SAFETY DATA SHEET

Synfluid® PAO 9 cSt
Version 1.10
Revision Date 2019-11-25

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

Product information
Product Name: Synfluid® PAO 9 cSt
Material: 1121045, 1079853, 1079714

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 (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
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

Specific target organ toxicity - single exposure, Category 1

Labeling

Symbol(s):

Signal Word: Danger

Hazard Statements: H370: Causes damage to organs.

Precautionary Statements:

Prevention:
P264: Wash the contact area thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.

Response:
P308 + P311: IF exposed or concerned: Call a POISON CENTER/doctor.

Storage:
P405: Store locked up.

Disposal:
P501: Dispose of contents and container according to wastes control act.

SECTION 3: Composition/information on ingredients

Synonyms: Polyalphaolefin

PAO

Molecular formula: UVCB

SECTION 4: First aid measures

General advice: No hazards which require special first aid measures. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this material safety data sheet to the doctor in attendance.

If inhaled: Move to fresh air in case of accidental inhalation of vapors. Consult a physician after significant exposure.

In case of skin contact: Remove contaminated clothing. If irritation develops, get medical attention. Wash off immediately with plenty of water.

In case of eye contact: Flush eyes with water as a precaution. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed: If swallowed, DO NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an
## SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>246-271°C (475-520°F) Method: Cleveland Open Cup</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>351°C (664°F)</td>
</tr>
<tr>
<td>Suitable extinguishing media</td>
<td>Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.</td>
</tr>
<tr>
<td>Specific hazards during fire</td>
<td>Do not use a solid water stream as it may scatter and spread fire. Cool</td>
</tr>
<tr>
<td>fighting</td>
<td>closed containers exposed to fire with water spray.</td>
</tr>
<tr>
<td>Special protective equipment for</td>
<td>In the event of fire, wear self-contained breathing apparatus.</td>
</tr>
<tr>
<td>fire-fighters</td>
<td></td>
</tr>
<tr>
<td>Further information</td>
<td>Standard procedure for chemical fires. Use extinguishing measures that</td>
</tr>
<tr>
<td></td>
<td>are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>Fire and explosion protection</td>
<td>Normal measures for preventive fire protection.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Carbon oxides.</td>
</tr>
</tbody>
</table>

## SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal precautions</td>
<td>Use personal protective equipment. Ensure adequate ventilation. Evacuate</td>
</tr>
<tr>
<td></td>
<td>personnel to safe areas. Material can create slippery conditions.</td>
</tr>
<tr>
<td>Environmental precautions</td>
<td>No special environmental precautions required.</td>
</tr>
<tr>
<td>Methods for cleaning up</td>
<td>Keep in suitable, closed containers for disposal. Clean contaminated floors</td>
</tr>
<tr>
<td></td>
<td>and objects thoroughly while observing environmental regulations.</td>
</tr>
<tr>
<td>Additional advice</td>
<td>No conditions to be specially mentioned.</td>
</tr>
</tbody>
</table>

## SECTION 7: Handling and storage

### Handling

#### Advice on safe handling
Do not breathe vapors/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. 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.

Use: Synthetic Lubricants

SECTION 8: Exposure controls/personal protection

Engineering measures

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. In the case of vapor formation use a respirator with an approved filter.

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.: Lightweight protective clothing.

Hygiene measures: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

Protective measures: Wear suitable protective equipment. When using do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form: Liquid
Synfluid® PAO 9 cSt

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Physical state: Liquid
Color: Colorless
Odor: Odorless

Safety data
Flash point: 246-271°C (475-520°F)
Method: Cleveland Open Cup
Lower explosion limit: No data available
Upper explosion limit: No data available
Oxidizing properties: no
Autoignition temperature: 351°C (664°F)
Molecular formula: UVCB
Molecular weight: Not applicable
pH: Not applicable
Pour point: < -30°C (< -22°F)
Boiling point/boiling range: > 260°C (> 500°F)
Vapor pressure: No data available
Density: 6.87 - 6.96 L/G
Water solubility: Soluble in hydrocarbon solvents; insoluble in water.
Viscosity, kinematic: 53 cSt
at 40°C (104°F)
Method: ASTM D 445
Relative vapor density: No data available
Evaporation rate: No data available

SECTION 10: Stability and reactivity

Reactivity: Stable at normal ambient temperature and pressure.

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

Possibility of hazardous reactions

SDS Number: 100000014080  5/11
<table>
<thead>
<tr>
<th>Hazardous reactions</th>
<th>Hazardous reactions: No dangerous reaction known under conditions of normal use.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hazardous reactions: Hazardous polymerization does not occur.</td>
</tr>
<tr>
<td></td>
<td>Further information: No decomposition if stored and applied as directed.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>No data available.</td>
</tr>
<tr>
<td>Materials to avoid</td>
<td>May react with oxygen and strong oxidizing agents, such as chlorates, nitrates,</td>
</tr>
<tr>
<td></td>
<td>peroxides, etc.</td>
</tr>
<tr>
<td>Hazardous decomposition</td>
<td>Carbon oxides</td>
</tr>
<tr>
<td>products</td>
<td></td>
</tr>
<tr>
<td>Other data</td>
<td>No decomposition if stored and applied as directed.</td>
</tr>
</tbody>
</table>

**SECTION 11: Toxicological information**

**Synfluid® PAO 9 cSt**

**Acute oral toxicity**

LD50: > 5,000 mg/kg  
Species: Rat  
Information given is based on data obtained from similar substances.

**Acute inhalation toxicity**

LC50: > 5 mg/l  
Exposure time: 4 h  
Species: Rat  
Test atmosphere: dust/mist  
Information given is based on data obtained from similar substances.

**Acute dermal toxicity**

LD50: > 2,000 mg/kg  
Species: Rat  
Information given is based on data obtained from similar substances.

**Skin irritation**

No skin irritation  
Information given is based on data obtained from similar substances.

**Eye irritation**

No eye irritation  
Information given is based on data obtained from similar substances.

**Sensitization**

Did not cause sensitization on laboratory animals.  
Information given is based on data obtained from similar substances.
### Synfluid® PAO 9 cSt

#### Repeated dose toxicity

**Species:** Rat, Male and female  
**Sex:** Male and female  
**Application Route:** oral gavage  
**Dose:** 0, 1000 mg/kg/day  
**Exposure time:** 28 days  
**NOEL:** 1,000 mg/kg  
**Method:** OECD Test Guideline 407  
Information given is based on data obtained from similar substances.

#### Genotoxicity in vitro

- **Test Type:** Ames test  
  **Result:** negative  
  **Remarks:** Information refers to the main ingredient.

- **Test Type:** Chromosome aberration test in vitro  
  **Result:** negative  
  **Remarks:** Information refers to the main ingredient.

#### Genotoxicity in vivo

- **Test Type:** Mouse micronucleus assay  
  **Result:** negative  
  **Remarks:** Information refers to the main ingredient.

#### Aspiration toxicity

- **Toxicology Assessment:** No aspiration toxicity classification.

#### CMR effects

- **Carcinogenicity:** Not classifiable as a human carcinogen.  
- **Mutagenicity:** Animal testing did not show any mutagenic effects.  
- **Teratogenicity:** Did not show teratogenic effects in animal experiments.  
- **Reproductive toxicity:** No toxicity to reproduction

### SECTION 12: Ecological information

#### Ecotoxicity effects

- **Toxicity to fish:** LL50: > 1,000 mg/l  
  **Exposure time:** 96 h  
  **Species:** Oncorhynchus mykiss (rainbow trout)  
  **static test Test substance:** no  
  **Method:** OECD Test Guideline 203  
  Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates:
- EL50: > 1,000 mg/l
- Exposure time: 48 h
- Species: Daphnia magna (Water flea)
- static test
- Test substance: no
- Method: OECD Test Guideline 202
- Information given is based on data obtained from similar substances.

Toxicity to algae:
- NOEC: > 1,000 mg/l
- Exposure time: 96 h
- Species: Selenastrum capricornutum (algae)
- Method: OECD Test Guideline 201
- Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOEC: 125 mg/l
- Exposure time: 21 d
- Species: Daphnia magna (Water flea)
- Test substance: no
- The product has low solubility in the test medium. An aqueous dispersion was tested.
- Information given is based on data obtained from similar substances.

Biodegradability:
- This material is not expected to be readily biodegradable.
- Expected to be ultimately biodegradable

Elimination information (persistence and degradability):
- Mobility: No data available

Ecotoxicology Assessment:
- Short-term (acute) aquatic hazard: This material is not expected to be harmful to aquatic organisms.
- Long-term (chronic) aquatic hazard: This material is not expected to be harmful to aquatic organisms.

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:
- Dispose of wastes in an approved waste disposal facility.

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

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</th>
</tr>
</thead>
</table>

SDS Number:100000014080 9/11
Harmful Substances Prohibited from Manufacturing: Not relevant
Harmful Substances Required Permission for Manufacture: Not relevant

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Chemical name</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Chemicals</td>
<td>Not relevant</td>
<td></td>
</tr>
<tr>
<td>Prohibited Chemicals</td>
<td>Not relevant</td>
<td></td>
</tr>
<tr>
<td>Observational chemicals</td>
<td>Not relevant</td>
<td></td>
</tr>
<tr>
<td>Restricted Chemicals</td>
<td>Not relevant</td>
<td></td>
</tr>
<tr>
<td>Toxic Release Inventory</td>
<td>Not relevant</td>
<td></td>
</tr>
</tbody>
</table>

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

**Dangerous Substances Safety Management Act**
Dangerous Substances: Not relevant
Safety Management Act

**Notification status**
- **Europe** (REACH): This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).
- **Switzerland** (CH INV): Not in compliance with the inventory
- **United States of America (USA)** (TSCA): On or in compliance with the active portion of the 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.
- **Philippines** (PICCS): On the inventory, or in compliance with the inventory
- **China** (IECSC): On the inventory, or in compliance with the inventory
- **Taiwan** (TCSI): On the inventory, or in compliance with the inventory

**SECTION 16: Other information**

**Further information**
Legacy SDS Number: 5653

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 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>Acronym</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 50%</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</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>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</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>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</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>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
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<tr>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
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<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>TLA</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
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<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>
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</tbody>
</table>