Synfluid® PAO 9 cSt

Version 1.17 Revision Date 2023-05-18

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2020/878

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

1.1 Product identifier

Product information

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

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	151006-63-2 438-390-3	Chevron Phillips Chemical Company LP 01-0000018318-67-0002

1.2 Relevant identified uses of the substance or mixture and uses advised against

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

1.3 Details of the supplier of the safety data sheet

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
Responsible Party: Product Safety Group
Email:sds@cpchem.com

1.4

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)
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)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
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

SECTION 2: Hazards identification

2.1

Classification of the substance or mixture
REGULATION (EC) No 1272/2008

Not a hazardous substance or mixture.

2.2

Labeling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.3

Other hazards

Results of PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 - 3.2
Substance or Mixture

Synonyms : PAO
Polyalphaolefin

Molecular formula : UVCB

Hazardous ingredients

Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]	Specific Conc. Limits, M-factors and ATEs
1-Dodecene, Trimer, Hydrogenated	151006-62-1 417-070-7 601-064-00-8		50 - 80	

SECTION 4: First aid measures

4.1

Description of first-aid measures

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

If inhaled : If unconscious, place in recovery position and seek medical

advice. If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses. Protect unharmed eye. 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.

4.2 Most important symptoms and effects, both acute and delayed
Notes to physician

Symptoms : No information available.

Risks : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

SECTION 5: Firefighting measures

Flash point : 246-271°C (475-520°F)
Method: Cleveland Open Cup

Autoignition temperature : 351°C (664°F)

5.1
Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2
Special hazards arising from the substance or mixture

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.

5.3
Advice for firefighters

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

6.1
Personal precautions, protective equipment and emergency procedures

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

create slippery conditions.

6.2

Environmental precautions

Environmental precautions : No special environmental precautions required.

6.3

Methods and materials for containment and cleaning up

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

6.4

Reference to other sections

Reference to other sections : For personal protection see section 8. For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1

Precautions for safe handling
Handling

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

7.2

Conditions for safe storage, including any incompatibilities

Storage

Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

7.3

Specific End Use

Use : For additional details, see the Exposure Scenario in the Annex portion

SECTION 8: Exposure controls/personal protection

8.2

Exposure controls
Engineering measures

Adequate ventilation to control airborned 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.
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 according to the amount and concentration of the substance and the task performed at the work place. Appropriate PPE may include:. Lightweight protective clothing.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

9.1

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)

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

10.1

Reactivity : Stable at normal ambient temperature and pressure.

10.2

Chemical stability : No decomposition if stored and applied as directed.

10.3

Possibility of hazardous reactions

Hazardous reactions : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

10.4

Conditions to avoid : No data available.

10.5

Materials to avoid : No data available.

10.6

Hazardous decomposition products : Carbon oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1

Information on toxicological effects

Synfluid® PAO 9 cSt

Acute oral toxicity : LD50: > 5.000 mg/kg
Species: Rat
Information given is based on data obtained from similar

substances.

Synfluid® PAO 9 cSt
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.

Synfluid® PAO 9 cSt
Acute dermal toxicity : LD50: > 2.000 mg/kg
Species: Rat
Information given is based on data obtained from similar substances.

Synfluid® PAO 9 cSt
Skin irritation : No skin irritation
Information given is based on data obtained from similar substances.

Synfluid® PAO 9 cSt
Eye irritation : No eye irritation
Information given is based on data obtained from similar substances.

Synfluid® PAO 9 cSt
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.

Synfluid® PAO 9 cSt
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.

Synfluid® PAO 9 cSt
Genotoxicity in vivo : Test Type: Mouse micronucleus assay
Result: negative
Remarks: Information refers to the main ingredient.

Synfluid® PAO 9 cSt
Reproductive toxicity : Animal testing did not show any effects on fertility.
Information given is based on data obtained from similar substances.

Synfluid® PAO 9 cSt
Developmental Toxicity : Animal testing did not show any effects on fetal development.
Information given is based on data obtained from similar substances.

Synfluid® PAO 9 cSt
Aspiration toxicity : No aspiration toxicity classification.
Toxicology Assessment

Synfluid® PAO 9 cSt
Specific Target Organ Toxicity (Single Exposure) : Remarks: Not classified due to data which are conclusive although insufficient for classification. :

Synfluid® PAO 9 cSt
Specific Target Organ Toxicity (Repeated Exposure) : Remarks: Not classified due to data which are conclusive although insufficient for classification. :

Synfluid® PAO 9 cSt
CMR effects : Carcinogenicity:
Contains no ingredient listed as a 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

11.2
Information on other hazards

Synfluid® PAO 9 cSt
Further information : No data available.
Endocrine disrupting properties : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1
Toxicity

Ecotoxicity effects
Toxicity to fish

1-Dodecene, Trimer, Hydrogenated	:	LC50: > 1.000 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to daphnia and other aquatic invertebrates

1-Dodecene, Trimer, Hydrogenated	:	EC50: > 1.000 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to algae

1-Dodecene, Trimer, Hydrogenated	:	EC50: > 1.000 mg/l Species: Selenastrum capricornutum (algae) The product has low solubility in the test medium. An aqueous dispersion was tested.

12.2
Persistence and degradability

Biodegradability	:	Result: Expected to be inherently biodegradable.

12.3
Bioaccumulative potential
Elimination information (persistence and degradability)

Bioaccumulation	:	This material is not expected to bioaccumulate.

12.4
Mobility in soil

Mobility	:	No data available

12.5
Results of PBT and vPvB assessment

Results of PBT assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6
Endocrine disrupting properties

Endocrine disrupting properties	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7
Other adverse effects

Additional ecological information : No data available

12.8

Additional Information

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

13.1

Waste treatment methods

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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 - 14.7

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.

Other information	**:**	**Polyolefin (molecular weight 300+), S.T. 2, Cat.Y**

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

15.1

Safety, health and environmental regulations/legislation specific for the substance or mixture
National legislation

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Water hazard class (Germany) : WGK 1 slightly water endangering
Classification according VwVwS, Annex 2.

15.2

Chemical Safety Assessment

Components : 1-Decene, Trimer, Hydrogenated

Chemical Safety Assessment

1-Decene, Homopolymer, Hydrogenated

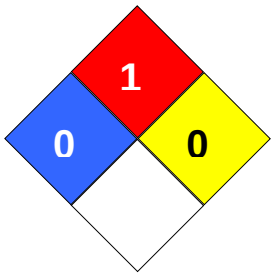
Major Accident Hazard Legislation : ZEU_SEVES3 Update:
Not applicable

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

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
Other 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

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



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			
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
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

Annex: Exposure Scenarios

Table of Contents

ES 1: Formulation; Industrial uses (SU3).

1.1. Title section

Exposure Scenario name	:	Formulation
Structured Short Title	:	Formulation; Industrial uses (SU3).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**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 (or contained in articles), frequency and duration of use/exposure		
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

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Protection Target	Exposure estimate	RCR
Air	0,0000236 mg/m³ (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

ES 2: Lubricants - Industrial; Industrial uses (SU3).

2.1. Title section

Exposure Scenario name	:	Lubricants - Industrial
Structured Short Title	:	Lubricants - Industrial; Industrial uses (SU3).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**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 (or contained in articles), frequency and duration of use/exposure		
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
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)

Protection Target	Exposure estimate	RCR
Air	0,0000044 mg/m³ (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

ES 3: Lubricants - Professional; Professional uses (SU22).

3.1. Title section

Exposure Scenario name	:	Lubricants - Professional
Structured Short Title	:	Lubricants - Professional; Professional uses (SU22).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**Lubricants - Professional**	ERC4, ERC7, ERC8a, ERC8d, ERC9a, ERC9b

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 (or contained in articles), frequency and duration of use/exposure		
Release type	:	Continuous release
Emission days	:	25
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
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

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)

Protection Target	Exposure estimate	RCR
Air	0,0000044 mg/m³ (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

ES 4: Lubricants - Consumer; Consumer uses (SU21).

4.1. Title section

Exposure Scenario name	:	Lubricants - Consumer
Structured Short Title	:	Lubricants - Consumer; Consumer uses (SU21).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**Lubricants - Consumer**	ERC4, ERC7, ERC8a, ERC8d, ERC9a, ERC9b

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 (or contained in articles), frequency and duration of use/exposure		
Release type	:	Continuous release
Emission days	:	365
Other conditions affecting environmental exposure		
Receiving surface water flow	:	18.000 m3/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)

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

ES 5: Metal working fluids / rolling oils - Industrial; Industrial uses (SU3).

5.1. Title section

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

Environment		
CS 1	**Metal working fluids / rolling oils - Industrial**	ERC4, ERC8a, ERC8d, ERC9a, ERC9b

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 (or contained in articles), frequency and duration of use/exposure		
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
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)

Protection Target	Exposure estimate	RCR
Air	0,000009 mg/m³ (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

ES 6: Metal working fluids / rolling oils - Industrial; Professional uses (SU22).

6.1. Title section

Exposure Scenario name	:	Metal working fluids / rolling oils – Professional
Structured Short Title	:	Metal working fluids / rolling oils - Industrial; Professional uses (SU22).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**Metal working fluids / rolling oils - Industrial**	ERC4, ERC8a, ERC8d, ERC9a, ERC9b

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 (or contained in articles), frequency and duration of use/exposure		
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
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)

Protection Target	Exposure estimate	RCR
Air	0,0000005 mg/m³ (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

ES 7: Functional Fluids - Industrial; Industrial uses (SU3).

7.1. Title section

Exposure Scenario name	:	Functional Fluids - Industrial
Structured Short Title	:	Functional Fluids - Industrial; Industrial uses (SU3).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**Functional Fluids - Industrial**	ERC7, ERC9a, ERC9b

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 %.		
Amount used (or contained in articles), frequency and duration of use/exposure		
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 0,01 % 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
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

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)

Protection Target	Exposure estimate	RCR
Air	0,0000012 mg/m³ (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

ES 8: Functional Fluids - Professional; Professional uses (SU22).

8.1. Title section

Exposure Scenario name	:	Functional Fluids - Professional
Structured Short Title	:	Functional Fluids - Professional; Professional uses (SU22).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**Functional Fluids - Professional**	ERC7, ERC9a, ERC9b

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 (or contained in articles), frequency and duration of use/exposure		
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 0,625 % Soil - minimum efficiency of 0,625 %		
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

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)

Protection Target	Exposure estimate	RCR
Air	0,0000005 mg/m³ (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

ES 9: Functional Fluids - Consumer; Consumer uses (SU21).

9.1. Title section

Exposure Scenario name	:	Functional Fluids - Consumer
Structured Short Title	:	Functional Fluids - Consumer; Consumer uses (SU21).
Substance	:	1-Dodecene trimer, hydrogenated EC-No.: 417-070-7

Environment		
CS 1	**Lubricants - Consumer**	ERC7, ERC9a, ERC9b

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 (or contained in articles), frequency and duration of use/exposure		
Release type	:	Continuous release
Emission days	:	365
Other conditions affecting environmental exposure		
Receiving surface water flow	:	18.000 m3/d
Local freshwater dilution factor	:	10
Local marine water dilution factor	:	100

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