

**Synfluid® mPAO 100 cSt**

Version 2.7

Revision Date 2024-06-13

MSDS number: AA00974-0000000151

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

Product Name : Synfluid® mPAO 100 cSt
Material : 1116564, 1106295, 1106303

Recommended use of the product : Lubricants and lubricant additives
Restrictions on use : None known.

Address : Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Address : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
C/O DONG WOO CORPORATION
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BUNDANG-GU, SEONGNAMI-SI,
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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

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

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)

Belgium: 070 245 245 (24 hours/day, 7 days/week)

Bulgaria: +359 2 9154 233

Croatia: +3851 2348 342 (24 hours/day, 7 days/week)

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Cyprus: 1401
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
 Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Finland: 0800 147 111 09 471 977 (24 hours/day)
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
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 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Italy: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726; POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Lithuania: +370 (85) 2362052
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
 Malta: +356 2395 2000
 The Netherlands: NVIC: +31 (0)88 755 8000
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Portugal: CIAV phone number: +351 800 250 250
 Romania: +40213183606
 Slovakia: +421 2 5477 4166
 Slovenia: Phone number: 112
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group

E-mail address : SDS@CPChem.com

Website : www.CPChem.com

Appointees : 회사명: 리이치24시코리아(주).

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전화: +82-02-6245-1610

SECTION 2: Hazards identification**Hazard classification**

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Standards for classification and labeling of chemical substances and material safety data sheet
(ministry of employment and labor public notice No. 2023-9)

Classification

Not a hazardous substance or mixture.

Warning label elements including precautionary statements

Not a hazardous substance or mixture.

Other hazards which do : None
not result in classification

SECTION 3: Composition/information on ingredients

Synonyms : Polyalphaolefin; PAO

Molecular formula : Polymer

| Common name | Synonyms | CAS-No. | Concentration | KECI Number |
|------------------------------------|-------------------------------------|------------|---------------|-------------|
| 1-Octene Homopolymer, Hydrogenated | 1-Octene, homopolymer, hydrogenated | 70693-43-5 | 100% | |

SECTION 4: First aid measures

General advice : No hazards which require special first aid measures.

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.

In case of skin contact : Wash off with soap and water. Wash contaminated clothing before re-use.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

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If swallowed : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Other cautions for Doctors

Symptoms : No information available.

Risks : No information available.

Treatment : No information available.

SECTION 5: Firefighting measures

Flash point : 255°C (491°F)

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Exposure to decomposition products may be a hazard to health.

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.

Hazardous decomposition products : Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions : Material can create slippery conditions.

Environmental precautions : Clean contaminated floors and objects thoroughly while observing environmental regulations.

Methods for cleaning up : Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

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Advice on safe handling : 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.

Secure storage

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

Uses advised against : None known.

Specific Use : Lubricants and lubricant additives

SECTION 8: Exposure controls/personal protection**Chemical exposure standards, biological exposure standards, etc.**

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 : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.

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.

Skin and body protection : Choose body protection according to the amount and concentration of the substance and the task performed at the work place. Appropriate PPE may include:.. Lightweight

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protective clothing.

Hygiene measures : General industrial hygiene practice. Prevent vapor buildup by providing adequate ventilation during and after use.
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, light
Odor : No data available
Odor Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Freezing point -44°C (-47°F)

Boiling point/boiling range : >250°C (>482°F)

Flash point : 255°C (491°F)

Ignition temperature : 310°C (590°F)

Flammability (solid, gas) : No data available

Lower explosion limit : No data available

Upper explosion limit : No data available

Solubility : Soluble in hydrocarbon solvents; insoluble in water.

Density : 0.84 g/cm³

Decomposition temperature : No data available

Viscosity, kinematic : 1014 cSt
at 40°C (104°F)

Molecular weight : Varies

SECTION 10: Stability and reactivity

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| | |
|---|--|
| 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 | |
| Hazardous reactions | : Further information: No decomposition if stored and applied as directed. |
| Conditions to avoid | : No data available. |
| Materials to avoid | : No data available. |
| Thermal decomposition | : No data available |
| Hazardous decomposition products | : Carbon oxides |
| Other data | : No decomposition if stored and applied as directed. |

SECTION 11: Toxicological information**Information on exposure routes****Synfluid® mPAO 100 cSt**

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

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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.

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

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Skin corrosion or irritation : No skin irritation

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Information given is based on data obtained from similar substances.

**Synfluid® mPAO 100 cSt
Eye corrosion or irritation**

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

**Synfluid® mPAO 100 cSt
Skin sensitization**

Did not cause sensitization on laboratory animals.

**Synfluid® mPAO 100 cSt
Germ cell mutagenicity (in vitro)**

: Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative

**Synfluid® mPAO 100 cSt
Germ cell mutagenicity (in vivo)**

: Remarks: Not classified due to data which are conclusive although insufficient for classification., Information given is based on data obtained from similar substances.

**Specific Target Organ
Toxicity (Single Exposure)**

Not classified due to data which are conclusive although insufficient for classification.
Not classified due to data which are conclusive although insufficient for classification., Based on data from similar materials

**Specific Target Organ
Toxicity (Repeated Exposure)**

Not classified due to data which are conclusive although insufficient for classification., Based on data from similar materials

**Synfluid® mPAO 100 cSt
Aspiration toxicity
Toxicology Assessment**

: No aspiration toxicity classification.

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CMR effects : Carcinogenicity:
Not available
Mutagenicity:
Weight of evidence does not support classification as a germ cell mutagen.
Teratogenicity:
Not available
Reproductive toxicity:
No toxicity to reproduction, Based on data from similar materials

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Further information : No data available.

SECTION 12: Ecological information

Ecological Toxicity

Toxicity to fish : This material is not expected to be harmful to aquatic organisms.
Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : This material is not expected to be harmful to aquatic organisms.
Information given is based on data obtained from similar substances.

Toxicity to algae : This material is not expected to be harmful to aquatic organisms.
Information given is based on data obtained from similar substances.

Persistence and degradability : This material is not expected to be readily biodegradable.
Persistence and degradability

Mobility : No data available

Other adverse effects : 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.

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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.

Disposal method : 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.

Disposal precaution : 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.

| | | |
|--|---|-----------------------------------|
| UN Number | : | not regulated |
| UN Product Shipping Name | : | Not regulated as a dangerous good |
| Hazard Class | : | |
| Packing Group | : | Not applicable |
| Marine Pollutant | : | Not applicable |
| Special Safety Measures on Mode of Transport | : | No data available |

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

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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.

| | | |
|-------------------|---|----------------|
| Other information | : | Not applicable |
|-------------------|---|----------------|

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information**National legislation**

Regulation under the Occupational Safety and Health Act

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A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

| Regulation | Chemical name | Threshold limits |
|--|---------------|------------------|
| Harmful Substances Prohibited from Manufacturing | : | Not applicable |
| Harmful Substances Required Permission for Manufacture | : | Not applicable |

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

| Regulation | Chemical name | Threshold limits |
|-------------------------|---------------|------------------|
| Toxic Chemicals | : | Not applicable |
| Prohibited Chemicals | : | Not applicable |
| Restricted Chemicals | : | Not applicable |
| Toxic Release Inventory | : | Not applicable |

Dangerous Substances Safety Management Act

Dangerous Substances : Not Applicable to Dangerous Materials
Safety Management Act

Regulations by the Waste Management Act : 1-Octene: Designated Waste

Regulations by other domestic and foreign laws

Europe REACH : This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).

Switzerland CH INV : On the inventory, or 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 AIIC : 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

Philippines PICCS : 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.

China IECSC : On the inventory, or in compliance with the inventory, or has been registered as new substance

Taiwan TCSI : Not in compliance with the inventory

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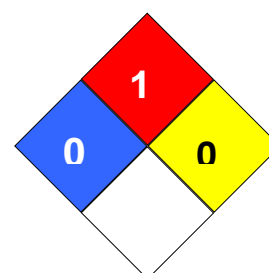
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Other regulations : No data available**SECTION 16: Other information**

| | | |
|-------------------------|---|---------------------------------|
| Source of data | : | Korea. GHS based classification |
| Date of initial writing | : | 2019-11-04 |
| Revision number | : | 1 |
| Last revision date | : | 2023-10-25 |

NFPA Classification : Health Hazard: 0
 Fire Hazard: 1
 Reactivity Hazard: 0

**Other information**

None.

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% |
| AIIC | Australian Inventory of Industrial Chemicals | 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 |

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|--------|--|-------|--|
| 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 Specialty 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 |
| IC50 | 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 | UVCB | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System |
| LC50 | Lethal Concentration 50% | ATE | Acute toxicity estimate |