SAFETY DATA SHEET

Synfluid® PAO 2.5 cSt
Version 1.5
Revision Date 2018-01-03

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

Product information
Product Name: Synfluid® PAO 2.5 cSt
Material: 1079862, 1079691

Use: Synthetic Lubricants

Company: Chevron Phillips Chemical Company LP
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 (telex)
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
Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2013-37) (GHS 2009)

Classification

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: Acute toxicity, Category 4, Inhalation
Aspiration hazard, Category 1

Labeling

Symbol(s): 

Signal Word: Danger

Hazard Statements: H304: May be fatal if swallowed and enters airways.
H332: Harmful if inhaled.

Precautionary Statements:

Prevention:
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P271: Use only outdoors or in a well-ventilated area.

Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304 + P340 + P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P331: Do NOT induce vomiting.

Storage:
P405: Store locked up.

Disposal:
P501: Dispose of contents and container (according to the description in the related regulation).

SECTION 3: Composition/information on ingredients

Synonyms: Polyalphaolefin

Molecular formula: UVCB

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
<th>KECl Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Dodecene, Dimer Hydrogenated</td>
<td>151006-61-0</td>
<td>100%</td>
<td></td>
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</tbody>
</table>

SECTION 4: First aid measures

General advice: Move out of dangerous area. 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: Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.

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. 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: 186 °C (367 °F)  
Method: Cleveland Open Cup

Autoignition temperature: 324 °C (615 °F)

Unsuitable extinguishing media: High volume water jet.

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

Further information: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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

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: Avoid formation of aerosol. Do not breathe vapors/dust. 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: Normal measures for preventive fire protection.

Storage
Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place. 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. Tightly fitting safety goggles.

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: Protective suit. Safety shoes.

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: Clear, colorless
Odor: Odorless

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Safety data
Flash point : 186 °C (367 °F)
Method: Cleveland Open Cup
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Oxidizing properties : no
Autoignition temperature : 324 °C (615 °F)
Molecular formula : UVCB
Molecular weight : Varies
pH : Not applicable
Freezing point : -52 °C (-62 °F)
Boiling point/boiling range : 277 °C (531 °F)
Vapor pressure : 1.00 MMHG
at 150 °C (302 °F)
Relative density : 0.81
at 15.6 °C (60.1 °F)
Density : 806.8 g/l
Water solubility : Soluble in hydrocarbon solvents; insoluble in water.
Partition coefficient: n-octanol/water : log Pow: > 4.82
at 21 °C (70 °F)
Viscosity, kinematic : 8.3 cSt
at 40 °C (104 °F)
Relative vapor density : 10
(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 : No data available.
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SECTION 11: Toxicological information

**Acute oral toxicity**
1-Dodecene, Dimer Hydrogenated

LD50 Oral: > 5,000 mg/kg
Species: Rat
Test substance: yes

**Acute inhalation toxicity**
1-Dodecene, Dimer Hydrogenated

LC50: 1.71 mg/l
Exposure time: 4 h
Species: Rat
Sex: female
Test atmosphere: dust/mist
Test substance: yes

LC50: > 5.06 mg/l
Exposure time: 4 h
Species: Rat
Sex: male
Test atmosphere: dust/mist
Test substance: yes

**Acute dermal toxicity**
1-Dodecene, Dimer Hydrogenated

LD50 Dermal: >2000 milligram per kilogram
Species: Rat
Test substance: yes

**Skin irritation**
1-Dodecene, Dimer Hydrogenated

No skin irritation

**Eye irritation**
1-Dodecene, Dimer Hydrogenated

No eye irritation

**Sensitization**
1-Dodecene, Dimer Hydrogenated

Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**
1-Dodecene, Dimer Hydrogenated

Species: Rat
Application Route: oral gavage
Dose: 0 up to 1000 mg/kg
Exposure time: 28 day
Number of exposures: daily
NOEL: 1,000 mg/kg
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Aspiration toxicity

1-Dodecene, Dimer Hydrogenated: May be fatal if swallowed and enters airways.

Synfluid® PAO 2.5 cSt Further information: Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish

1-Dodecene, Dimer Hydrogenated: LL50: > 1,000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Test substance: yes
The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to daphnia and other aquatic invertebrates

1-Dodecene, Dimer Hydrogenated: EL50: > 1,000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Test substance: yes
The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to algae

1-Dodecene, Dimer Hydrogenated: EbC50: > 1,000 mg/l
Exposure time: 96 h
Species: Selenastrum capricornutum (algae)
Test substance: yes
The product has low solubility in the test medium. An aqueous dispersion was tested.

Biodegradability

1-Dodecene, Dimer Hydrogenated: Expected to be inherently biodegradable.

Ecotoxicology Assessment

Additional ecological information: No data available

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.
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</table>

**Product**: Do not dispose of waste into sewer. 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)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

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

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.

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Chemical name</th>
<th>Threshold limits</th>
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<tbody>
<tr>
<td>Harmful Substances Prohibited from Manufacturing</td>
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<tr>
<td>Harmful Substances Required Permission for Manufacture</td>
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Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

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<tr>
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<tr>
<td>Toxic Chemicals</td>
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<tr>
<td>Prohibited Chemicals</td>
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<tr>
<td>Observational chemicals</td>
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<tr>
<td>Restricted Chemicals</td>
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<tr>
<td>Toxic Release Inventory</td>
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</table>

Dangerous Substances Safety Management Act

Dangerous Substances : Flammable liquids, Type 3 petroleums, Water insoluble liquid
Safety Management Act

Notification status

Europe REACH : On the inventory, or in compliance with the inventory
Switzerland CH INV : Not 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
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

Further information

Legacy SDS Number : 5939

NSF H1, HX-1 Registered, meets USDA 1998 H1 Guidelines

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

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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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<tr>
<td><strong>ACGIH</strong></td>
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