

Version 1.1 Revision Date 2012-06-22

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

Product information

Trade name : Scentinel® S-50 Gas Odorant

Material : 1030665, 1030209, 1024712, 1105020

Company : Specialty Chemicals

10001 Six Pines Drive The Woodlands, TX 77380

Emergency telephone:

Health:

866.442.9628 (North America) 1.832.813.4984 (International)

Transport:

North America: CHEMTREC 800.424.9300 or 703.527.3887 Asia: +800 CHEMCALL (+800 2436 2255) China: 0532.8388.9090 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Chemcare Asia: Tel: +65 6848 9048 - Mob: +65 8382 9188 - Fax: +65 6848

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 : MSDS@CPChem.com Website : www.CPChem.com

SECTION 2: Hazards identification

Emergency Overview

Danger

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

OSHA Hazards : Flammable Liquid, Skin sensitizer, Moderate eye irritant

GHS Classification

: Flammable liquids, Category 2 Skin sensitization, Category 1 Aspiration hazard, Category 2 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 2

GHS-Labeling

Symbol(s) :









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Signal Word : Danger

Hazard Statements : H225: Highly flammable liquid and vapor.

H303: May be harmful if swallowed.

H305: May be harmful if swallowed and enters airways.

H317: May cause an allergic skin reaction.

H411: 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.

P240: Ground/bond container and receiving equipment.P241: Use explosion-proof electrical/ ventilating/ lighting/

equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge. P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P273: Avoid release to the environment.

P280: Wear protective gloves/ protective clothing/ eye

protection/ face protection.

Response:

P301 + P310: IF SWALLOWED: Immediately call a POISON

CENTER or doctor/ physician. P331: Do NOT induce vomiting.

P333 + P313: If skin irritation or rash occurs: Get medical

advice/ attention.

P363: Wash contaminated clothing before reuse.

P370 + P378: In case of fire: Use dry sand, dry chemical or

alcohol-resistant foam for extinction.

P391: Collect spillage.

Storage:

P403 + P235: Store in a well-ventilated place. Keep cool.

Disposal:

P501: Dispose of contents/ container to an approved waste

disposal plant.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or

equal to 0.1% is identified as probable, possible or confirmed

human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

ACGIH No ingredient of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential carcinogen

by ACGIH.

SECTION 3: Composition/information on ingredients

Synonyms : Mercaptan Mixture

Gas Odorant

Molecular formula : Mixture

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| Component | CAS-No. | Weight % |
|----------------------|----------|----------|
| Methyl Ethyl Sulfide | 624-89-5 | 50 |
| t-Butyl Mercaptan | 75-66-1 | 50 |

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 : $< 18 \,^{\circ}\text{C} (< 64 \,^{\circ}\text{F})$

estimated

Autoignition temperature : No data available

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 fire fighting 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). Us

discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames,

hot surfaces and sources of ignition.

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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.

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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, | |
| | | | | |

| US | | | | |
|-------------|-------|-------|--------------------|------|
| Ingredients | Basis | Value | Control parameters | Note |

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 NIOSH approved respirator that provides protection

> when working with this material if exposure to harmful levels of airborne material may occur, such as:. 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. 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.

Choose body protection according to the amount and Skin and body protection

concentration of the dangerous substance at the work place. Wear as appropriate:. Flame retardant antistatic protective clothing. Workers should wear antistatic footwear. Remove and wash contaminated clothing before re-use. Skin should be

washed after contact.

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**

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

Safety data

Flash point : $< 18 \, ^{\circ}\text{C} (< 64 \, ^{\circ}\text{F})$

estimated

Lower explosion limit : No data available

Upper explosion limit : No data available

Oxidizing properties : no

Autoignition temperature : No data available

Molecular formula : Mixture

Molecular Weight : Not applicable

pH : Not applicable

Pour point : No data available

Freezing point < -45 °C (< -49 °F)

Melting point/range No data available

Boiling point/boiling range : 63 - 65.5 °C (145 - 149.9 °F)

Vapor pressure : 5.50 PSI

at 38 °C (100 °F)

Relative density : 0.825, 15.6 °C(60.1 °F)

Density : 6.87 L/G

at 15.6 °C (60.1 °F)

Water solubility : Partly soluble

Partition coefficient: n-

octanol/water

: No data available

Viscosity, kinematic : No data available

Relative vapor density : 2

(Air = 1.0)

Evaporation rate : 1

Percent volatile : > 99 %

SECTION 10: Stability and reactivity

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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.

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

SECTION 11: Toxicological information

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Acute oral toxicity : LD50: > 5,000 mg/kg

Species: rat

Method: Acute toxicity estimate

Acute inhalation toxicity

Methyl Ethyl Sulfide : LC50: > 21.7 mg/l

Species: rat

Test atmosphere: vapor

Method: OECD Test Guideline 403

t-Butyl Mercaptan LC50: 26643 ppm

Exposure time: 4 h

Species: rat

Sex: male and female Test atmosphere: vapor

Method: OECD Test Guideline 403

LC50: 22200 ppm Exposure time: 4 h Species: rat Sex: male

Test atmosphere: vapor

Method: OECD Test Guideline 403

LC50: 16500 ppm Exposure time: 4 h Species: mouse

Sex: male

Test atmosphere: vapor

Method: OECD Test Guideline 403

Acute dermal toxicity

Methyl Ethyl Sulfide : LD50: > 2,000 mg/kg

Species: rabbit

Method: OECD Test Guideline 402

t-Butyl Mercaptan LD50: > 2,000 mg/kg

Species: rabbit

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Skin irritation : May cause skin irritation and/or dermatitis.

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Eye irritation : Irritating to eyes.

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Sensitization : Causes sensitization.

Repeated dose toxicity

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

Reproductive toxicity

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

Teratogenicity

t-Butyl Mercaptan : Species: mouse

Application Route: Inhalation Dose: 11, 99, 195 ppm Exposure time: GD 6-16 Number of exposures: 6 hrs/d

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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: 200 mg/kg bw /day

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

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

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Further information : Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish

Methyl Ethyl Sulfide : LC50: > 49.8 mg/l

Exposure time: 96 h

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

Methyl Ethyl Sulfide : EC50: 16 mg/l

Exposure time: 48 h Species: Daphnia

Method: OECD Test Guideline 202

t-Butyl Mercaptan EC50: 6.7 mg/l

Exposure time: 48 h

Species: Daphnia magna (Water flea)

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static test Method: OECD Test Guideline 202

Toxicity to algae

Methyl Ethyl Sulfide : ErC50: > 500 mg/l

Exposure time: 72 h

Species: Pseudokirchneriella subcapitata (green algae)

Method: OECD Test Guideline 201

NOEC: 76 mg/l Exposure time: 72 h

Species: Pseudokirchneriella subcapitata (green algae)

Method: OECD Test Guideline 201

EbC50: 310 mg/l Exposure time: 72 h

Species: Pseudokirchneriella subcapitata (green algae)

Method: OECD Test Guideline 201

NOEC: < 76 mg/l Exposure time: 72 h

Species: Pseudokirchneriella subcapitata (green algae)

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

Bioaccumulation

Methyl Ethyl Sulfide : Accumulation in aquatic organisms is unlikely.

t-Butyl Mercaptan : Bioconcentration factor (BCF): 12

Bioaccumulation is unlikely.

Biodegradability

Methyl Ethyl Sulfide : Result: Not readily biodegradable.

34 %

Testing period: 28 d

Method: OECD Test Guideline 301D

t-Butyl Mercaptan : aerobic

Result: Not readily biodegradable.

6 %

Testing period: 63 d

Method: OECD Test Guideline 301

Results of PBT assessment

t-Butyl Mercaptan : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological

information

: Toxic to aquatic life with long lasting effects.

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SECTION 13: Disposal considerations

The information in this MSDS 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 MSDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, METHYL ETHYL SULFIDE), 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, METHYL ETHYL SULFIDE), 3, II, (< 18 °C), MARINE POLLUTANT, (TERTIARY BUTYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, METHYL ETHYL SULFIDE), 3, II

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

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, METHYL ETHYL SULFIDE), 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (TERTIARY BUTYL MERCAPTAN)

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

UN3336, MERCAPTÀNS, LIQUÍD, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN), 3, II, ENVIRONMENTALLY HAZARDOUS, (TERTIARY BUTYL MERCAPTAN)

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

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, METHYL ETHYL SULFIDE), 3, II, ENVIRONMENTALLY HAZARDOUS, (TERTIARY BUTYL MERCAPTAN)

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

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Fire Hazard

Acute Health Hazard

CERCLA Reportable

Quantity

: This material does not contain any components with a CERCLA

RQ.

SARA 302 Reportable

Quantity

: This material does not contain any components with a SARA

302 RQ.

SARA 302 Threshold

Planning Quantity

: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable

Quantity

: This material does not contain any components with a section

304 EHS RQ.

SARA 313 Ingredients : SARA 313: This material does not contain any chemical

components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA

Title III, Section 313.

Clean Air Act

Ozone-Depletion

Potential

: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR

82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know

: t-Butyl Mercaptan 75-66-1

New Jersey Right To Know

: t-Butyl Mercaptan 75-66-1

California Prop. 65

Ingredients

: This product does not contain any chemicals known to the State

of California to cause cancer, birth, or any other reproductive

defects.

Notification status

Europe REACH : On the inventory, or in compliance with the inventory

United States of America US.TSCA : On TSCA Inventory

Canada DSL : All components of this product are on the Canadian

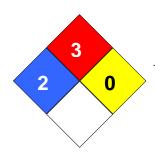
DSL list.

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 MSDS Number : 34780

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

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

The information provided in this Material 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

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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 | Philipines 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 Compositon, Complex Reaction Products, and Biological Materials | |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System | |
| LC50 | Lethal Concentration 50% | | | |

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