL	HTP-arvot 15 min	1,5 ppm, 5,6 mg/m3	
Ethyl Mercaptan	FI OEL	HTP-arvot 15 min	0,5 ppm, 1,3 mg/m3	

ES

Componentes	Base	Valor	Parámetros de control	Nota
n-Butyl Mercaptan	ES VLA	VLA-ED	0,5 ppm, 1,9 mg/m3	
Ethyl Mercaptan	ES VLA	VLA-ED	0,5 ppm, 1,3 mg/m3	

EE

Komponendid, osad	Alused	Väärtus	Kontrolliparameetrid	Märkused
Ethyl Mercaptan	EE OEL	Piirnorm	0,5 ppm, 1 mg/m3	C,

C Kantserogeensed ained

DK

Komponenter	Basis	Værdi	Kontrolparametre	Note
n-Butyl Mercaptan	DK OEL	GV	0,5 ppm, 1,5 mg/m3	
Ethyl Mercaptan	DK OEL	GV	0,5 ppm, 1 mg/m3	

DE

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
n-Butyl Mercaptan	DE TRGS 900	AGW	0,5 ppm, 1,9 mg/m3	Y,
Ethyl Mercaptan	DE TRGS 900	AGW	0,5 ppm, 1,3 mg/m3	H,

H Hautresorptiv

Y Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW)

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nicht befürchtet zu werden

CZ

Složky	Základ	Hodnota	Kontrolní parametry	Poznámka
n-Butyl Mercaptan	CZ OEL	PEL	1,5 mg/m ³	
	CZ OEL	NPK-P	3 mg/m ³	

CH

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
n-Butyl Mercaptan	CH SUVA	MAK-Wert	0,5 ppm, 1,9 mg/m ³	NIOSH, SSc,
	CH SUVA	KZGW	1 ppm, 3,8 mg/m ³	NIOSH, SSc,
Ethyl Mercaptan	CH SUVA	MAK-Wert	0,5 ppm, 1,3 mg/m ³	
	CH SUVA	KZGW	1 ppm, 2,6 mg/m ³	

NIOSH National Institute for Occupational Safety and Health

SSc Eine Schädigung der Leibesfrucht braucht bei Einhaltung des MAK-Wertes nicht befürchtet zu werden.

BG

Съставки	Основа	Стойност	Параметри на контрол	Бележка
Ethyl Mercaptan	BG OEL	TWA	1 mg/m ³	

BE

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
n-Butyl Mercaptan	BE OEL	TGG 8 hr	0,5 ppm, 1,8 mg/m ³	
Ethyl Mercaptan	BE OEL	TGG 8 hr	0,5 ppm, 1,3 mg/m ³	

AT

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
n-Butyl Mercaptan	AT OEL	MAK-TMW	0,5 ppm, 1,9 mg/m ³	
	AT OEL	MAK-KZW	0,5 ppm, 1,9 mg/m ³	
Ethyl Mercaptan	AT OEL	MAK-KZW	0,5 ppm, 1,3 mg/m ³	
	AT OEL	MAK-TMW	0,5 ppm, 1,3 mg/m ³	

8.2**Exposure controls
Engineering measures**

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Organic Vapors. Full-Face Air-Purifying Respirator for Organic Vapors, Dusts and Mists. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time

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which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection	:	Eye wash bottle with pure water. Tightly fitting safety goggles.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Footwear protecting against chemicals.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**9.1****Information on basic physical and chemical properties****Appearance**

Form	:	liquid
Physical state	:	liquid
Color	:	Clear
Odor	:	Repulsive

Safety data

Flash point	:	3,3°C (37,9°F) Method: ASTM D - 1310
Lower explosion limit	:	1,4 %(V)
Upper explosion limit	:	11,3 %(V)
Oxidizing properties	:	No
Autoignition temperature	:	272°C (522°F) estimated
Molecular formula	:	C4H10S
Molecular weight	:	90,2 g/mol
pH	:	Not applicable
Freezing point	:	-115°C (-175°F)
Pour point	:	No data available
Boiling point/boiling range	:	96-110°C (205-230°F)
Vapor pressure	:	1,60 PSI at 38°C (100°F)

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Relative density : 0,842
at 15,6 °C (60,1 °F)

Density : 840 g/l

Water solubility : negligible

Partition coefficient: n-octanol/water : No data available

Viscosity, dynamic : 0,497 cP

Relative vapor density : 2
(Air = 1.0)

Evaporation rate : 1

Percent volatile : > 99 %

9.2**Other information**

Conductivity : No data available

SECTION 10: Stability and reactivity**10.1**

Reactivity : Stable under recommended storage conditions.

10.2

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3**Possibility of hazardous reactions**

Hazardous reactions : Hazardous reactions: Hazardous polymerization does not occur.

Hazardous reactions: Vapors may form explosive mixture with air.

10.4

Conditions to avoid : Heat, flames and sparks.

10.5

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.6

Hazardous decomposition products : Carbon oxides
Sulfur oxides

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Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**11.1****Information on toxicological effects****Acute oral toxicity**

n-Butyl Mercaptan : LD50: 1.500 mg/kg
Species: Rat

Acute inhalation toxicity

n-Butyl Mercaptan : LC50: 14,8 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: vapor

Acute dermal toxicity

n-Butyl Mercaptan : LD50: > 2.000 mg/kg
Species: Rabbit

Skin irritation

n-Butyl Mercaptan : No skin irritation
Information given is based on data obtained from similar substances.

Eye irritation

n-Butyl Mercaptan : slight irritation. Information given is based on data obtained from similar substances.

Sensitization

n-Butyl Mercaptan : The product is a skin sensitizer, sub-category 1B.

Repeated dose toxicity

n-Butyl Mercaptan : Species: Rat
Application Route: Inhalation
Dose: 0, 9, 70, 150 ppm
Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
NOEL: 9 ppm
Lowest observable effect level: 70 ppm

Genotoxicity in vitro

n-Butyl Mercaptan : Test Type: Ames test
Result: negative

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Test Type: Mouse lymphoma assay
Result: Ambiguous

Test Type: Sister Chromatid Exchange Assay
Result: negative

Developmental Toxicity

n-Butyl Mercaptan : Species: Rat
Application Route: Inhalation
Dose: 0, 10, 68, 152 ppm
Number of exposures: 6 h/d
Test period: GD 6-19
NOAEL Teratogenicity: > 152 ppm
NOAEL Maternal: > 152 ppm

Species: Mouse
Application Route: Inhalation
Dose: 0, 10, 68, 152 ppm
Number of exposures: 6 h/d
Test period: GD 6-16
NOAEL Maternal: 10 ppm

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Aspiration toxicity** : May be harmful if swallowed and enters airways.

11.2

Information on other hazards

**n - Butyl Mercaptan
Further information** : Solvents may degrease the skin.
Endocrine disrupting : The substance/mixture does not contain components
properties considered to have endocrine disrupting properties according
to REACH Article 57(f) or Commission Delegated regulation
(EU) 2017/2100 or Commission Regulation (EU) 2018/605 at
levels of 0.1% or higher.

SECTION 12: Ecological information

12.1

Toxicity**Toxicity to fish**

n-Butyl Mercaptan : LC50: 2,4 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Information given is based on data obtained from similar
substances.

Toxicity to daphnia and other aquatic invertebrates

n-Butyl Mercaptan : EC50: 0,020 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Immobilization Method: OECD Test Guideline 202

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Toxicity to algae

n-Butyl Mercaptan : EC50: 0,49 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (microalgae)
 Growth inhibition Method: OECD Test Guideline 201

M-Factor

butane-1-thiol : M-Factor (Acute Aquat. Tox.) 10
 M-Factor (Chron. Aquat. Tox.) 10

12.2**Persistence and degradability**

Biodegradability

n-Butyl Mercaptan : This material is not expected to be readily biodegradable.
 Information given is based on data obtained from similar substances.

12.3**Bioaccumulative potential**

Bioaccumulation

n-Butyl Mercaptan : Bioconcentration factor (BCF): 14,84
 Method: QSAR modeled data
 This material is not expected to bioaccumulate.

12.4**Mobility in soil**

Mobility

n-Butyl Mercaptan : Method: Calculation, Mackay Level III Fugacity Model
 The product will be dispersed amongst the various environmental compartments (soil/ water/ air).

12.5**Results of PBT and vPvB assessment**

Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6**Endocrine disrupting properties**

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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12.7**Other adverse effects**

Additional ecological information : Very toxic to aquatic life with long lasting effects.

12.8**Additional Information****Ecotoxicology Assessment**

Short-term (acute) aquatic hazard
n-Butyl Mercaptan : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
n-Butyl Mercaptan : Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations**13.1****Waste treatment methods**

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information**14.1 - 14.7****Transport information**

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

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IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN2347, BUTYL MERCAPTAN, 3, II, (3,3 °C c.c.), MARINE POLLUTANT, (N - BUTYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN2347, BUTYL MERCAPTAN, 3, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN2347, BUTYL MERCAPTAN, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (N - BUTYL MERCAPTAN)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

33, UN2347, BUTYL MERCAPTAN, 3, II, ENVIRONMENTALLY HAZARDOUS, (N - BUTYL MERCAPTAN)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN2347, BUTYL MERCAPTAN, 3, II, ENVIRONMENTALLY HAZARDOUS, (N - BUTYL MERCAPTAN)

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**15.1****Safety, health and environmental regulations/legislation specific for the substance or mixture
National legislation**

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

15.2**Chemical Safety Assessment**

Components : butane-1-thiol A Chemical Safety Assessment is 203-705-3 not required for this substance.

Major Accident Hazard Legislation : 96/82/EC Update: 2003
Dangerous for the environment
9a
Quantity 1: 100 t
Quantity 2: 200 t

: 96/82/EC Update: 2003
Highly flammable
7b
Quantity 1: 5.000 t
Quantity 2: 50.000 t

: ZEU_SEVES3 Update:

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FLAMMABLE LIQUIDS

P5c

Quantity 1: 5.000 t

Quantity 2: 50.000 t

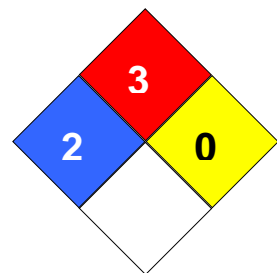
: ZEU_SEVES3 Update:
 ENVIRONMENTAL HAZARDS
 E1
 Quantity 1: 100 t
 Quantity 2: 200 t

Notification status

Europe REACH	:	This product is in full compliance according to REACH regulation 1907/2006/EC.
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	On or in compliance with the active portion of the TSCA inventory
Australia AIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
 Fire Hazard: 3
 Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 47670

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the

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specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.