

**Synfluid® PAO 5 cSt**

Version 1.9

Revision Date 2018-05-30

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

Product Name : Synfluid® PAO 5 cSt  
 Material : 1070387, 1070389, 1073196, 1079665, 1079929, 1079873

**EC-No.Registration number**

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
1-Dodecene, Trimer, Hydrogenated	151006-62-1 417-070-7 601-064-00-8	Chevron Phillips Chemical Company LP 01-0000016388-62-0004
1-Dodecene, Homopolymer, Hydrogenated	151006-63-2	Chevron Phillips Chemical Company LP 01-0000018318-67-0002

Relevant Identified Uses Supported : Formulation  
 Lubricants - Industrial  
 Lubricants - Professional  
 Lubricants - Consumer  
 Metal working fluids / rolling oils - Industrial  
 Metal working fluids / rolling oils – Professional  
 Functional Fluids - Industrial  
 Functional Fluids - Professional  
 Functional Fluids - Consumer

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

Local : Chevron Phillips Chemicals International N.V.  
 Airport Plaza (Stockholm Building)  
 Leonardo Da Vincilaan 19  
 1831 Diegem  
 Belgium

SDS Requests: (800) 852-5530  
 Technical Information: (832) 813-4862  
 Responsible Party: Product Safety Group  
 Email:sds@cpchem.com

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**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****REGULATION (EC) No 1272/2008**

Chronic aquatic toxicity, Category 4

H413:

May cause long lasting harmful effects to aquatic life.

**Label elements****Labeling (REGULATION (EC) No 1272/2008)**

Hazard Statements : H413 May cause long lasting harmful effects to aquatic life.

Precautionary Statements : **Prevention:**  
P273 Avoid release to the environment.**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.**Additional Labeling:**

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 0 %

**SECTION 3: Composition/information on ingredients**Synonyms : SYNTHETIC HYDROCARBON BASE OIL  
OL6705  
Polyalphaolefin  
R6529  
PAO

Molecular formula : UVCB

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**Hazardous ingredients**

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]
1-Dodecene, Trimer, Hydrogenated	151006-62-1 417-070-7 601-064-00-8	Aquatic Chronic 4; H413	50 - 80

For the full text of the H-Statements mentioned in this Section, see Section 16.

**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 unconscious person. Consult a physician if necessary.

**SECTION 5: Firefighting measures**

- Flash point : 246 - 271 °C (475 - 520 °F)  
Method: Cleveland Open Cup
- Autoignition temperature : 351 °C (664 °F)
- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Specific hazards during fire fighting : Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- 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.

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Hazardous decomposition : Carbon oxides.  
products

**SECTION 6: Accidental release measures**

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.

Environmental precautions : No special environmental precautions required.

Methods for cleaning up : Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly while observing environmental regulations.

Additional advice : No conditions to be specially mentioned.  
A quantitative risk assessment is not required for human health.

**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. 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. Electrical installations / working materials must comply with the technological safety standards.

**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**

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- 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.
- 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.

A quantitative risk assessment is not required for human health.

**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

- Form : Liquid  
 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 : < -40 °C (< -40 °F)

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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	: 24,7 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**

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

Conditions to avoid	: No data available.
Materials to avoid	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous decomposition products	: Carbon oxides
Other data	: No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information**

<b>Synfluid® PAO 5 cSt</b> <b>Acute oral toxicity</b>	: LD50: > 5.000 mg/kg Species: Rat Information given is based on data obtained from similar substances.
<b>Synfluid® PAO 5 cSt</b> <b>Acute inhalation toxicity</b>	: 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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- Synfluid® PAO 5 cSt**  
**Acute dermal toxicity** : LD50: > 2.000 mg/kg  
Species: Rat  
Information given is based on data obtained from similar substances.
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**Skin irritation** : No skin irritation  
Information given is based on data obtained from similar substances.
- Synfluid® PAO 5 cSt**  
**Eye irritation** : No eye irritation  
Information given is based on data obtained from similar substances.
- Synfluid® PAO 5 cSt**  
**Sensitization** : Did not cause sensitization on laboratory animals.  
Information given is based on data obtained from similar substances.
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**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.
- Synfluid® PAO 5 cSt**  
**Aspiration toxicity** : No aspiration toxicity classification.  
**Toxicology Assessment**
- Synfluid® PAO 5 cSt**  
**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

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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.

Elimination information (persistence and degradability)

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

**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.

A quantitative risk assessment is not required for human health.

**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).**



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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****Chemical Safety Assessment**

**Ingredients** : 1-Dodecene,  
Trimer,  
Hydrogenated

**Chemical Safety Assessment**

1-Dodecene,  
Homopolymer,  
Hydrogenated

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**Major Accident Hazard Legislation** : 96/82/EC Update: 2003  
Directive 96/82/EC does not apply

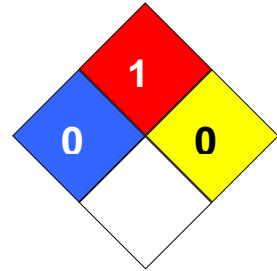
**Water contaminating class (Germany)** : WGK 1 slightly water endangering

**Notification status**

Europe REACH : This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).  
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 : On the inventory, or 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: 0  
Fire Hazard: 1  
Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 5940

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**

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	NFPA	National Fire Protection Agency

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	List		
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 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%		

**Full text of H-Statements referred to under sections 2 and 3.**

H413                                      May cause long lasting harmful effects to aquatic life.

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**Annex****Exposure Scenario**

Number	Title
ES1	; Formulation; Industrial uses (SU3).
ES2	; Lubricants - Industrial; Industrial uses (SU3).
ES3	; Lubricants - Professional; Professional uses (SU22).
ES4	; Lubricants - Consumer; Consumer uses (SU21).
ES5	; Metal working fluids / rolling oils - Industrial; Industrial uses (SU3).
ES6	; Metal working fluids / rolling oils - Industrial; Professional uses (SU22).
ES7	; Functional Fluids - Industrial; Industrial uses (SU3).
ES8	; Functional Fluids - Professional; Professional uses (SU22).
ES9	; Functional Fluids - Consumer; Consumer uses (SU21).

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**ES1: Formulation****1.1. Title section****Structured Short Title** : ; Formulation; Industrial uses (SU3).**Substance** : 1-Dodecene trimer, hydrogenated  
EC-No.: 417-070-7**Environment****CS1** Formulation

ERC2

**1.2. Conditions of use affecting exposure****1.2.1. Control of environmental exposure: Formulation into mixture (ERC2)****Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type : Continuous release

Emission days : 300

**Technical and organisational conditions and measures**

Try to prevent the material from entering drains or water courses.  
 Provide onsite wastewater treatment.  
 Air - minimum efficiency of 0,001 %  
 Water - minimum efficiency of 0,01 %  
 Soil - minimum efficiency of 0,001 %

**Conditions and measures related to sewage treatment plant**

STP type : Municipal sewage treatment plant

STP sludge treatment : Controlled application of sewage sludge to agricultural soil

STP effluent : 2.000 m3/d

**Other conditions affecting environmental exposure**

Receiving surface water flow : 18.000 m3/d

Local freshwater dilution factor : 10

Local marine water dilution factor : 100

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**1.3. Exposure estimation and reference to its source****1.3.1. Environmental release and exposure: Formulation into mixture (ERC2)**

Compartment	Exposure level	RCR
Air	0,0000236 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	1,0 mg/kg wet weight (EUSES)	0,227

**1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES2: Lubricants - Industrial****2.1. Title section****Structured Short Title** : ; Lubricants - Industrial; Industrial uses (SU3).**Substance** : 1-Dodecene trimer, hydrogenated  
EC-No.: 417-070-7**Environment****CS1 Lubricants - Industrial** ERC4, ERC7,  
ERC8a,  
ERC8d,  
ERC9a,  
ERC9b**2.2. Conditions of use affecting exposure****2.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Use of functional fluid at industrial site (ERC7) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)****Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type : Continuous release

Emission days : 300

**Technical and organisational conditions and measures**Try to prevent the material from entering drains or water courses.  
Provide onsite wastewater treatment.  
Air - minimum efficiency of 0,003 %  
Water - minimum efficiency of 0,000 %  
Soil - minimum efficiency of 0,1 %**Conditions and measures related to sewage treatment plant**

STP type : Municipal sewage treatment plant

STP sludge treatment : Controlled application of sewage sludge to agricultural soil

STP effluent : 2.000 m3/d

**Other conditions affecting environmental exposure**

Receiving surface water flow : 18.000 m3/d



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Local freshwater dilution factor : 10

Local marine water dilution factor : 100

**2.3. Exposure estimation and reference to its source**

**2.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Use of functional fluid at industrial site (ERC7) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

Compartment	Exposure level	RCR
Air	0,0000044 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	0,08 mg/kg wet weight (EUSES)	0,018

**2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES3: Lubricants - Professional****3.1. Title section**

<b>Structured Short Title</b>	: ; Lubricants - Professional; Professional uses (SU22).
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<b>Substance</b>	: 1-Dodecene trimer, hydrogenated EC-No.: 417-070-7
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**Environment**

<b>CS1</b>	<b>Lubricants - Professional</b>	ERC4, ERC7, ERC8a, ERC8d, ERC9a, ERC9b
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**3.2. Conditions of use affecting exposure**

**3.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Use of functional fluid at industrial site (ERC7) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type	: Continuous release
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Emission days	: 25
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**Technical and organisational conditions and measures**

Try to prevent the material from entering drains or water courses.  
Provide onsite wastewater treatment.  
Air - minimum efficiency of 0,01 %  
Water - minimum efficiency of 0,25 %  
Soil - minimum efficiency of 0,25 %

**Conditions and measures related to sewage treatment plant**

STP type	: Municipal sewage treatment plant
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STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
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STP effluent	: 2.000 m3/d
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**Other conditions affecting environmental exposure**

Receiving surface water flow	: 18.000 m3/d
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Local freshwater dilution factor : 10

Local marine water dilution factor : 100

**3.3. Exposure estimation and reference to its source**

**3.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Use of functional fluid at industrial site (ERC7) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

Compartment	Exposure level	RCR
Air	0,0000044 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	0,08 mg/kg wet weight (EUSES)	0,841

**3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES4: Lubricants - Consumer****4.1. Title section**

<b>Structured Short Title</b>	: ; Lubricants - Consumer; Consumer uses (SU21).
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<b>Substance</b>	: 1-Dodecene trimer, hydrogenated EC-No.: 417-070-7
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**Environment**

<b>CS1</b>	<b>Lubricants - Consumer</b>	ERC4, ERC7, ERC8a, ERC8d, ERC9a, ERC9b
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**4.2. Conditions of use affecting exposure**

**4.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Use of functional fluid at industrial site (ERC7) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type : Continuous release

Emission days : 365

**Other conditions affecting environmental exposure**Receiving surface water flow : 18.000 m<sup>3</sup>/d

Local freshwater dilution factor : 10

Local marine water dilution factor : 100

**4.3. Exposure estimation and reference to its source**

**4.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Use of functional fluid at industrial site (ERC7) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

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**Additional information on exposure estimation**

Not applicable for wide dispersive uses.

**4.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES5: Metal working fluids / rolling oils - Industrial****5.1. Title section**

<b>Structured Short Title</b>	: ; Metal working fluids / rolling oils - Industrial; Industrial uses (SU3).
<b>Substance</b>	: 1-Dodecene trimer, hydrogenated <u>EC-No.:</u> 417-070-7

**Environment**

<b>CS1</b>	<b>Metal working fluids / rolling oils - Industrial</b>	ERC4, ERC8a, ERC8d, ERC9a, ERC9b
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**5.2. Conditions of use affecting exposure**

**5.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type : Continuous release

Emission days : 20

**Technical and organisational conditions and measures**

Try to prevent the material from entering drains or water courses.  
Provide onsite wastewater treatment.  
Air - minimum efficiency of 0,001 %  
Water - minimum efficiency of 0,000 %  
Soil - minimum efficiency of 0 %

**Conditions and measures related to sewage treatment plant**

STP type : Municipal sewage treatment plant

STP sludge treatment : Controlled application of sewage sludge to agricultural soil

STP effluent : 2.000 m3/d

**Other conditions affecting environmental exposure**

Receiving surface water flow : 18.000 m3/d

Local freshwater dilution factor : 10

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Local marine water dilution factor : 100

**5.3. Exposure estimation and reference to its source**

**5.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

Compartment	Exposure level	RCR
Air	0,000009 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	0,167 mg/kg wet weight (EUSES)	0,038

**5.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES6: Metal working fluids / rolling oils – Professional****6.1. Title section**

<b>Structured Short Title</b>	: ; Metal working fluids / rolling oils - Industrial; Professional uses (SU22).
<b>Substance</b>	: 1-Dodecene trimer, hydrogenated <u>EC-No.:</u> 417-070-7

**Environment**

<b>CS1</b>	<b>Metal working fluids / rolling oils - Industrial</b>	ERC4, ERC8a, ERC8d, ERC9a, ERC9b
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**6.2. Conditions of use affecting exposure**

**6.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type : Continuous release

Emission days : 365

**Technical and organisational conditions and measures**

Try to prevent the material from entering drains or water courses.  
Provide onsite wastewater treatment.  
Air - minimum efficiency of 0,01 %  
Water - minimum efficiency of 1,25 %  
Soil - minimum efficiency of 1,25 %

**Conditions and measures related to sewage treatment plant**

STP type : Municipal sewage treatment plant

STP sludge treatment : Controlled application of sewage sludge to agricultural soil

STP effluent : 2.000 m3/d

**Other conditions affecting environmental exposure**

Receiving surface water flow : 18.000 m3/d

Local freshwater dilution factor : 10



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Local marine water dilution factor : 100

**6.3. Exposure estimation and reference to its source**

**6.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4) / Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) (ERC8a) / Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) (ERC8d) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

Compartment	Exposure level	RCR
Air	0,0000005 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	0,076 mg/kg wet weight (EUSES)	0,017

**6.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES7: Functional Fluids - Industrial****7.1. Title section**

<b>Structured Short Title</b>	: ; Functional Fluids - Industrial; Industrial uses (SU3).
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<b>Substance</b>	: 1-Dodecene trimer, hydrogenated EC-No.: 417-070-7
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**Environment**

<b>CS1</b>	<b>Functional Fluids - Industrial</b>	ERC7, ERC9a, ERC9b
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**7.2. Conditions of use affecting exposure**

**7.2.1. Control of environmental exposure: Use of functional fluid at industrial site (ERC7) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.
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**Amount used, frequency and duration of use (or from service life)**

Release type	: Continuous release
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Emission days	: 20
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**Technical and organisational conditions and measures**

Try to prevent the material from entering drains or water courses.  
Provide onsite wastewater treatment.  
Air - minimum efficiency of 0,01 %  
Water - minimum efficiency of 0,000 %  
Soil - minimum efficiency of 0,1 %

**Conditions and measures related to sewage treatment plant**

STP type	: Municipal sewage treatment plant
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STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
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STP effluent	: 2.000 m3/d
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**Other conditions affecting environmental exposure**

Receiving surface water flow	: 18.000 m3/d
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Local freshwater dilution factor	: 10
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Local marine water dilution factor	: 100
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**7.3. Exposure estimation and reference to its source**

**7.3.1. Environmental release and exposure: Use of functional fluid at industrial site (ERC7) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

Compartment	Exposure level	RCR
Air	0,0000012 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	0,077 mg/kg wet weight (EUSES)	0,017

**7.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES8: Functional Fluids - Professional****8.1. Title section**

<b>Structured Short Title</b>	:	; Functional Fluids - Professional; Professional uses (SU22).
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<b>Substance</b>	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7
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**Environment**

<b>CS1</b>	<b>Functional Fluids - Professional</b>	ERC7, ERC9a, ERC9b
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**8.2. Conditions of use affecting exposure**

**8.2.1. Control of environmental exposure: Use of functional fluid at industrial site (ERC7) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type	:	Continuous release
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Emission days	:	365
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**Technical and organisational conditions and measures**

Try to prevent the material from entering drains or water courses.  
Provide onsite wastewater treatment.  
Air - minimum efficiency of 0,01 %  
Water - minimum efficiency of 0,625 %  
Soil - minimum efficiency of 0,625 %

**Conditions and measures related to sewage treatment plant**

STP type	:	Municipal sewage treatment plant
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STP sludge treatment	:	Controlled application of sewage sludge to agricultural soil
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STP effluent	:	2.000 m3/d
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**Other conditions affecting environmental exposure**

Receiving surface water flow	:	18.000 m3/d
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Local freshwater dilution factor	:	10
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Local marine water dilution factor	:	100
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**8.3. Exposure estimation and reference to its source**

**8.3.1. Environmental release and exposure: Use of functional fluid at industrial site (ERC7) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

Compartment	Exposure level	RCR
Air	0,0000005 mg/m <sup>3</sup> (EUSES)	
Freshwater	0,0000009 mg/l (EUSES)	0,000
Freshwater sediment	0,072 mg/kg wet weight (EUSES)	0,184
Sea water	0,0000002 mg/l (EUSES)	0,000
Sea sediment	0,018 mg/kg wet weight (EUSES)	0,462
Soil	0,072 mg/kg wet weight (EUSES)	0,016

**8.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable

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**ES9: Functional Fluids - Consumer****9.1. Title section**

<b>Structured Short Title</b>	: ; Functional Fluids - Consumer; Consumer uses (SU21).
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<b>Substance</b>	: 1-Dodecene trimer, hydrogenated EC-No.: 417-070-7
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**Environment**

<b>CS1</b>	<b>Lubricants - Consumer</b>	ERC7, ERC9a, ERC9b
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**9.2. Conditions of use affecting exposure**

**9.2.1. Control of environmental exposure: Use of functional fluid at industrial site (ERC7) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Product (article) characteristics**

Covers percentage substance in the product up to 100 %.

**Amount used, frequency and duration of use (or from service life)**

Release type	: Continuous release
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Emission days	: 365
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**Other conditions affecting environmental exposure**

Receiving surface water flow	: 18.000 m3/d
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Local freshwater dilution factor	: 10
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Local marine water dilution factor	: 100
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**9.3. Exposure estimation and reference to its source**

**9.3.1. Environmental release and exposure: Use of functional fluid at industrial site (ERC7) / Widespread use of functional fluid (indoor) (ERC9a) / Widespread use of functional fluid (outdoor) (ERC9b)**

**Additional information on exposure estimation**

Not applicable for wide dispersive uses.

**9.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES**

Not applicable