

**Methyl 3-Mercaptopropionate**

Version 1.6

Revision Date 2018-10-26

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

Product Name : Methyl 3-Mercaptopropionate
Material : 1113892, 1086430, 1093790, 1086431, 1086432, 1086433,
1066661, 1025300, 1024824, 1027475, 1024823

Use : Chemical intermediate

Company : Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
C/O DONG WOO CORPORATION
#B-2601,JEONGJAIL-RO,
BUNDANG-GU,SEONGNAMI-SI,
GYEONGGI-DO,13557
SOUTH KOREA
Telephone no.: +612-9186-1132

Emergency telephone:**Health:**

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090

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

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Argentina: +(54)-1159839431

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

SECTION 2: Hazards identification**Classification of the substance or mixture**

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Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2016-19) (GHS 2011)**Classification**

: Acute toxicity, Category 3, Oral
 Acute toxicity, Category 2, Inhalation
 Acute toxicity, Category 4, Dermal
 Short-term (acute) aquatic hazard, Category 1
 Long-term (chronic) aquatic hazard, Category 1

Labeling

Symbol(s)

:



Signal Word

: Danger

Hazard Statements

: H301: Toxic if swallowed.
 H312: Harmful in contact with skin.
 H330: Fatal if inhaled.
 H400: Very toxic to aquatic life.
 H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

: **Prevention:**
 P260: Do not breathe dust/fume/gas/mist/vapor/spray.
 P264: Wash the contact area thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P271: Use only outdoors or in a well-ventilated area.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ protective clothing.
 P284: Wear respiratory protection.
Response:
 P301 + P310 + P330: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
 P302 + P352 + P312: IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
 P304 + P340 + P310: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
 P361 + P364: Take off immediately all contaminated clothing and wash it before reuse.
 P391: Collect spillage.
Storage:
 P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
 P405: Store locked up.
Disposal:
 P501: Dispose of contents and container according to wastes control act.

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SECTION 3: Composition/information on ingredients

Synonyms : MMP
Methyl beta-Mercaptopropionate
Methyl-3 Mercaptopropionate

Molecular formula : C4H8O2S

Chemical name	CAS-No.	Concentration	KECI Number
Methyl 3-Mercaptopropionate	2935-90-2	99 % - 100%	KE-23109

SECTION 4: First aid measures

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

If inhaled : Call a physician or poison control center immediately. If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Take victim immediately to hospital. 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. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : 67 °C (153 °F)
Method: closed cup

Autoignition temperature : No data available

Suitable extinguishing media : Carbon dioxide (CO2).

Unsuitable extinguishing media : High volume water jet.

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

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case

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- 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. Keep away from open flames, hot surfaces and sources of ignition.
- Hazardous decomposition products : Sulfur oxides.

SECTION 6: Accidental release measures

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe 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). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. 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. Keep away from open flames, hot surfaces and sources of ignition.

Storage

- Requirements for storage areas and containers : Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Use : Chemical intermediate

SECTION 8: Exposure controls/personal protection**Engineering measures**

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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: Full-Face Supplied-Air Respirator. 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.
- 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: Flame retardant protective clothing. Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus. Footwear protecting against chemicals.
- Hygiene measures : Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Form : Liquid
 Physical state : Liquid
 Color : Colorless
 Odor : Repulsive

Safety data

- Flash point : 67 °C (153 °F)
 Method: closed cup

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Lower explosion limit	: No data available
Upper explosion limit	: No data available
Oxidizing properties	: No
Autoignition temperature	: No data available
Molecular formula	: C ₄ H ₈ O ₂ S
Molecular weight	: 120.18 g/mol
pH	: Not applicable
Freezing point	: No data available
Pour point	No data available
Boiling point/boiling range	: 166 - 169 °C (331 - 336 °F)
Vapor pressure	: 2.00 MMHG at 21 °C (70 °F)
Relative density	: 1.11 at 15 °C (59 °F), estimated
Water solubility	: Negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: No data available
Relative vapor density	: 4.1 (Air = 1.0)
Evaporation rate	: No data available
Percent volatile	: > 99 %

SECTION 10: Stability and reactivity

Reactivity	: Stable under recommended storage conditions.
Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Possibility of hazardous reactions	
Hazardous reactions	: Hazardous reactions: Hazardous polymerization does not

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occur.

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

Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.**Hazardous decomposition products** : Sulfur oxides**Other data** : No decomposition if stored and applied as directed.**SECTION 11: Toxicological information****Acute oral toxicity**

Methyl 3-Mercaptopropionate : LD50: 194 mg/kg
 Species: Rat
 Sex: male and female
 Method: OECD Test Guideline 401

Acute inhalation toxicity

Methyl 3-Mercaptopropionate : LC50: 1.8 - 2.11 mg/l
 Exposure time: 4 h
 Species: Rat
 Test atmosphere: vapor
 Method: OECD Test Guideline 403

Acute dermal toxicity

Methyl 3-Mercaptopropionate : LD50: 1,903.7 mg/kg
 Species: Rabbit
 Sex: male and female
 Method: OECD Test Guideline 402

Skin irritation

Methyl 3-Mercaptopropionate : No skin irritation

Eye irritation

Methyl 3-Mercaptopropionate : slight irritation.

Sensitization

Methyl 3-Mercaptopropionate : Did not cause sensitization on laboratory animals.

Repeated dose toxicity

Methyl 3-Mercaptopropionate : Species: Rat, Male and female
 Sex: Male and female
 Application Route: oral gavage
 Dose: 25, 50, 100 mg/kg

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Exposure time: 28 day
Number of exposures: daily
NOEL: 50 mg/kg
Lowest observable effect level: 100 mg/kg
Method: OECD Test Guideline 407
Target Organs: Stomach

Genotoxicity in vitro

Methyl 3-Mercaptopropionate : Test Type: Ames test
Result: negative

Test Type: Mouse lymphoma assay
Result: negative

Test Type: Sister Chromatid Exchange Assay
Result: positive

Reproductive toxicity

Methyl 3-Mercaptopropionate : Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 25, 50, 100 mg/kg
Number of exposures: daily
Test period: 28 d
Method: OECD Guideline 422
NOAEL Parent: 100 mg/kg
NOAEL F1: 100 mg/kg
no abnormalities observed

Developmental Toxicity

Methyl 3-Mercaptopropionate : Species: Rat
Application Route: Oral diet
Dose: 25, 50, 100 mg/kg
Test period: 28 d
NOAEL Teratogenicity: 100 mg/kg
NOAEL Maternal: 100 mg/kg
No adverse effects expected

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Aspiration toxicity : No aspiration toxicity classification.

CMR effects

Methyl 3-Mercaptopropionate : Carcinogenicity: Not available
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

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Further information : No data available.

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SECTION 12: Ecological information**Toxicity to fish**

Methyl 3-Mercaptopropionate : LC50: 1.7 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 flow-through test Analytical monitoring: yes
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Methyl 3-Mercaptopropionate : 0.55 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 static test Analytical monitoring: yes
 Method: OECD Test Guideline 202

Toxicity to algae

Methyl 3-Mercaptopropionate : ErC50: 0.65 mg/l
 Species: Desmodesmus subspicatus (green algae)
 Analytical monitoring: yes
 Method: OECD Test Guideline 201

M-Factor

methyl 3-mercaptopropionate : M-Factor (Acute Aquat. Tox.) 1
 M-Factor (Chron. Aquat. Tox.) 1

Biodegradability

Methyl 3-Mercaptopropionate : aerobic
 Result: Not readily biodegradable.
 46.0 %
 Method: OECD Test Guideline 301

Bioaccumulation

Methyl 3-Mercaptopropionate : Bioconcentration factor (BCF): 3.16
 Method: Estimated based on individual component values.

Mobility

Methyl 3-Mercaptopropionate : No data available

Results of PBT assessment

Methyl 3-Mercaptopropionate : Non-classified PBT substance

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

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information

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

Methyl 3-Mercaptopropionate : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

Methyl 3-Mercaptopropionate : Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

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

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

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

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

SECTION 14: Transport information

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

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

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN2810, TOXIC, LIQUIDS, ORGANIC, N.O.S., (METHYL 3-MERCAPTOPROPIONATE), 6.1, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN2810, TOXIC LIQUID, ORGANIC, N.O.S., (METHYL 3-MERCAPTOPROPIONATE), 6.1, II, (67 °C), MARINE POLLUTANT, (METHYL 3-MERCAPTOPROPIONATE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN2810, TOXIC LIQUID, ORGANIC, N.O.S., (METHYL 3-MERCAPTOPROPIONATE), 6.1, II

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

UN2810, TOXIC LIQUID, ORGANIC, N.O.S., (METHYL 3-MERCAPTOPROPIONATE),

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6.1, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (METHYL 3-MERCAPTOPROPIONATE)

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

UN2810, TOXIC LIQUID, ORGANIC, N.O.S., (METHYL 3-MERCAPTOPROPIONATE), 6.1, II, ENVIRONMENTALLY HAZARDOUS, (METHYL 3-MERCAPTOPROPIONATE)

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

UN2810, TOXIC LIQUID, ORGANIC, N.O.S., (METHYL 3-MERCAPTOPROPIONATE), 6.1, II, ENVIRONMENTALLY HAZARDOUS, (METHYL 3-MERCAPTOPROPIONATE)

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

SECTION 15: Regulatory information**National legislation****Regulation under the Occupational Safety and Health Act**

A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

Regulation	Chemical name	Threshold limits
Harmful Substances Prohibited from Manufacturing	: Not applicable	
Harmful Substances Required Permission for Manufacture	: Not applicable	

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

Regulation	Chemical name	Threshold limits
Toxic Chemicals	: Not applicable	
Prohibited Chemicals	: Not applicable	
Observational chemicals	: Not applicable	
Restricted Chemicals	: Not applicable	
Toxic Release Inventory	: Not applicable	

Dangerous Substances Safety Management Act

Dangerous Substances Safety Management Act : Flammable liquids, Type 2 petroleums, Water insoluble liquid

Notification status

Europe REACH : On the inventory, or in compliance with the inventory
 United States of America (USA) TSCA : On the inventory, or in compliance with the inventory
 Canada DSL : On the inventory, or in compliance with the inventory
 Australia AICS : On the inventory, or in compliance with the inventory
 New Zealand NZIoC : Not in compliance with the inventory

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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**Further information**

Legacy SDS Number : 75720

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

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			Information System
LC50	Lethal Concentration 50%		