SAFETY DATA SHEET

n-Decyl Mercaptan
Version 2.1
Revision Date 2017-08-02

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

Product information
Product Name: n-Decyl Mercaptan
Material: 1093899, 1021533, 1021530, 1021531, 1021535, 1021536,
1021537, 1021532, 1021534

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 Vincielaan 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: 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

SDS Number: 100000014026 1/12
n-Decyl Mercaptan

SECTION 2: Hazards identification

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

- Skin corrosion, Category 1C
  - H314: Causes severe skin burns and eye damage.
- Skin sensitization, Sub-category 1A
  - H317: May cause an allergic skin reaction.
- Serious eye damage, Category 1
  - H318: Causes serious eye damage.
- 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
  - [Images of hazard symbols]
- Signal Word: Danger
- Hazard Statements:
  - H314: Causes severe skin burns and eye damage.
  - H317: May cause an allergic skin reaction.
  - H410: Very toxic to aquatic life with long lasting effects.
- Precautionary Statements:
  - Prevention:
    - P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
    - 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): Take off immediately all contaminated clothing. Rinse skin with water/shower.
    - P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
    - P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Hazardous ingredients which must be listed on the label:
- 143-10-2 n-Decyl Mercaptan
SECTION 3: Composition/information on ingredients

Synonyms : 1-Decanethiol
Normal Decyl Mercaptan
NDM

Molecular formula : C10H22S

Mixtures

Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Decyl Mercaptan</td>
<td>143-10-2</td>
<td>205-584-2</td>
<td>Skin Corr. 1C; H314 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Skin Sens. 1A; H317 Skin Sens. 1; H317</td>
<td>95 - 100</td>
</tr>
</tbody>
</table>

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

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. 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 : 96 °C (205 °F)

Autoignition temperature : 210 °C (410 °F) estimated

SDS Number:100000014026
n-Decyl Mercaptan

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.

Fire and explosion protection: Normal measures for preventive fire protection.

Hazardous decomposition products: Carbon oxides. Sulfur oxides.

SECTION 6: Accidental release measures

Personal precautions: Use personal protective equipment. Ensure adequate ventilation.

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: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Handling

Advice on safe handling: 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. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers: 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.

Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate: Complete head face and neck protection. Rubber apron. 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

Information on basic physical and chemical properties

Appearance

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

Safety data

SDS Number: 100000014026
### n-Decyl Mercaptan

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>96 °C (205 °F)</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>0,6 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>5,6 % (V)</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>no</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>210 °C (410 °F) estimated</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C10H22S</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>174,38 g/mol</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Pour point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>237 °C (459 °F)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0,13 MMHG</td>
</tr>
<tr>
<td></td>
<td>at 37,8 °C (100,0 °F) estimated</td>
</tr>
<tr>
<td>Relative density</td>
<td>0,85</td>
</tr>
<tr>
<td></td>
<td>at 15,6 °C (60,1 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Medium: Hydrocarbons Soluble</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(Air = 1.0)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**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**

Not applicable.
### n-Decyl Mercaptan

| Hazardous decomposition products | Carbon oxides  
|---------------------------------|-------------------------
|                                 | Sulfur oxides           |
| Other data                      | No decomposition if stored and applied as directed. |

### SECTION 11: Toxicological information

#### Acute oral toxicity
n-Decyl Mercaptan: LD50: 2.300 mg/kg  
Species: Rat

#### Acute inhalation toxicity
n-Decyl Mercaptan: > 3.10 milligram per liter  
Exposure time: 4,5 h  
Species: Rat  
Sex: male and female  
Test atmosphere: vapor  
Method: OECD Test Guideline 403  
Information given is based on data obtained from similar substances.

#### Acute dermal toxicity
n-Decyl Mercaptan: LD50: > 2000 milligram per kilogram  
Species: Rabbit

#### n-Decyl Mercaptan

<table>
<thead>
<tr>
<th>Skin irritation</th>
<th>Extremely corrosive and destructive to tissue.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye irritation</td>
<td>May cause irreversible eye damage.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>May cause sensitization by skin contact.</td>
</tr>
<tr>
<td>Information given is based on data obtained from similar substances.</td>
<td></td>
</tr>
</tbody>
</table>

#### Repeated dose toxicity
n-Decyl Mercaptan: Species: Rat  
Application Route: Inhalation  
Dose: 0, 0.43, 1.6, 7.3 ppm  
Exposure time: 4 wk  
NOEL: 0.01 mg/l 1.7 ppm  
Lowest observable effect level: 0.06 mg/l 7.3 ppm  
Target Organs: Skin  
Information given is based on data obtained from similar substances.
n-Decyl Mercaptan

Species: Dog
Application Route: Inhalation
Dose: 0, 0.44, 1.6, 7.3 ppm
Exposure time: 4 wk
NOEL: 1.7 ppm
Lowest observable effect level: 0.06 mg/l 7.3 ppm
Information given is based on data obtained from similar substances.

n-Decyl Mercaptan
Aspiration toxicity: May be harmful if swallowed and enters airways.

n-Decyl Mercaptan
Further information: Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish
n-Decyl Mercaptan: LC50: > 100 mg/l
Exposure time: 96 h
Species: Oncorhynchus kisutch (Marine, fresh water)
Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates
n-Decyl Mercaptan: EC50: 1 - 10 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202
Information given is based on data obtained from similar substances.

Toxicity to algae
n-Decyl Mercaptan: EC50: 0.0145 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition Method: OECD Test Guideline 201
Information given is based on data obtained from similar substances.

M-Factor decane-1-thiol: 10

Biodegradability
n-Decyl Mercaptan: This material is not expected to be readily biodegradable.
Information given is based on data obtained from similar substances.

Ecotoxicology Assessment
SAFETY DATA SHEET

n-Decyl Mercaptan

Version 2.1  Revision Date 2017-08-02

Acute aquatic toxicity
n-Decyl Mercaptan : Very toxic to aquatic life.

Chronic aquatic toxicity
n-Decyl Mercaptan : Very toxic to aquatic life with long lasting effects.

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.

Additional ecological information : 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.

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)
UN1760, CORROSIVE LIQUIDS, N.O.S., (N-DECYL MERCAPTAN), 8, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, (96 °C), MARINE POLLUTANT, (N-DECYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III
n-Decyl Mercaptan

Version 2.1  
Revision Date 2017-08-02

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, (E), ENVIRONMENTALLY HAZARDOUS, (N-DECYL MERCAPTAN)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, ENVIRONMENTALLY HAZARDOUS, (N-DECYL MERCAPTAN)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1760, CORROSIVE LIQUID, N.O.S., (N-DECYL MERCAPTAN), 8, III, ENVIRONMENTALLY HAZARDOUS, (N-DECYL 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 Directive 96/82/EC does not apply
Update: 2003

Notification status
Europe REACH : Not in compliance with the inventory
United States of America (USA) TSCA : On the inventory, or in compliance with the inventory
Canada NDSL : This product contains one or several components listed in the Canadian NDSL.
Australia AICS : Not 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
Korea KECI : Not 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: 3
Fire Hazard: 1
Reactivity Hazard: 0

SDS Number:100000014026 10/12
n-Decyl Mercaptan

Version 2.1

Revision Date 2017-08-02

Further information

Legacy SDS Number : 74650

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

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

Full text of H-Statements referred to under sections 2 and 3.
<table>
<thead>
<tr>
<th>H314</th>
<th>Causes severe skin burns and eye damage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>