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

1.1 Product information

Product Name: Scentinel® T-50 Gas Odorant
Material: 1120360, 1101267, 1094321, 1090052, 1095293, 1098466, 1101268, 1024726, 1024725

EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Legal Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC-No.</td>
<td>Registration number</td>
</tr>
<tr>
<td>Tetrahydrothiophene</td>
<td>110-01-0</td>
<td>Chevron Phillips Chemicals International NV</td>
</tr>
<tr>
<td></td>
<td>203-728-9</td>
<td>01-211948979-07-0001</td>
</tr>
<tr>
<td></td>
<td>613-087-00-0</td>
<td></td>
</tr>
<tr>
<td>t-Butyl Mercaptan</td>
<td>75-66-1</td>
<td>Chevron Phillips Chemicals International NV</td>
</tr>
<tr>
<td></td>
<td>200-890-2</td>
<td>01-2119491288-26-0000</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet

Company: Chevron Phillips Chemical Company LP
Specialty Chemicals
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

1.4 Emergency telephone:

SDS Number: 100000013852

1/17
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

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

| Flammable liquids, Category 2 | H225: Highly flammable liquid and vapor. |
| Skin irritation, Category 2   | H315: Causes skin irritation. |
| Eye irritation, Category 2   | H319: Causes serious eye irritation. |
Skin sensitization, Category 1
Long-term (chronic) aquatic hazard, Category 2

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

Hazard pictograms:

Signal Word: Danger

Hazard Statements:
H225: Highly flammable liquid and vapor.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391: Collect spillage.

Hazardous ingredients which must be listed on the label:
- 75-66-1 t-Butyl Mercaptan

SECTION 3: Composition/information on ingredients

3.1 - 3.2 Substance or Mixture

Synonyms: Gas Odorant

Molecular formula: Mixture

Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrothiophene</td>
<td>110-01-0</td>
<td>203-728-9</td>
<td>Flam. Liq. 2; H225 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315</td>
<td>48 - 52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>613-087-00-0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SDS Number: 100000013852
SAFETY DATA SHEET

Scentinel® T-50 Gas Odorant

Version 2.0

Eye Irrit. 2; H319
Aquatic Chronic 3; H412

| 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
|                  |                  | 48 - 52

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled: Move to fresh air. If symptoms persist, call a physician.

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. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point: 15 °C (59 °F)
Method: Tagliabue Open Cup

Autoignition temperature: 200 °C (392 °F)

5.1 Extinguishing media

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

Unsuitable extinguishing media: High volume water jet.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection: Do not spray on 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.


SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

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

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling

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

Advice on protection against fire and explosion: Do not spray on 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.

7.2 Conditions for safe storage, including any incompatibilities

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

8.1 Control parameters

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Butyl Mercaptan</td>
<td>Manufacturer</td>
<td>TWA</td>
<td>0.5 ppm,</td>
<td></td>
</tr>
</tbody>
</table>

FR

<table>
<thead>
<tr>
<th>Composants</th>
<th>Base</th>
<th>Valeur</th>
<th>Paramètres de contrôle</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Butyl Mercaptan</td>
<td>FR VLE</td>
<td>VME</td>
<td>0.5 ppm, 1.5 mg/m3</td>
<td>normal,</td>
</tr>
</tbody>
</table>

normal Valeurs limites indicatives

DE

<table>
<thead>
<tr>
<th>Inhaltsstoffe</th>
<th>Grundlage</th>
<th>Wert</th>
<th>Zu überwachende Parameter</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrothiophene</td>
<td>DE TRGS 900</td>
<td>AGW</td>
<td>50 ppm, 180 mg/m3</td>
<td>DFG, H, Y,</td>
</tr>
<tr>
<td>Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hautresorptiv</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CH

<table>
<thead>
<tr>
<th>Inhaltsstoffe</th>
<th>Grundlage</th>
<th>Wert</th>
<th>Zu überwachende Parameter</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrothiophene</td>
<td>CH SUVA</td>
<td>MAK-Wert</td>
<td>50 ppm, 180 mg/m3</td>
<td>SSc,</td>
</tr>
</tbody>
</table>

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

8.2 Exposure controls

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 workplace 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 workplace. Wear as appropriate: Flame retardant antistatic protective clothing. Remove and wash contaminated clothing before reuse. 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

#### 9.1 Information on basic physical and chemical properties

**Appearance**

- **Form**: Liquid
- **Physical state**: Liquid
- **Color**: Colorless
- **Odor**: Pungent

**Safety data**

- **Flash point**: 15 °C (59 °F)
- Method: Tagliabue Open Cup
Scentinel® T-50 Gas Odorant

Version 2.0
Revision Date 2018-11-29

Lower explosion limit : No data available
Upper explosion limit : No data available
Oxidizing properties : no

Autoignition temperature : 200 °C (392 °F)
Molecular formula : Mixture
Molecular weight : Not applicable
pH : Not applicable
Pour point : No data available

Boiling point/boiling range : 63 °C (145 °F)
Vapor pressure : 3,40 PSI
 at 38 °C (100 °F)
Relative density : 0,9
 at 15 °C (59 °F)
Density : 903,5 g/l
Water solubility : No data available
Partition coefficient: n-octanol/water : No data available
Viscosity, kinematic : No data available
Relative vapor density : No data available
Evaporation rate : No data available
Percent volatile : > 99 %

SECTION 10: Stability and reactivity

10.1
Reactivity : Stable under recommended storage conditions.

10.2
Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3
Possibility of hazardous reactions
### Hazardous reactions

- Hazardous reactions: Hazardous polymerization does not occur.
  - Further information: No decomposition if stored and applied as directed.
  - 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

- Sulfur
- Sulfur oxides

### Other data

- No decomposition if stored and applied as directed.

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Scentinel® T-50 Gas Odorant**

**Acute oral toxicity**
- Acute toxicity estimate: > 2,000 mg/kg
- Method: Calculation method

**Acute inhalation toxicity**
- Acute toxicity estimate: > 20 mg/l
  - Exposure time: 4 h
  - Test atmosphere: vapor
  - Method: Calculation method

**Acute dermal toxicity**
- Acute toxicity estimate: > 2,000 mg/kg
- Method: Calculation method

**Skin irritation**
- Irritating to skin. largely based on animal evidence.

**Eye irritation**
- May cause irreversible eye damage. largely based on animal evidence.

**Sensitization**
- Causes sensitization. largely based on animal evidence.

**Repeated dose toxicity**

- Species: Rat, Male and female
  - Sex: Male and female
  - Application Route: Inhalation
SAFETY DATA SHEET

Scentinel® T-50 Gas Odorant

Version 2.0

Revision Date 2018-11-29

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

SDS Number: 100000013852 10/17
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
Scentinel® T-50 Gas Odorant

**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® T-50 Gas Odorant Aspiration toxicity**: May be harmful if swallowed and enters airways.

**CMR effects**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Mutagenicity</th>
<th>Teratogenicity</th>
<th>Reproductive toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrothiophene</td>
<td>Tests on bacterial or mammalian cell cultures did not show mutagenic effects.</td>
<td>Animal testing did not show any effects on fetal development.</td>
<td>Animal testing did not show any effects on fertility.</td>
</tr>
<tr>
<td>t-Butyl Mercaptan</td>
<td>Did not show mutagenic effects in animal experiments.</td>
<td>Did not show teratogenic effects in animal experiments.</td>
<td>No toxicity to reproduction</td>
</tr>
</tbody>
</table>

**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)  
  - Method: OECD Test Guideline 203

**Toxicity to daphnia and other aquatic invertebrates**
Tetrahydrothiophene : EC50: 24 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 202

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

Tetrahydrothiophene : EC50: > 153.2 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

Toxicity to bacteria

Tetrahydrothiophene : EC50: 1530 mg/l  
Exposure time: 3 h  
Respiration inhibition  
Method: OECD Test Guideline 209

12.2 Persistence and degradability

Biodegradability

Tetrahydrothiophene : < 10 %  
According to the results of tests of biodegradability this product is not readily biodegradable.

t-Butyl Mercaptan : aerobic  
Result: Not readily biodegradable.  
6 %  
Testing period: 63 d  
Method: OECD Test Guideline 301

12.3 Bioaccumulative potential

Bioaccumulation

Tetrahydrothiophene : Bioaccumulation is unlikely.

t-Butyl Mercaptan : Bioconcentration factor (BCF): 12  
Bioaccumulation is unlikely.

12.4
Mobility in soil

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).

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Additional ecological information:

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

Tetrahydrothiophene: Harmful to aquatic life with long lasting effects.
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

13.1 Waste treatment methods

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

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

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

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

SECTION 14: Transport information

14.1 - 14.7 Transport information

SDS Number: 100000013852
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, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., 3, II

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**
UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., 3, II, (15 °C), MARINE POLLUTANT, (TERTIARY BUTYL MERCAPTAN)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**
UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., 3, II

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

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

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**
UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., 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**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture National legislation


**Water contaminating class** (Germany)  
WGK 3 highly water endangering
15.2

**Major Accident Hazard Legislation**

- **96/82/EC Update: 2003**
  - Dangerous for the environment 9b
  - Quantity 1: 200 t
  - Quantity 2: 500 t

- **ZEU_SEVES3 Update:**
  - FLAMMABLE LIQUIDS P5c
  - 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 (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: 387280

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
Scentinel® T-50 Gas Odorant

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

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

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

H225      Highly flammable liquid and vapor.
H302      Harmful if swallowed.
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.
H401      Toxic to aquatic life.
H411      Toxic to aquatic life with long lasting effects.
H412      Harmful to aquatic life with long lasting effects.