

**Isopropyl Mercaptan**

Version 2.2

Revision Date 2016-06-03

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

Product Name : Isopropyl Mercaptan
Material : 1083608, 1029885, 1021450, 1028387, 1021451, 1027451,
1021448, 1031054, 1021449

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

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: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

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

SECTION 2: Hazards identification

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

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

Flammable liquids, Category 2	H225: Highly flammable liquid and vapor.
Skin sensitization, Sub-category 1B	H317: May cause an allergic skin reaction.
Acute aquatic toxicity, Category 1	H400: Very toxic to aquatic life.
Chronic aquatic toxicity, Category 1	H410: Very toxic to aquatic life with long lasting effects.

Label elements**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 effects.
Precautionary Statements	:	Prevention: P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P243 Take precautionary measures against static discharge. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response: P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. Storage: P403 + P235 Store in a well-ventilated place. Keep cool.

Additional Labeling:

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 1 %
 The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 1 %

SECTION 3: Composition/information on ingredients

Synonyms	:	2-propanethiol IPM IC3SH
Molecular formula	:	C4H10S

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

Mixtures**Hazardous ingredients**

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]
Isopropyl Mercaptan	75-33-2 200-861-4	Flam. Liq. 2; H225 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	95 - 100
n-Propyl Mercaptan	107-03-9 203-455-5	Flam. Liq. 2; H225 Acute Tox. 4; H302 Skin Sens. 1B; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	1 - 5

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

SECTION 4: First aid measures

General advice	: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.
If inhaled	: Move to fresh air. If unconscious place in recovery position and seek medical advice. 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. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point	: -34 °C (-29 °F) estimated
Autoignition temperature	: No data available
Suitable extinguishing media	: Dry chemical. Carbon dioxide (CO ₂). Alcohol-resistant foam.
Unsuitable extinguishing media	: High volume water jet.
Specific hazards during fire fighting	: Do not allow run-off from fire fighting to enter drains or water courses.

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

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| Special protective equipment for fire-fighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers. |
| Fire and explosion protection | : | Do not spray on an open flame or any other incandescent material. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition. |
| Hazardous decomposition products | : | Sulfur. |

SECTION 6: Accidental release measures

- | | | |
|---------------------------|---|---|
| Personal precautions | : | Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. |
| Environmental precautions | : | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods for cleaning up | : | Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). |

SECTION 7: Handling and storage**Handling**

- | | | |
|---|---|---|
| Advice on safe handling | : | Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations. |
| Advice on protection against fire and explosion | : | Do not spray on an open flame or any other incandescent material. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition. |

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

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**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 : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate: Flame retardant antistatic protective clothing. 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.

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**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
Oxidizing properties	: yes
Autoignition temperature	: No data available
Molecular formula	: C ₄ H ₁₀ S
Molecular weight	: 90,2 g/mol
pH	: Not applicable
Pour point	: No data available
Boiling point/boiling range	: 51 °C (124 °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
Partition coefficient: n-octanol/water	: No data available
Viscosity, dynamic	: 0,369 cP
Relative vapor density	: 2,62 (Air = 1.0)
Evaporation rate	: 1 estimated
Percent volatile	: > 99 %

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

SECTION 10: Stability and reactivity

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

Possibility of hazardous reactions

Conditions to avoid : No data available.

Hazardous decomposition products : Sulfur

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

SECTION 11: Toxicological information**Acute oral toxicity**

Isopropyl Mercaptan : LD50: > 2.000 - < 5.000 mg/kg
Species: Rat
Sex: Not Specified
Symptoms: Loss of reflexes

n-Propyl Mercaptan : LD50: 1.790 mg/kg
Species: Rat
Sex: male
Harmful if swallowed.

Isopropyl Mercaptan

Skin irritation : May cause skin irritation in susceptible persons.

Isopropyl Mercaptan

Eye irritation : May cause irreversible eye damage.

Sensitization

Isopropyl Mercaptan : The product is a skin sensitizer, sub-category 1B.

n-Propyl Mercaptan : The product is a skin sensitizer, sub-category 1B.
Information given is based on data obtained from similar substances.

Isopropyl Mercaptan

Aspiration toxicity : May be harmful if swallowed and enters airways.
Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

Isopropyl Mercaptan

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

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

SECTION 12: Ecological information**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)
 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: 0,07 mg/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

M-Factor
 propane-2-thiol : 1
 propane-1-thiol : 10

Elimination information (persistence and degradability)

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

Ecotoxicology Assessment

Acute aquatic toxicity
 Isopropyl Mercaptan : Very toxic to aquatic life.

n-Propyl Mercaptan : Very toxic to aquatic life.

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

Chronic aquatic toxicity

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

n-Propyl Mercaptan

: Very toxic to aquatic life with long lasting effects.

Results of PBT assessment

Isopropyl Mercaptan : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological
information

: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life.

SECTION 13: Disposal considerations

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

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

Product

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

Contaminated packaging

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

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN2402, PROPANETHIOLS, 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

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

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN2402, PROPANETHIOLS, 3, II

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))UN2402, PROPANETHIOLS, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS,
(ISOPROPYL MERCAPTAN, N-PROPYL MERCAPTAN)**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**UN2402, PROPANETHIOLS, 3, II, ENVIRONMENTALLY HAZARDOUS, (ISOPROPYL
MERCAPTAN, N-PROPYL MERCAPTAN)**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**UN2402, PROPANETHIOLS, 3, II, ENVIRONMENTALLY HAZARDOUS, (ISOPROPYL
MERCAPTAN, N-PROPYL MERCAPTAN)

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

SECTION 15: Regulatory information**National legislation**

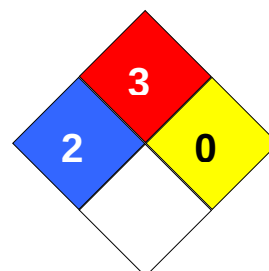
Major Accident Hazard Legislation : 96/82/EC Update: 2003
Directive 96/82/EC does not apply

Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
United States of America 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



Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

Further information

Legacy SDS Number : 38500

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

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

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

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

Isopropyl Mercaptan

Version 2.2

Revision Date 2016-06-03

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.