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

**Product information**
- **Product Name**: n-Dodecyl Mercaptan
- **Material**: 1124172, 1122303, 1111421, 1021557, 1086421, 1071323, 1086420, 1086419, 1021569, 1024819, 1024820, 1021558, 1021567, 1021568, 1021571, 1021572, 1021573, 1021574, 1021575, 1033862, 1032614, 1021566, 1021570

**Company**
- Chevron Phillips Chemical Company LP Speciality Chemicals
- 10001 Six Pines Drive
- The Woodlands, TX 77380
- **Local**: See Company Address

**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**
**GHS Classification and labelling according to JIS Z7252-2014 and JIS Z7253-2012 (GHS 2011)**

**Classification**
- Skin corrosion/irritation, Category 1
- Serious eye damage/eye irritation, Category 1
- Skin sensitization, Category 1
- Short-term (acute) aquatic hazard, Category 1

**SDS Number**: 100000068622
Long-term (chronic) aquatic hazard, Category 1

Labeling

Symbol(s): ☢ ☠ ☣

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:
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.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313: If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.

Storage:
P405: Store locked up.

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

SECTION 3: Composition/information on ingredients

Synonyms: Normal Dodecyl Mercaptan
1-dodecanethiol
NDDM
dodecanethiol

Molecular formula: C12H26S

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
<th>ENCS/ISHL number</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Dodecyl Mercaptan</td>
<td>112-55-0</td>
<td>98.5%</td>
<td>2-464</td>
</tr>
</tbody>
</table>

SDS Number:100000068622
**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**
If unconscious, place in recovery position and seek medical advice. 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. If symptoms persist, call a physician. Take victim immediately to hospital.

**SECTION 5: Firefighting measures**

**Flash point**
133 °C (271 °F)

**Autoignition temperature**
230 °C (446 °F)

**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.

**Hazardous decomposition products**
Carbon oxides. Sulfur oxides.

**SECTION 6: Accidental release measures**

**Personal precautions**
Use personal protective equipment. Ensure adequate
n-Dodecyl Mercaptan

SECTION 7: Handling and storage

Handling

Advice on safe handling : 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. To avoid spills during handling keep bottle on a metal tray. 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 : 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 Dusts and Mists. 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 workplace. Wear as appropriate: Remove and wash contaminated clothing before re-use. Skin should be washed after contact. 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**
- Physical state : Liquid
- Color : Colorless
- Odor : Repulsive

**Safety data**
- Flash point : 133 °C (271 °F)
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Oxidizing properties : no
- Autoignition temperature : 230 °C (446 °F)
- Molecular formula : C12H26S
- Molecular weight : 202.44 g/mol
- pH : Not applicable
- Pour point : No data available
- Boiling point/boiling range : 270 °C (518 °F)
n-Dodecyl Mercaptan

Vapor pressure : 0.00 mbar
at 25 °C (77 °F)

Relative density : No data available

Water solubility : 0.0054 mg/l
Method: OECD Test Guideline 105

Partition coefficient: n-octanol/water : No data available

Viscosity, dynamic : 2.98 cP
at 25 °C (77 °F)

Relative vapor density : 1
(Air = 1.0)

Evaporation rate : No data available

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

Conditions to avoid : Heat, sparks, fire, and oxidizing agents.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Oxidizing solids. Oxidizing liquids.

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-Dodecyl Mercaptan

LD50: > 5,000 mg/kg
Species: Rat
Sex: male

**Acute inhalation toxicity**

n-Dodecyl Mercaptan : > 3.10 mg/l
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.

**Skin irritation**

n-Dodecyl Mercaptan : Corrosive after 1 to 4 hours of exposure

**Eye irritation**

n-Dodecyl Mercaptan : Irreversible effects on the eye

**Sensitization**

n-Dodecyl Mercaptan : The product is a skin sensitizer, sub-category 1A.

**Repeated dose toxicity**

n-Dodecyl 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

Species: Dog
Application Route: Inhalation
Dose: 0, 0.44, 1.7, 7.7 ppm
Exposure time: 4 wk
NOEL: 1.7 ppm
Lowest observable effect level: 7.7 ppm

**Genotoxicity in vitro**

n-Dodecyl Mercaptan : Test Type: Ames test
Result: negative

Test Type: Sister Chromatid Exchange Assay
Result: negative

Test Type: Mouse lymphoma assay
Result: negative

**Genotoxicity in vivo**

SDS Number: 100000068622

7/13
# n-Dodecyl Mercaptan

**Test Type:** Mouse micronucleus assay  
Species: Mouse  
Dose: 1250, 2500, 5000 mg/kg

**Aspiration toxicity**  
May be harmful if swallowed and enters airways.

**CMR effects**

**Carcinogenicity:** Not available  
**Mutagenicity:** Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
**Teratogenicity:** Animal testing did not show any effects on fetal development.  
**Reproductive toxicity:** Animal testing did not show any effects on fertility.

**Further information**  
Solvents may degrease the skin.

## SECTION 12: Ecological information

**Toxicity to fish**  
n-Dodecyl Mercaptan  
LC50: > 100 mg/l  
Exposure time: 96 h  
Species: Oncorhynchus mykiss (rainbow trout)

**Toxicity to daphnia and other aquatic invertebrates**

n-Dodecyl Mercaptan  
EC50: 1 - 10 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 202

**Toxicity to algae**

n-Dodecyl Mercaptan  
EC50: 0.0145 mg/l  
Exposure time: 72 h  
Species: Pseudokirchneriella subcapitata (green algae)  
Growth inhibition Method: OECD Test Guideline 201

**Biodegradability**

n-Dodecyl Mercaptan  
Result: Not readily biodegradable.  
Method: OECD Test Guideline 301  
Information given is based on data obtained from similar substances.

**Bioaccumulation**
**n-Dodecyl Mercaptan**

**Bioconcentration factor (BCF):** 234
Method: Estimated based on individual component values.

**Additional ecological information**

**Ecotoxicology Assessment**

**Short-term (acute) aquatic hazard**

n-Dodecyl Mercaptan: Very toxic to aquatic life.

**Long-term (chronic) aquatic hazard**

n-Dodecyl 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.

**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-DODECYL MERCAPTAN), 8, III

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

UN1760, CORROSIVE LIQUID, N.O.S., (N-DODECYL MERCAPTAN), 8, III, (133 °C), MARINE POLLUTANT, (N-DODECYL MERCAPTAN)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

UN1760, CORROSIVE LIQUID, N.O.S., (N-DODECYL MERCAPTAN), 8, III
n-Dodecyl Mercaptan

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

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

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE
OF DANGEROUS GOODS BY INLAND WATERWAYS)
 UN1760, CORROSIVE LIQUID, N.O.S., (N-DODECYL MERCAPTAN), 8, III,
 ENVIRONMENTALLY HAZARDOUS, (N-DODECYL MERCAPTAN)

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

Other information : n- Dodecyl Mercaptan, S.T. 1, Cat. X

SECTION 15: Regulatory information

National legislation
 Poisonous and Deleterious Substances Control Law
 : Not applicable

Industrial Safety and Health Law
 Substances Subject to be Notified Names
 : Not applicable
 Enforcement Order of the Industrial Safety and Health Law - Attached table 1
 (Dangerous Substances)
 Harmful Substances Required Permission for Manufacture
 : Not applicable
 Hazardous Substances Subject to Labeling Requirements
 : Not applicable
 Ordinance on Prevention of Organic Solvent Poisoning
 : Not applicable
 Ordinance on Prevention of Lead Poisoning
 : Not applicable
 Harmful Substances Prohibited from Manufacture
 : Not applicable
 Ordinance on Prevention of Hazards Due to Specified Chemical Substances
 : Not applicable
 Ordinance on Prevention of
 : Not applicable
n-Dodecyl Mercaptan

Tetraalkyl Lead Poisoning : Not applicable

Substances Prevented From Impairment of Health : Not applicable

Chemical Substance Control Law : Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof : Not applicable

Other regulations

Fire Service Law : Flammable liquids
Type 3 petroleums
Hazardous rank III

High Pressure Gas Safety Act : Not applicable

Explosive Control Law : Not applicable

Vessel Safety Law : Corrosive substances (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law : Corrosive substances (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

Notification status

Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.

Switzerland CH INV : On the inventory, or in compliance with the inventory

United States of America (USA) TSCA : On TSCA Inventory

Canada DSL : All components of this product are on the Canadian DSL

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 : All substances in this product were registered, notified to be registered, or exempted from registration by CPChem through an Only Representative according to K-REACH regulations. Importation of this product is permitted if the Korean Importer of Record was included on CPChem’s notifications or if the Importer of Record themselves notified the substances.
n-Dodecyl Mercaptan

SECTION 16: Other information

Further information
Legacy SDS Number : 460130

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 Speciality 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 |
| IG50                          | 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 |
| UVGB                          | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <=                            | Less Than or Equal To |
| WHMIS                         | Workplace Hazardous Materials Information System |

SDS Number: 100000068622

12/13
## n-Dodecyl Mercaptan

**Version 3.10**

**Revision Date 2019-10-24**

<table>
<thead>
<tr>
<th>LC50</th>
<th>Lethal Concentration 50%</th>
</tr>
</thead>
</table>

SDS Number:100000068622