



Scentinel® P-T Gas Odorant

Version 2.1

Revision Date 2023-08-03

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 identifier

Product information

Product Name : Scentinel® P-T Gas Odorant
 Material : 1024679

EC-No.Registration number

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
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

1.2

Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses : Odorant
 Supported

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

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

Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic

Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)

Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Lithuania: +370 (85) 2362052

Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)

Malta: +356 2395 2000

The Netherlands: NVIC: +31 (0)88 755 8000

Norway: 22 59 13 00 (24 hours/day, 7 days/week)

Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Portugal: CIAV phone number: +351 800 250 250

Romania: +40213183606

Slovakia: +421 2 5477 4166

Slovenia: Phone number: 112

Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)

Sweden: 112 – ask for Poisons Information

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

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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 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.
		H410	Very toxic to aquatic life with long lasting

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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:

- 75-33-2 Isopropyl Mercaptan
- 107-03-9 n-Propyl 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**3.1 - 3.2****Substance or Mixture**

Synonyms : Propanethiol

Molecular formula : C3H8S

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
Isopropyl Mercaptan	75-33-2 200-861-4	Flam. Liq. 2; H225 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	65 - 68	M [Acute]=1 M [Chronic]=1
n-Propyl Mercaptan	107-03-9 203-455-5	Flam. Liq. 2; H225 Acute Tox. 4; H302	32 - 35	M [Acute]=10 M [Chronic]=10

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		Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410		
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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 : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

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 : -34°C (-29°F)
estimated

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

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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.

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

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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.

SECTION 8: Exposure controls/personal protection**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

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	Value: 3,3 mg/m ³
	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/m ³
	End Use: Workers
	Routes of exposure: Inhalation
	Potential health effects: Long-term local effects
	Value: 18,6 mg/m ³
	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/cm ²
	End Use: Consumers
	Routes of exposure: Inhalation
	Potential health effects: Long-term systemic effects
	Value: 2,57 mg/m ³
	End Use: Consumers
	Routes of exposure: Inhalation
	Potential health effects: Long-term local effects
	Value: 3,3 mg/m ³
	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

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	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 airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	: If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as: Air-Purifying Respirator for Organic Vapors. 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

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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 : -34°C (-29°F)
 estimated

Lower explosion limit : No data available

Upper explosion limit : No data available

Molecular formula : C₃H₈S

pH : Not applicable

Freezing point : No data available

Boiling point/boiling range : 52°C (126°F)

Vapor pressure : 8,80 PSI
 at 37,8°C (100,0°F)

Relative density : 0,82
 at 15,6 °C (60,1 °F)

Water solubility : Slightly soluble

Viscosity, dynamic : 0,369 cP
 at 20°C (68°F)

Relative vapor density : 2,62
 (Air = 1.0)

Evaporation rate : 1
 estimated

9.2**Other information**

Conductivity : No data available

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

Hazardous reactions: Vapors may form explosive mixture with air.

10.4

Conditions to avoid : Heat, flames and sparks.

10.6

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

SECTION 11: Toxicological information**11.1****Information on toxicological effects****Scentinel® P-T Gas Odorant**

Acute oral toxicity : Acute toxicity estimate: 2.167 mg/kg
Method: Calculation method

Acute inhalation toxicity

Isopropyl Mercaptan : LC50: > 32,24 mg/l
Exposure time: 4 h
Species: Rat
Sex: male and female
Test atmosphere: vapor
Method: OECD Test Guideline 403
Test substance: yes
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

n-Propyl Mercaptan : LC50: > 5,67 mg/l
Exposure time: 4 h
Species: Rat
Sex: male and female
Test atmosphere: vapor
Method: OECD Test Guideline 436

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An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

Scentinel® P-T Gas Odorant**Acute dermal toxicity**

: Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Scentinel® P-T Gas Odorant**Skin irritation**

: May irritate skin. largely based on animal evidence.

Scentinel® P-T Gas Odorant**Eye irritation**

: May irritate eyes. largely based on animal evidence.

Scentinel® P-T Gas Odorant**Sensitization**

: Causes sensitization. largely based on animal evidence.

Repeated dose toxicity

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

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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.

Genotoxicity in vitro

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.

Reproductive toxicity

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: \geq 200 mg/kg
 NOAEL F1: 50 mg/kg
 Information given is based on data obtained from similar substances.
 No adverse effects expected

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Developmental Toxicity

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.

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Aspiration toxicity**

: May be harmful if swallowed and enters airways.

CMR effects

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® P-T Gas Odorant
Further information**

: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may decrease the skin.

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**

SDS Number:100000014178

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Toxicity**Toxicity to fish**

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.

Toxicity to daphnia and other aquatic invertebrates

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.

Toxicity to algae

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.

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

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M-Factor (Chron. Aquat. Tox.) 10

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

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

12.3**Bioaccumulative potential**

Bioaccumulation

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.

12.4**Mobility in soil**

Mobility

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).

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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**

Isopropyl Mercaptan : Very toxic to aquatic life.

n-Propyl Mercaptan : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

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

n-Propyl 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.

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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)

UN2402, PROPANETHIOLS, 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN2402, PROPANETHIOLS, 3, II, (-34 °C c.c.), MARINE POLLUTANT, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN2402, PROPANETHIOLS, 3, II

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

UN2402, PROPANETHIOLS, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

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

33, UN2402, PROPANETHIOLS, 3, II, ENVIRONMENTALLY HAZARDOUS, (N-PROPYL MERCAPTAN, ISOPROPYL MERCAPTAN)

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

UN2402, PROPANETHIOLS, 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

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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 water endangering

15.2

Major Accident Hazard Legislation

- : 96/82/EC Update: 2003
Highly flammable
7b
Quantity 1: 5.000 t
Quantity 2: 50.000 t
- : 96/82/EC Update: 2003
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 : This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).

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 : All components of this product are on the Canadian DSL

Other 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 : A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).

Philippines PICCS : On the inventory, or in compliance with the inventory

China IECSC : On the inventory, or in compliance with the inventory

Taiwan TCSI : On the inventory, or in compliance with the inventory

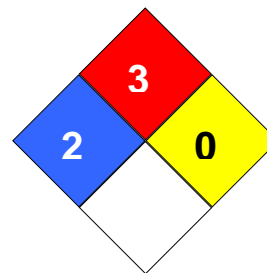
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SECTION 16: Other information

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

**Further information**

Legacy SDS Number : 398540

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	TSCA	Toxic Substance Control Act

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	New Chemical Substances		
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.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.