



n-Butyl Mercaptan

Version 1.12

Revision Date 2022-10-12

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

Product information

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

Use : Chemical intermediate

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

Local : See Company Address

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)

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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**Classification of the substance or mixture****GHS Classification and labelling according to JIS Z 7252-2019 and JIS Z 7253-2019 (GHS 2015)****Classification**

: Flammable liquids, Category 2
 Acute toxicity, Category 4, Oral
 Acute toxicity, Category 4, Inhalation
 Serious eye damage/eye irritation, Category 2A
 Skin sensitization, Category 1
 Specific target organ toxicity - single exposure, Category 1, Central nervous system
 Specific target organ toxicity - single exposure, Category 3, Respiratory tract irritation, Narcotic effects
 Short-term (acute) aquatic hazard, Category 3
 Long-term (chronic) aquatic hazard, Category 3

Labeling

Symbol(s)



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.
 H319: Causes serious eye irritation.
 H335: May cause respiratory irritation.
 H336: May cause drowsiness or dizziness.
 H370: Causes damage to organs (Central nervous system).

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H412: Harmful 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.
 P240: Ground and bond container and receiving equipment.
 P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242: Use non-sparking tools.
 P243: Take action to prevent static discharges.
 P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
 P264: Wash skin thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
 P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.
 P308 + P311: IF exposed or concerned: Call a POISON CENTER/ doctor.
 P333 + P313: If skin irritation or rash occurs: Get medical advice/ attention.
 P337 + P313: If eye irritation persists: Get medical advice/ attention.
 P362 + P364: Take off contaminated clothing and wash it before reuse.
 P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235: Store in a well-ventilated place. Keep cool.

Disposal:

P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

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

Molecular formula : C₄H₁₀S

Chemical name	CAS-No.	Concentration	ENCS/ISHL number
n-Butyl Mercaptan	109-79-5	98.5 % - 100%	2-464

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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. If symptoms persist, call a physician. 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 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 : Carbon oxides. Sulfur oxides.

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products

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 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.

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.
- Use : Chemical intermediate

SECTION 8: Exposure controls/personal protection**Engineering measures**

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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 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**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

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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

Reactivity : Stable under recommended storage conditions.

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

Possibility of hazardous reactions

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Hazardous reactions	: Hazardous reactions: Hazardous polymerization does not occur. Hazardous reactions: Vapors may form explosive mixture with air.
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**Acute oral toxicity**

n-Butyl Mercaptan : LD50: 1,500 mg/kg
Species: Rat

Acute inhalation toxicity

n-Butyl Mercaptan : LC50: 22.3 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: vapor

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

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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

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

**n-Butyl Mercaptan
 Aspiration toxicity** : May be harmful if swallowed and enters airways.

**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.

Toxicity to daphnia and other aquatic invertebrates

n-Butyl Mercaptan : EC50: 0.020 mg/l

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Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 Immobilization Method: OECD Test Guideline 202

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

Biodegradability

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

Bioaccumulation

n-Butyl Mercaptan : Bioconcentration factor (BCF): 14.84
 Method: QSAR modeled data
 This material is not expected to bioaccumulate.

Mobility

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

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

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

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

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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 MERCAPTAN, 3, II

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)

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Maritime transport in bulk according to IMO instruments**SECTION 15: Regulatory information****National legislation****Poisonous and Deleterious Substances Control Law**

: Not applicable

Industrial Safety and Health LawSubstances Subject to be
Notified Names Article 57-2
(Enforcement Order Table 9)

: butane-1-thiol(483)

Enforcement Order of the
Industrial Safety and Health
Law - Attached table 1
(Dangerous Substances)

: Inflammable Substance

Enforcement Order of the
Industrial Safety and Health
Law - Attached table 1
(Dangerous Substances)

: Inflammable Substance

Harmful Substances Required
Permission for Manufacture
Hazardous Substances
Subject to Labeling
Requirements Article 57
(Enforcement Order Article
18)

: Not applicable

Ordinance on Prevention of
Organic Solvent Poisoning
Ordinance on Prevention of
Lead Poisoning

: Not applicable

: Not applicable

Harmful Substances
Prohibited from Manufacture
Ordinance on Prevention of
Hazards Due to Specified
Chemical Substances

: Not applicable

: Not applicable

Ordinance on Prevention of
Tetraalkyl Lead Poisoning

: Not applicable

: Not applicable

: Not applicable

Substances Prevented From
Impairment of Health: Not applicable
Listed**Chemical Substance Control Law**: Not applicable for Specified Chemical Substance, Monitoring
Chemical Substance and Priority Assessment Chemical
Substance.

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Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

: Not applicable

Other regulations

Fire Service Law : Flammable liquids
Type 1 petroleums
Hazardous rank II

High Pressure Gas Safety Act : Not applicable

Explosive Control Law : Not applicable

Vessel Safety Law : Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law : Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

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

Other AIIC : 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**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.

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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%		