n-Decyl Mercaptan

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

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
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

- Classification:
  Skin corrosion, Category 1A
  Serious eye damage, Category 1
  Skin sensitization, Category 1

Labeling

SDS Number: 100000014026
n-Decyl Mercaptan

Symbol(s) : ![Symbol]

Signal Word : Danger

Hazard Statements : H314: Causes severe skin burns and eye damage.  
H317: May cause an allergic skin reaction.

Precautionary Statements : Prevention:  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
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 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P363 Wash contaminated clothing before reuse.

Storage:  
P405 Store locked up.

Disposal:  
P501 Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:  
IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : 1-Decanethiol  
Normal Decyl Mercaptan  
NDM  

Molecular formula : C10H22S

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Component | CAS-No. | Weight %
n-Decyl Mercaptan | 143-10-2 | 95 - 100

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

Unsuitable extinguishing media: High volume water jet.

Specific hazards during firefighting: 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.

SDS Number:100000014026
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

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Decyl Mercaptan</td>
<td>NIOSH REL</td>
<td>C</td>
<td>0.5 ppm, 3.6 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

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
Flash point: 96 °C (205 °F)
Lower explosion limit: 0.6 %(V)
Upper explosion limit: 5.6 %(V)
Oxidizing properties: no
Autoignition temperature: 210 °C (410 °F) estimated
Molecular formula: C10H22S
Molecular weight: 174.38 g/mol
n-Decyl Mercaptan

**Section 4: First-aid measures**

**Inhalation**

If exposed or breathing difficulty occurs, move to fresh air. If symptoms persist, call a doctor.

**Eye contact**

Flush eyes with plenty of water for 15 minutes. Get medical aid immediately.

**Skin contact**

Wash with soap and water. Get medical aid if irritation persists.

**Ingestion**

Do NOT induce emesis. Give 2 cups of water if swallowed. Get medical aid immediately.

**Section 5: Fire-fighting measures**

**Extinguishing media**

Water, foam, carbon dioxide, dry chemical, or alcohol-resistant foam are effective.

**Special hazards**

Vapor may spread fire.

**Section 6: Accidental release measures**

**Personal protective equipment**

Wear self-contained breathing apparatus in confined and/or poorly ventilated areas. Wear appropriate chemical protection clothing.

**Environmental precautions**

Do not release into the environment.

**Section 7: Handling and storage**

**Precautions**

Use with adequate ventilation. Keep away from heat, sparks, and flame. Keep container tightly closed.

**Stability**

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

**Section 8: Exposure controls/Personal protection**

**Exposure limits**

No data available.

**Respiratory protection**

Use an approved respirator if airborne concentrations exceed the recommended exposure limit.

**Eye protection**

Use protective eye wear during handling and when exposed toａfumes or dust.

**Skin protection**

Wear chemical-resistant gloves and protective clothing.

**Section 9: Physical and chemical properties**

**pH**

Not applicable

**Freezing point**

No data available

**Pour point**

No data available

**Boiling point/boiling range**

237 °C (459 °F)

**Vapor pressure**

0.13 MMHG at 37.8 °C (100.0 °F) estimated

**Relative density**

0.85 at 15.6 °C (60.1 °F)

**Water solubility**

Negligible

**Partition coefficient: n-octanol/water**

No data available

**Solubility in other solvents**

Medium: Hydrocarbons Soluble

**Viscosity, kinematic**

No data available

**Relative vapor density**

1 (Air = 1.0)

**Evaporation rate**

No data available

**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.

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
n-Decyl Mercaptan

SECTION 12: Ecological information

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n-Decyl Mercaptan

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
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.

Additional ecological information
n-Decyl Mercaptan: 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.
**n-Decyl Mercaptan**

| 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

**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
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SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Acute Health Hazard

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO – KNOW

CERCLA Reportable Quantity : This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Ingredients : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know
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California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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

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.

<table>
<thead>
<tr>
<th>Key or legend to abbreviations and acronyms used in the safety data sheet</th>
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<tbody>
<tr>
<td>ACGIH</td>
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<tr>
<td>AICS</td>
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<tr>
<td>DSL</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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</thead>
<tbody>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
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<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>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
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<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
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<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
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<td>Germany Maximum Concentration Values</td>
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<td>GHS</td>
<td>Globally Harmonized System</td>
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<td>IC50</td>
<td>Inhibition Concentration 50%</td>
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<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<td>Inventory of Existing Chemical Substances in China</td>
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<tr>
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<td>Japan, Inventory of Existing and New Chemical Substances</td>
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<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
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</tbody>
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**SDS Number:** 100000014026