SCENTINEL® N Gas Odorant

Version 3.0 Revision Date 2025-10-29

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2020/878

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

1.1

Product information

Product Name : SCENTINEL® N Gas Odorant
Material : 1120698, 1120697, 1120696, 1119303, 1116175, 1099837, 1027464, 1024680, 1024681, 1024683, 1027463, 1024682

EC-No.Registration number

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
t-Butyl Mercaptan	75-66-1 200-890-2	Chevron Phillips Chemicals International NV 01-2119491288-26-0000
Isopropyl Mercaptan	75-33-2 200-861-4	Chevron Phillips Chemicals International NV 01-2119510881-44-0001
Isopropyl Mercaptan	75-33-2 200-861-4	Chevron Phillips Chemical Company LP 01-2119510881-44-0001
n-Propyl Mercaptan	107-03-9 203-455-5	Chevron Phillips Chemicals International NV 01-2120770275-52-0000
n-Propyl Mercaptan	107-03-9 203-455-5	Chevron Phillips Chemical Company LP 01-2120770275-52-0000

Uses advised against : This material should not be used for purposes other than the identified uses in section 1 without expert advice.

1.3

Details of the supplier of the safety data sheet

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
9500 Lakeside Blvd.
The Woodlands, TX 77381

Local : Chevron Phillips Chemicals International N.V.
Airport Plaza (Stockholm Building)
Leonardo Da Vincilaan 19
1831 Diegem
Belgium

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

1.4

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: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726;POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;
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

Organization that prepared the SDS	:	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

2.1

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

Flammable liquids, Category 2	H225: Highly flammable liquid and vapor.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : Danger

Hazard Statements :

H225	Highly flammable liquid and vapor.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H410	Very 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/ hearing 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
- 75-33-2 Isopropyl Mercaptan
- 107-03-9 n-Propyl Mercaptan
- 513-53-1 sec-butyl Mercaptan

2.3

Other hazards

Results of PBT and vPvB 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.

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Synonyms : Gas Odorant
Mercaptan Mixture

Scentinel® N-4 Gas Odorant

Molecular formula : Mixture

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]	Specific Conc. Limits, M-factors and ATEs
t-Butyl Mercaptan	75-66-1 200-890-2	Flam. Liq. 2; H225 Eye Irrit. 2; H319 Skin Sens. 1B; H317 Aquatic Chronic 2; H411	75 - 80	
Isopropyl Mercaptan	75-33-2 200-861-4	Flam. Liq. 2; H225 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	13 - 25	M [Acute]=1 M [Chronic]=1
n-Propyl Mercaptan	107-03-9 203-455-5	Flam. Liq. 2; H225 Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	0 - 7	ATE 1.790 mg/kg ATE vapor 3 mg/l M [Acute]=10 M [Chronic]=10
sec-butyl Mercaptan	513-53-1 208-165-2	Flam. Liq. 2; H225 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	2 - 4	M [Acute]=1 M [Chronic]=1

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. 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 : 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. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed
Notes to physician

Symptoms : No data available.

Risks : No data available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No data available.

SECTION 5: Firefighting measures

Flash point : -18°C (0°F)
Method: closed cup
estimated

Autoignition temperature : No data available

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 fire fighting : 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 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 products : Carbon oxides. Sulfur oxides.

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 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.

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.

Uses advised against : This material should not be used for purposes other than the identified uses in section 1 without expert advice.

SECTION 8: Exposure controls/personal protection

8.1

Control parameters
Ingredients with workplace control parameters

Chevron Phillips Chemical Company LP

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

FR

Composants	Base	Valeur	Paramètres de contrôle	Note
t-Butyl Mercaptan	FR VLE	VME	0,5 ppm, 1,5 mg/m3	Valeurs limites admises (circulaires),
sec-butyl Mercaptan	FR VLE	VME	0,5 ppm, 1,5 mg/m3	Valeurs limites admises (circulaires),

Valeurs limites admises (circulaires) Valeurs limites admises (circulaires)

DE

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
t-Butyl Mercaptan	DE DFG MAK	MAK	1 ppm, 3,7 mg/m3	Sh, H, C,
	DE TRGS 900	AGW	1 ppm, 3,7 mg/m3	H, Y, Sh,
sec-butyl Mercaptan	DE DFG MAK	MAK	2 ppm, 7,5 mg/m3	H, D,

C Eine fruchtschädigende Wirkung ist bei Einhaltung des MAK- und BATWertes nicht anzunehmen
D Für die Beurteilung der fruchtschädigenden Wirkung ggf. inklusive der entwicklungsneurotoxischen Wirkung liegen entweder keine Daten vor oder die vorliegenden Daten reichen für eine Einstufung in eine der Gruppen A, B oder C nicht aus
H Hautresorptiv
Sh Hautsensibilisierender Stoff
Y Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden

CH

Inhaltsstoffe	Grundlage	Wert	Zu überwachende Parameter	Bemerkung
t-Butyl Mercaptan	CH SUVA	MAK-Wert	2 ppm, 7 mg/m3	H, S, SSc,
	CH SUVA	KZGW	4 ppm, 15 mg/m3	H, S, SSc,
sec-butyl Mercaptan	CH SUVA	MAK-Wert	6 ppm, 22 mg/m3	H,
	CH SUVA	KZGW	12 ppm, 45 mg/m3	H,

H Vergiftung durch Hautresorption möglich; Bei Stoffen, welche die Haut leicht zu durchdringen vermögen, kann durch die zusätzliche Hautresorption die innere Belastung wesentlich höher werden als bei alleiniger Aufnahme durch die Atemwege.
S Sensibilisatoren, die mit S gekennzeichneten Substanzen führen besonders häufig zu Überempfindlichkeitsreaktionen (allergischen Krankheiten).
SSc Eine Schädigung der Leibesfrucht braucht bei Einhaltung des MAK-Wertes nicht befürchtet zu werden.

DNEL

Isopropyl Mercaptan : End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Long-term systemic effects
Value: 14,5 mg/m3

End Use: Workers
Routes of exposure: Inhalation

Potential health effects: Long-term local effects
Value: 18,6 mg/m3

End Use: Workers
Routes of exposure: Dermal
Potential health effects: Long-term systemic effects
Value: 2,1 mg/kg

End Use: Workers
Routes of exposure: Dermal
Potential health effects: Acute local effects
Value: 1,53 mg/cm2

End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Long-term systemic effects
Value: 2,57 mg/m3

End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Long-term local effects
Value: 3,3 mg/m3

End Use: Consumers
Routes of exposure: Oral
Potential health effects: Long-term systemic effects
Value: 0,74 mg/kg

n-Propyl Mercaptan : End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Long-term systemic effects
Value: 14,5 mg/m3

End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Long-term local effects
Value: 18,6 mg/m3

End Use: Workers
Routes of exposure: Dermal
Potential health effects: Long-term systemic effects
Value: 2,06 mg/kg

End Use: Workers
Routes of exposure: Dermal
Potential health effects: Acute local effects
Value: 1,53 mg/cm2

End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Long-term systemic effects
Value: 2,57 mg/m3

End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Long-term local effects
Value: 3,3 mg/m3

End Use: Consumers
Routes of exposure: Oral

Potential health effects: Long-term systemic effects
Value: 0,74 mg/kg

PNEC

Isopropyl Mercaptan : Fresh water
Value: 0 mg/l

Marine water
Value: 0 mg/l

Fresh water sediment
Value: 0,002 mg/kg

Marine sediment
Value: 0 mg/kg

Sewage treatment plant
Value: 8,805 mg/l

Soil
Value: 0 mg/kg

n-Propyl Mercaptan : Fresh water
Value: 0 mg/l

Marine water
Value: 0 mg/l

Fresh water sediment
Value: 0,001 mg/kg

Marine sediment
Value: 0 mg/kg

Sewage treatment plant
Value: 8,8 mg/l

Soil
Value: 0 mg/kg

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 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. 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

9.1

Information on basic physical and chemical properties

Appearance

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

Safety data

Flash point	:	-18°C (0°F) Method: closed cup 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

Freezing point	:	No data available
Pour point		No data available
Boiling point/boiling range	:	58,3-70°C (136,9-158°F)
Vapor pressure	:	6,80 PSI at 38°C (100°F) Literature
Relative density	:	0,81 at 15,6 °C (60,1 °F), estimated
Density	:	810,1 g/l
Water solubility	:	Slightly soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	0,5 cSt at 40°C (104°F)
Relative vapor density	:	1 (Air = 1.0)
Evaporation rate	:	> 1 (N-Butyl Acetate = 1)
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: Vapors may form explosive mixture with air.

10.4

Conditions to avoid : Heat, flames and sparks.

10.6

Hazardous decomposition : Carbon oxides

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

SECTION 11: Toxicological information

11.1

Information on toxicological effects

SCENTINEL® N Gas Odorant
Acute oral toxicity : Acute toxicity estimate: 3.793 mg/kg
Method: Calculation method

SCENTINEL® N Gas Odorant
Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Test atmosphere: vapor
Method: Calculation method

SCENTINEL® N Gas Odorant
Acute dermal toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

SCENTINEL® N Gas Odorant
Skin irritation : May cause skin irritation and/or dermatitis.

SCENTINEL® N Gas Odorant
Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.

SCENTINEL® N Gas Odorant
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 Information given is based on data obtained from similar substances.
Isopropyl Mercaptan	Species: Rat, male and female Sex: male and female Application Route: Inhalation Exposure time: 13 wks Number of exposures: 6hrs/d, 5 d/wk NOEL: 0,367 mg/l 99.6 ppm Lowest observable effect level: 1,488 mg/l 403.4 ppm Method: OECD Test Guideline 413 Target Organs: Liver, Kidney, Upper respiratory tract, Blood Information given is based on data obtained from similar substances.
	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 Lowest observable effect level: 200 mg/kg Method: OECD Guideline 422 Target Organs: Liver, Blood Information given is based on data obtained from similar substances.
	Species: Rat, male and female Sex: male and female Application Route: Inhalation Exposure time: 13 wks Number of exposures: 6hrs/d, 5 d/wk NOEL: >= 196 ppm Method: OECD Test Guideline 413 Target Organs: Kidney, Upper respiratory tract, Blood Information given is based on data obtained from similar substances.
n-Propyl 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
Method: OECD Test Guideline 413
Information given is based on data obtained from similar substances.

sec-butyl Mercaptan

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

Genotoxicity in vitro

t-Butyl Mercaptan : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

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

Isopropyl Mercaptan

Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 490
Result: negative

Test Type: Micronucleus test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

n-Propyl Mercaptan

Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Cytogenetic assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo

t-Butyl Mercaptan : Test Type: Mouse micronucleus assay
Species: Mouse
Dose: 1250, 2500, 5000 mg/kg
Method: OECD Test Guideline 474
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

Isopropyl Mercaptan Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 10, 50, 200 mg/kg/bw
Exposure time: 42 d
Number of exposures: Daily
Method: OECD Guideline 422
NOAEL Parent: >= 200 mg/kg
NOAEL F1: 50 mg/kg
Information given is based on data obtained from similar substances.
No adverse effects expected

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

Developmental Toxicity

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

Isopropyl Mercaptan Species: Rat
Application Route: Inhalation
Dose: 11, 99, 195 ppm
Exposure time: 6h/d
Test period: GD 9 - 19
Method: OECD Guideline 414
NOAEL Teratogenicity: >= 195 ppm
NOAEL Maternal: >= 195 ppm
Information given is based on data obtained from similar substances.

Species: Mouse
Application Route: Inhalation
Dose: 11, 99, 195 ppm
Exposure time: 6h/d
Test period: GD 9 - 19
Method: OECD Guideline 414
NOAEL Teratogenicity: >= 195 ppm
NOAEL Maternal: >= 195 ppm
Information given is based on data obtained from similar substances.

sec-butyl Mercaptan Species: Rat
Application Route: Inhalation
Dose: 11, 99, 195 ppm
Exposure time: GD 6-16
Number of exposures: 6 hrs/d
Method: OECD Guideline 414
NOAEL Teratogenicity: > = 195 ppm
NOAEL Maternal: > = 195 ppm
Information given is based on data obtained from similar substances.

Species: Mouse
Application Route: Inhalation
Dose: 11, 99, 195 ppm
Exposure time: GD 6-16
Number of exposures: 6 hrs/d
Method: OECD Guideline 414
NOAEL Teratogenicity: > = 195 ppm
NOAEL Maternal: > = 195 ppm
Information given is based on data obtained from similar substances.

SCENTINEL® N Gas Odorant

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

Sensitization

n-Propyl Mercaptan : May cause an allergic skin reaction.

CMR effects

t-Butyl Mercaptan : Carcinogenicity: Not available
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., In vivo tests did not show mutagenic effects
Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

Isopropyl Mercaptan Carcinogenicity: Not available
Mutagenicity: In vitro tests did not show mutagenic effects
Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

n-Propyl Mercaptan Carcinogenicity: Not available
Mutagenicity: In vitro tests did not show mutagenic effects
Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments., No toxicity to reproduction

11.2 Information on other hazards

SCENTINEL® N Gas Odorant

Further information : Solvents may degrease the skin. High concentration of vapors may cause irritation to eyes and respiratory system and produce narcotic effects.

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish

t-Butyl Mercaptan	:	LC50: 34 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203
Isopropyl Mercaptan		LC50: 34 mg/l Exposure time: 96 h semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203 Information given is based on data obtained from similar substances.
n-Propyl Mercaptan		LC50: 1,3 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow) semi-static test Analytical monitoring: yes Test substance: yes Method: OECD Test Guideline 203 Toxic to aquatic organisms.
sec-butyl Mercaptan		LC50: 8,5 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) static test Analytical monitoring: yes Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

t-Butyl Mercaptan	:	EC50: 6,7 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202
Isopropyl Mercaptan		EC50: 0,25 - 0,5 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Test substance: yes Method: OECD Test Guideline 202
n-Propyl Mercaptan		EC50: 70 µg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Analytical monitoring: yes Test substance: yes Method: OECD Test Guideline 202 Very toxic to aquatic organisms.
sec-butyl Mercaptan		0,56 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Immobilization Method: OECD Test Guideline 202 Information refers to the main ingredient.

Toxicity to algae

t-Butyl Mercaptan	:	EC50: 24 mg/l

Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Method: OECD Test Guideline 201

Isopropyl Mercaptan: ErC50: 21,9 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
static test Method: OECD Test Guideline 201

n-Propyl Mercaptan: ErC50: 3 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (algae)
Growth inhibition Method: OECD Test Guideline 201
Information given is based on data obtained from similar substances.

sec-butyl Mercaptan: EC50: 3,4 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition Method: OECD Test Guideline 201

M-Factor

propane-2-thiol	:	M-Factor (Acute Aquat. Tox.)	1
		M-Factor (Chron. Aquat. Tox.)	1

M-Factor

propane-1-thiol	M-Factor (Acute Aquat. Tox.)	10
	M-Factor (Chron. Aquat. Tox.)	10

M-Factor

butane-2-thiol	M-Factor (Acute Aquat. Tox.)	1
	M-Factor (Chron. Aquat. Tox.)	1

Toxicity to bacteria

Isopropyl Mercaptan : EC50: 880,5 mg/l
Exposure time: 3 h
Respiration inhibition
Method: OECD Test Guideline 209

n-Propyl Mercaptan: EC50: 880,5 mg/l
Exposure time: 3 h
Respiration inhibition
Method: OECD Test Guideline 209
Information given is based on data obtained from similar substances.

12.2
Persistence and degradability

Biodegradability

t-Butyl Mercaptan	:	aerobic Result: Not readily biodegradable. 6 % Testing period: 63 d Method: OECD Test Guideline 301
Isopropyl Mercaptan	:	aerobic Result: Not readily biodegradable. 0 % Testing period: 28 Days Method: OECD Test Guideline 301D
n-Propyl Mercaptan	:	aerobic Result: Not readily biodegradable. 17 % Testing period: 28 Days Method: OECD Test Guideline 301
sec-butyl Mercaptan	:	aerobic Result: Not readily biodegradable. 6 % Testing period: 63 d Method: OECD Test Guideline 301F Information given is based on data obtained from similar substances.

12.3
Bioaccumulative potential

Bioaccumulation

t-Butyl Mercaptan	:	Bioconcentration factor (BCF): 12 Method: QSAR modeled data This material is not expected to bioaccumulate.
Isopropyl Mercaptan	:	Bioconcentration factor (BCF): 6 Method: QSAR modeled data This material is not expected to bioaccumulate.
n-Propyl Mercaptan	:	Bioconcentration factor (BCF): 7,26 This material is not expected to bioaccumulate.
sec-butyl Mercaptan	:	Bioconcentration factor (BCF): 12,67 Method: QSAR modeled data This material is not expected to bioaccumulate.

12.4
Mobility in soil

Mobility

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

The product will be dispersed amongst the various environmental compartments (soil/ water/ air).

sec-butyl Mercaptan : Method: Calculation, Mackay Level III Fugacity Model
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

Endocrine disrupting properties

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7

Other adverse effects

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

12.8

Additional Information

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

t-Butyl Mercaptan : Toxic to aquatic life.

Isopropyl Mercaptan : Very toxic to aquatic life.

n-Propyl Mercaptan : Very toxic to aquatic life.

sec-butyl Mercaptan : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

t-Butyl Mercaptan : Toxic to aquatic life with long lasting effects.

Isopropyl Mercaptan : Very toxic to aquatic life with long lasting effects.

n-Propyl Mercaptan : Very toxic to aquatic life with long lasting effects.

sec-butyl Mercaptan : Very 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

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., (TERTIARY BUTYL MERCAPTAN, ISOPROPYL MERCAPTAN), 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, ISOPROPYL MERCAPTAN), 3, II, (-18 °C c.c.), MARINE POLLUTANT, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

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

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

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, ISOPROPYL MERCAPTAN), 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

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

33,UN3336,MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, ISOPROPYL MERCAPTAN), 3, II, ENVIRONMENTALLY HAZARDOUS, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

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

UN3336, MERCAPTANS, LIQUID, FLAMMABLE, N.O.S., (TERTIARY BUTYL MERCAPTAN, ISOPROPYL MERCAPTAN), 3, II, ENVIRONMENTALLY HAZARDOUS, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

15.1

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

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Water hazard class (Germany) : WGK 3 highly hazardous to water

15.2

Major Accident Hazard Legislation : 96/82/EC Update:
Highly flammable
7b
Quantity 1: 5.000 t
Quantity 2: 50.000 t

: 96/82/EC Update:
Dangerous for the environment
9a
Quantity 1: 100 t
Quantity 2: 200 t

: ZEU_SEVES3 Update:
FLAMMABLE LIQUIDS
P5c
Quantity 1: 5.000 t
Quantity 2: 50.000 t

: ZEU_SEVES3 Update:
ENVIRONMENTAL HAZARDS
E1
Quantity 1: 100 t
Quantity 2: 200 t

Notification status

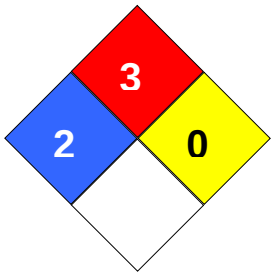
Europe REACH : A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold

quantity of the non-regulated substances.

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
Canada DSL	:	This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.
Australia AIIC	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	Not in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Japan ISHL	:	On the inventory, or in compliance with the inventory
Korea KECI	:	Not in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
China IECSC	:	Not in compliance with the inventory
Other TECI	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0



Revision Date : 2025-10-29
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Further information

Legacy SDS Number : 99720

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%
AIIC	Australian Inventory of Industrial Chemicals	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%	ATE	Acute toxicity estimate

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

H225	Highly flammable liquid and vapor.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.