# Scentinel® TB Gas Odorant

Version 2.0 Revision Date 2018-12-04

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

**Product information**

| | | |
|---|---|---|
| Product Name | : | Scentinel® TB Gas Odorant |
| Material | : | 1119678, 1086437, 1086436, 1103087, 1103086, 1103855, 1024798, 1024799 |
| Use | : | Odorant |
| **Company** | : | Chevron Phillips Chemical Company LP<br>Specialty Chemicals<br>10001 Six Pines Drive<br>The Woodlands, TX 77380 |

**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
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
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

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

ODOR-FADE WARNING

A GAS LEAK CAN CAUSE A FIRE OR EXPLOSION RESULTING IN SERIOUS INJURY OR DEATH.

Be aware that the stenching chemical added to gas to make it detectable may not warn of a gas leak or the presence of propane or natural gas to all persons in every instance.

Instances where the odorant in an odorized gas may be undetectable include:

• Odor intensity may fade or be eliminated for a variety of chemical and physical causes, including the oxidation of rusting pipes, adsorption into or sticking onto the interior of pipes or appliances, or absorption into liquids.
• Contact with soil in underground leaks may de-odorize or remove odorant from the gas.

• Some people have a diminished ability, or inability to smell the stench. Factors that negatively affect a person's sense of smell include age, gender, medical conditions, and alcohol/tobacco usage.
• The stench of odorized gas may not awaken sleeping persons.
• Other odors may mask or hide the stench.
• Exposure to the odor for even a short period of time, may cause nasal fatigue, where a person can no longer smell the stench.

Gas detectors listed by the Underwriters Laboratories (UL) can be used as an extra measure of safety for detecting gas leaks, especially under conditions where the odorant alone may not provide an adequate warning. Gas detectors emit a loud, shrill sound when gas is present and do not depend on sense of smell. Because the odor intensity can fade or people may have problems with their sense of smell, we recommend installing, per manufacturer's instructions, one or more combustible gas detectors, in suitable locations to ensure adequate coverage to detect gas leaks.

Educate yourself, your employees, and your customers with the content of this warning and other important facts associated with the so-called "odor-fade phenomenon."

## SECTION 2: Hazards identification

**Classification of the substance or mixture**
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

**Classification**

: Flammable liquids, Category 2
Acute toxicity, Category 4, Inhalation
Acute toxicity, Category 4, Dermal
Skin irritation, Category 2
Eye irritation, Category 2A
Skin sensitization, Category 1

**Labeling**

Symbol(s) :

Signal Word : Danger

Hazard Statements : H225: Highly flammable liquid and vapor.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.

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.

P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
**Response:**
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
**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 : Scentinel® T-70 Gas Odorant

Molecular formula : Mixture

| Component | CAS-No. | Weight % |
|---|---|---|
| Tetrahydrothiophene | 110-01-0 | 70 |
| t-Butyl Mercaptan | 75-66-1 | 30 |

## SECTION 4: First aid measures

General advice : Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.

| | | |
|---|---|---|
| If inhaled | : | Call a physician or poison control center immediately. Move to fresh air. If unconscious, place in recovery position and seek medical advice. |
| In case of skin contact | : | If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes. |
| In case of eye contact | : | Immediately flush eye(s) with plenty of water. 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. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Take victim immediately to hospital. |

## SECTION 5: Firefighting measures

| | | |
|---|---|---|
| Flash point | : | < -17.8 °C (< -0.0 °F)<br>Method: Tagliabue Open Cup |
| Autoignition temperature | : | No data available |
| Suitable extinguishing media | : | Dry chemical. Carbon dioxide (CO2). Alcohol-resistant foam. |
| 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. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). 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. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

### Storage

Requirements for storage areas and containers : Prevent unauthorized access. 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 : Odorant

## SECTION 8: Exposure controls/personal protection

**Chevron Phillips Chemical Company LP**

| Components | Basis | Value | Control parameters | Note |
|---|---|---|---|---|
| t-Butyl Mercaptan | Manufacturer | TWA | 0.5 ppm, | |

### 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. Wear face-shield and protective suit for abnormal processing problems. |
| Skin and body protection | : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Protective suit. Safety shoes. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product. |

## SECTION 9: Physical and chemical properties

**Information on basic physical and chemical properties**

**Appearance**

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Color | : | Colorless |
| Odor | : | Pungent |

**Safety data**

| | | |
|---|---|---|
| Flash point | : | < -17.8 °C (< -0.0 °F)<br>Method: Tagliabue Open Cup |
| Lower explosion limit | : | No data available |
| Upper explosion limit | : | No data available |

| | | |
|---|---|---|
| Oxidizing properties | : | no |
| Autoignition temperature | : | No data available |
| Thermal decomposition | : | No data available |
| Molecular formula | : | Mixture |
| Molecular weight | : | Not applicable |
| pH | : | Not applicable |
| Freezing point | : | No data available |
| Pour point | | No data available |
| Boiling point/boiling range | : | 85 °C (185 °F) |
| Vapor pressure | : | 20.00 mbar<br>at 20 °C (68 °F)<br><br>3.60 PSI<br>at 50 °C (122 °F) |
| Relative density | : | 0.94<br>at 15.6 °C (60.1 °F) |
| Water solubility | : | Insoluble |
| Partition coefficient: n-octanol/water | : | No data available |
| Viscosity, kinematic | : | No data available |
| Relative vapor density | : | 3.04<br>(Air = 1.0) |
| Evaporation rate | : | No data available |
| 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**

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

Further information: No decomposition if stored and applied as directed.

Hazardous reactions: Vapors may form explosive mixture with air.

**Conditions to avoid** : No data available.

**Thermal decomposition** : No data available

**Hazardous decomposition products** : Carbon oxides
Sulfur oxides

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

## SECTION 11: Toxicological information

**Scentinel® TB Gas Odorant**
**Acute oral toxicity** : Acute toxicity estimate: 2,600 mg/kg
Method: Calculation method

Acute toxicity estimate: 2,263 mg/kg
Method: Calculation method

**Scentinel® TB Gas Odorant**
**Acute inhalation toxicity** : Acute toxicity estimate: 15 mg/l
Test atmosphere: vapor
Method: Calculation method

Acute toxicity estimate: 32.29 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

**Scentinel® TB Gas Odorant**
**Acute dermal toxicity** : Acute toxicity estimate: 1,500 mg/kg
Method: Calculation method

**Scentinel® TB Gas Odorant**
**Skin irritation** : May cause skin irritation and/or dermatitis.

**Scentinel® TB Gas Odorant**
**Eye irritation** : May cause irreversible eye damage.

**Scentinel® TB Gas Odorant**
**Sensitization** : Causes sensitization.

**Repeated dose toxicity**

Tetrahydrothiophene : Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 0, 51, 236, 1442 ppm

Exposure time: 13 wk
Number of exposures: 6 h/d, 5 d/wk
NOEL: 51 ppm
Method: OECD Guideline 413
Target Organs: 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.

**Genotoxicity in vitro**

Tetrahydrothiophene : Test Type: Ames test
Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Result: negative

Test Type: Cytogenetic assay
Result: negative

Test Type: HGPRT assay
Result: negative

Test Type: Sister Chromatid Exchange Assay
Method: OECD Guideline 473
Result: negative

Test Type: Unscheduled DNA synthesis assay
Result: negative

t-Butyl Mercaptan

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation

Result: negative

Test Type: Sister Chromatid Exchange Assay
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

**Genotoxicity in vivo**

t-Butyl Mercaptan : Test Type: Mouse micronucleus assay
Species: Mouse
Dose: 1250, 2500, 5000 mg/kg
Method: Mutagenicity (micronucleus test)
Result: negative

**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

**Developmental Toxicity**

Tetrahydrothiophene : Species: Rat
Application Route: Inhalation
Dose: 234, 782, 1910 ppm
Method: OECD Guideline 414
NOAEL Teratogenicity: 1910 ppm
NOAEL Maternal: 234 ppm
No adverse effects expected

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

**Scentinel® TB Gas Odorant**
**Aspiration toxicity** : May be harmful 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**

Tetrahydrothiophene : Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: Animal testing did not show any effects on fertility.

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

**Scentinel® TB Gas Odorant**
**Further information** : Solvents may degrease the skin.

## SECTION 12: Ecological information

**Toxicity to fish**

Tetrahydrothiophene : LC50: > 24 mg/l
Exposure time: 96 h
Species: Danio rerio (Zebra Fish)
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**

| | | |
|---|---|---|
| Tetrahydrothiophene | : | EC50: 24 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>Method: OECD Test Guideline 202 |
| t-Butyl Mercaptan | | EC50: 6.7 mg/l<br>Exposure time: 48 h<br>Species: Daphnia magna (Water flea)<br>static test Method: OECD Test Guideline 202 |

**Toxicity to algae**

| | | |
|---|---|---|
| Tetrahydrothiophene | : | EC50: > 153.2 mg/l<br>Exposure time: 72 h<br>Species: Pseudokirchneriella subcapitata (green algae)<br>Method: OECD Test Guideline 201 |
| t-Butyl Mercaptan | | EC50: 24 mg/l<br>Exposure time: 72 h<br>Species: Pseudokirchneriella subcapitata (green algae)<br>Method: OECD Test Guideline 201 |

**Toxicity to bacteria**

| | | |
|---|---|---|
| Tetrahydrothiophene | : | EC50: 1,530 mg/l<br>Exposure time: 3 h<br>Respiration inhibition<br>Method: OECD Test Guideline 209 |

Biodegradability : This material is not expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation

| | | |
|---|---|---|
| Tetrahydrothiophene | : | Bioaccumulation is unlikely. |
| t-Butyl Mercaptan | : | Bioconcentration factor (BCF): 12<br>Bioaccumulation is unlikely. |

Mobility

| | | |
|---|---|---|
| Tetrahydrothiophene | : | The product will be dispersed amongst the various environmental compartments (soil/ water/ air). |
| t-Butyl Mercaptan | : | The product will be dispersed amongst the various environmental compartments (soil/ water/ air). |

Results of PBT assessment

| | | |
|---|---|---|
| Tetrahydrothiophene | : | Non-classified PBT substance, Non-classified vPvB substance |
| 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., Toxic to aquatic life with long lasting effects.

**Ecotoxicology Assessment**

Short-term (acute) aquatic hazard
t-Butyl Mercaptan : Toxic to aquatic life.

Long-term (chronic) aquatic hazard
Tetrahydrothiophene : Harmful to aquatic life with long lasting effects.

t-Butyl Mercaptan : 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)**
UN3336, MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S., (TETRAHYDROTHIOPHENE, TERTIARY BUTYL MERCAPTAN), 3, II

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**
UN3336, MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S., (TETRAHYDROTHIOPHENE, TERTIARY BUTYL MERCAPTAN), 3, II, (< -17.8 °C), MARINE POLLUTANT, (TERTIARY BUTYL MERCAPTAN)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**
UN3336, MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S., (TETRAHYDROTHIOPHENE, TERTIARY BUTYL MERCAPTAN), 3, II

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**
UN3336, MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S., (TETRAHYDROTHIOPHENE, TERTIARY BUTYL MERCAPTAN), 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (TERTIARY BUTYL MERCAPTAN)

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**
UN3336, MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S., (TETRAHYDROTHIOPHENE, TERTIARY BUTYL MERCAPTAN), 3, II, ENVIRONMENTALLY HAZARDOUS, (TERTIARY BUTYL MERCAPTAN)

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**
UN3336, MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S., (TETRAHYDROTHIOPHENE, TERTIARY BUTYL MERCAPTAN), 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** | : | Flammable (gases, aerosols, liquids, or solids)<br>Skin corrosion or irritation<br>Serious eye damage or eye irritation<br>Respiratory or skin sensitization<br>Acute toxicity (any route of exposure) |
| SARA 302 Threshold Planning Quantity | : | No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA 313 Components | : | 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 112 (40 CFR 61).

**US State Regulations**

Pennsylvania Right To Know
: t-Butyl Mercaptan - 75-66-1

New Jersey Right To Know
: Tetrahydrothiophene - 110-01-0
t-Butyl Mercaptan - 75-66-1

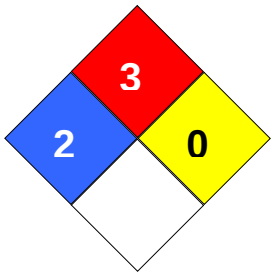
California Prop. 65 Components : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**Notification status**

| | | |
|---|---|---|
| Europe REACH | : | On the inventory, or in compliance with the inventory |
| United States of America (USA) 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 : E027

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% | | |