n-Butyl Mercaptan

Version 1.6 Revision Date 2016-06-03

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

Product information

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

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

SDS Requests: (800) 852-5530
Technical Information: (832) 813-4862
Responsible Party: Product Safety Group
Email:sds@cpchem.com

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: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

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

SECTION 2: Hazards identification

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.
Skin sensitization, Sub-category 1B	H317: May cause an allergic skin reaction.
Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1	H410: Very toxic to aquatic life with long lasting effects.

Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : Danger

Hazard Statements		
:	H225	Highly flammable liquid and vapor.
	H302	Harmful if swallowed.
	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/sparks/open flames/hot surfaces. No smoking.
	P233	Keep container tightly closed.
	P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
	P272	Contaminated work clothing must not be allowed out of the workplace.
	P273	Avoid release to the environment.
	P280	Wear protective gloves.
	Response:	
	P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P331	Do NOT induce vomiting.
	P321	Specific treatment (see supplemental first aid instructions on this label).
	P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
	P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Hazardous ingredients which must be listed on the label:
- 109-79-5 n-Butyl Mercaptan

Additional Labeling:

EUH208 Contains: t-Butyl Mercaptan,

t-Amyl Mercaptan.
May produce an allergic reaction.

SECTION 3: Composition/information on ingredients

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

Molecular formula : C4H10S

Mixtures

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]
n-Butyl Mercaptan	**109-79-5** **203-705-3**	Flam. Liq. 2; H225 Acute Tox. 4; H302 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
sec-butyl Mercaptan	513-53-1 208-165-2	Flam. Liq. 2; H225 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	0 - 1,5
t-Butyl Mercaptan	75-66-1 200-890-2	Flam. Liq. 2; H225 Aquatic Acute 2; H401 Skin Sens. 1; H317 Aquatic Chronic 2; H411	0 - 1
t-Amyl Mercaptan	1679-09-0 216-843-4	Flam. Liq. 2; H225 Skin Sens. 1; H317	0 - 0,1

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

SECTION 4: 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 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. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point	:	3,3 °C (37,9 °F) Method: ASTM D - 1310
Autoignition temperature	:	272 °C (522 °F) estimated
Suitable extinguishing media	:	Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
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 an open flame or any other 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.

SECTION 6: Accidental release measures

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.
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.

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).

SECTION 7: Handling and storage

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 an open flame or any other 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.

Storage

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

Ingredients with workplace control parameters

Chevron Phillips Chemical Company LP

Ingredients	Basis	Value	Control parameters	Note
t-Butyl Mercaptan	Manufacturer	TWA	0,5 ppm,	

SK

Zložka	Podstata	Hodnota	Kontrolné parametre	Poznámka
n-Butyl Mercaptan	SK OEL	NPEL priemerný	0,5 ppm, 1,9 mg/m3	
	SK OEL	NPEL krátkodobý	1 ppm, 3,8 mg/m3	

SI

Sestavine	Osnova	Vrednost	Parametri nadzora	Pripomba
n-Butyl Mercaptan	SI OEL	MV	0,5 ppm, 1,9 mg/m3	Y,

Y Snovi, pri katerih ni nevarnosti za zarodek ob upoštevanju mejnih vrednosti in BAT vrednosti.

PT

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

irritação do TRS irritação do trato respiratório superior

PL

Składniki	Podstawa	Wartość	Parametry dotyczące kontroli	Uwaga
n-Butyl Mercaptan	PL NDS	NDS	1 mg/m3	
	PL NDS	NDSch	2 mg/m3	

NO

Komponenter	Grunnlag	Verdi	Kontrollparametere	Nota
n-Butyl Mercaptan	FOR-2011-12-06-1358	TWA	0,5 ppm, 1,5 mg/m3	

IE

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

GR

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

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	

ES

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

DK

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

DE

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

DFG Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission)
Y Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden

CZ

Složky	Základ	Hodnota	Kontrolní parametry	Poznámka
n-Butyl Mercaptan	CZ OEL	PEL	1,5 mg/m3	
	CZ OEL	NPK-P	3 mg/m3	

CH

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
n-Butyl Mercaptan	CH SUVA	MAK-Wert	0,5 ppm, 1,9 mg/m3	NIOSH, SSc,
	CH SUVA	KZGW	1 ppm, 3,8 mg/m3	NIOSH, SSc,

NIOSH National Institute for Occupational Safety and Health
SSc Eine Schädigung der Leibesfrucht braucht bei Einhaltung des MAK-Wertes nicht befürchtet zu werden.

BE

Bestanddelen	Basis	Waarde	Controleparameters	Opmerking
n-Butyl Mercaptan	BE OEL	TGG 8 hr	0,5 ppm, 1,8 mg/m3	

AT

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
n-Butyl Mercaptan	AT OEL	TMW	0,5 ppm, 1,9 mg/m3	
	AT OEL	KZW	0,5 ppm, 1,9 mg/m3	

Engineering measures

Adequate ventilation to control airborned 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	:	Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, 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 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 according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
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

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)
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 %

SECTION 10: Stability and reactivity

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

Possibility of hazardous reactions

Conditions to avoid	:	Heat, flames and sparks.
Materials to avoid	:	May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous decomposition products	:	Carbon oxides Sulfur oxides

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

SECTION 11: Toxicological information

n-Butyl Mercaptan
Acute oral toxicity : Acute toxicity estimate: 1.523 mg/kg
Method: Calculation method

n-Butyl Mercaptan
Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity

sec-butyl Mercaptan : LD50: >2000 milligram per kilogram
Species: Rat

n-Butyl Mercaptan
Skin irritation : May cause skin irritation and/or dermatitis.

n-Butyl Mercaptan
Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.

n-Butyl Mercaptan
Sensitization : Causes sensitization.

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

sec-butyl Mercaptan Species: Rat, male and female
Sex: male and female
Application Route: Inhalation
Exposure time: 13 wks
Number of exposures: 6 hrs/d, 5 d/wk
NOEL: 0,367 mg/l 99.6 ppm
Lowest observable effect level: 1,488 mg/l 403.4 ppm
Method: OECD Guideline 413
Target Organs: Blood, Liver, Kidney, Upper respiratory tract

t-Butyl Mercaptan Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 9, 97, 196 ppm
Exposure time: 13 wks
Number of exposures: 6 hrs/d, 5 d/wk
NOEL: > 196 ppm

Species: Rat, Male and female
Sex: Male and female
Application Route: oral gavage
Dose: 10, 50, 200 mg/kg bw/day
Exposure time: 42-53 days
Number of exposures: Daily
NOEL: 50 mg/kg bw/day
Lowest observable effect level: 200 mg/kg bw/day
Method: OECD Guideline 422

Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 25.1, 99.6, 403.4 ppm
Exposure time: 13 wks
Number of exposures: 6 hrs/d, 5 d/wk
NOEL: 99.6 ppm
Lowest observable effect level: 403.4 ppm
Method: OECD Guideline 413
Target Organs: Liver, Kidney, Blood, Upper respiratory tract
Information given is based on data obtained from similar substances.

Reproductive toxicity

sec-butyl Mercaptan : Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 10, 50, 200 mg/kg bw/d
Number of exposures: Daily
Test period: 42-50 days
Method: OECD Guideline 422
NOAEL Parent: 200 mg/kg
NOAEL F1: 50 mg/kg
Information given is based on data obtained from similar substances.

t-Butyl Mercaptan Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 10, 50, 200 mg/kg bw/day
Number of exposures: Daily
Test period: 42 -53 days
Method: OECD Guideline 422
NOAEL Parent: 200 mg/kg bw/day
NOAEL F1: 50 mg/kg bw/day
No adverse effects expected

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
sec-butyl Mercaptan	Species: Rat Application Route: Inhalation Dose: 11, 99, 195 ppm Exposure time: GD 6-16 Number of exposures: 6 hrs/d Method: OECD Guideline 414 NOAEL Teratogenicity: > = 195 ppm NOAEL Maternal: > = 195 ppm Information given is based on data obtained from similar substances. Species: Mouse Application Route: Inhalation Dose: 11, 99, 195 ppm Exposure time: GD 6-16 Number of exposures: 6 hrs/d Method: OECD Guideline 414 NOAEL Teratogenicity: > = 195 ppm NOAEL Maternal: > = 195 ppm Information given is based on data obtained from similar substances.
t-Butyl Mercaptan	Species: Mouse Application Route: Inhalation Dose: 11, 99, 195 ppm Exposure time: GD 6-16 Number of exposures: 6 hrs/d NOAEL Teratogenicity: > = 195 ppm NOAEL Maternal: > = 195 ppm Species: Rat Application Route: Inhalation Dose: 11, 99, 195 ppm Exposure time: GD6-19 Number of exposures: 6 hrs/d NOAEL Teratogenicity: > =195 ppm NOAEL Maternal: > = 195 ppm Species: Rat Application Route: oral gavage Dose: 10, 50, 200 mg/kg bw/day Exposure time: 42-53 days Number of exposures: Daily NOAEL Teratogenicity: 50 mg/kg bw /day NOAEL Maternal: 200 mg/kg bw /day

n-Butyl Mercaptan

Aspiration toxicity : May be fatal if swallowed and enters airways.
Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

CMR effects

t-Butyl Mercaptan : Carcinogenicity: Not available
Mutagenicity: Did not show mutagenic effects in animal experiments.
Teratogenicity: Did not show teratogenic effects in animal experiments.
Reproductive toxicity: No toxicity to reproduction

n-Butyl Mercaptan
Further information : Solvents may degrease the skin.

SECTION 12: Ecological information

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.

sec-butyl Mercaptan LC50: 8,5 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
static test Analytical monitoring: yes
Method: OECD Test Guideline 203

t-Butyl Mercaptan LC50: 34 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
semi-static test Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

n-Butyl Mercaptan : EC50: 0,38 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Information given is based on data obtained from similar substances.

sec-butyl Mercaptan 0,56 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Immobilization Method: OECD Test Guideline 202
Information refers to the main ingredient.

t-Butyl Mercaptan EC50: 6,7 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202

Toxicity to algae

n-Butyl Mercaptan : EC50: 3,0 mg/l
Exposure time: 96 h

		Species: Selenastrum capricornutum (algae) Information given is based on data obtained from similar substances.
sec-butyl Mercaptan		EC50: 3,4 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Growth inhibition Method: OECD Test Guideline 201
t-Butyl Mercaptan		EC50: 24 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Method: OECD Test Guideline 201
butane-2-thiol	:	1

Elimination information (persistence and degradability)

Bioaccumulation

t-Butyl Mercaptan	:	Bioconcentration factor (BCF): 12 Bioaccumulation is unlikely.
Biodegradability	:	Expected to be biodegradable

Ecotoxicology Assessment

Acute aquatic toxicity

n-Butyl Mercaptan	:	Very toxic to aquatic life.
sec-butyl Mercaptan	:	Very toxic to aquatic life.
t-Butyl Mercaptan	:	Toxic to aquatic life.

Chronic aquatic toxicity

n-Butyl Mercaptan	:	Very toxic to aquatic life with long lasting effects.
sec-butyl Mercaptan	:	Very toxic to aquatic life with long lasting effects.
t-Butyl Mercaptan	:	Toxic to aquatic life with long lasting effects.

Results of PBT assessment

t-Butyl Mercaptan	:	Non-classified PBT substance, Non-classified vPvB substance
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

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

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)
UN2347, BUTYL MERCAPTANS, 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN2347, BUTYL MERCAPTANS, 3, II, (3,3 °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))
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)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

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

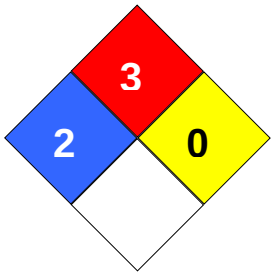
: 96/82/EC Update: 2003
Highly flammable
7b
Quantity 1: 5.000 t
Quantity 2: 50.000 t

Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
United States of America TSCA	:	On the inventory, or in compliance with the inventory
Canada DSL	:	On the inventory, or in compliance with the inventory
Australia AICS	:	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	:	On the inventory, or in compliance with the inventory
Philippines PICCS	:	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 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%
AICS	Australia, Inventory of Chemical Substances	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%		

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.
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.