

**Synfluid® PAO 4 cSt**

Version 3.0

Revision Date 2011-12-16

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****Product information**

Trade name : Synfluid® PAO 4 cSt  
 Material : 1111739, 1111738, 1111733, 1079673, 1079928, 1079872,  
 1079835, 1079712, 1079702

**EC-No.Registration number**

Chemical Name	CAS-No. Index-No.	Legal Entity Registration number
1-Decene, homopolymer, hydrogenated	68037-01-4	Chevron Phillips Chemical Company LP 01-2119486452-34-0000
1-Decene, homopolymer, hydrogenated	68037-01-4	Chevron Phillips Chemicals International NV 01-2119486452-34-0006

Relevant Identified Uses : Manufacture  
 Supported Distribution  
 Use as an intermediate  
 Formulation  
 Use in coatings – industrial  
 Use in coatings – professional  
 Use in Coatings - Consumer  
 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  
 Use in polymer production – industrial  
 Agrochemical uses  
 Agrochemical uses  
 Other consumer uses

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

**Local** : Chevron Phillips Chemicals International N.V.  
 Brusselsesteenweg 355  
 B-3090 Overijse

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Belgium

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

**Emergency telephone:****Health:**

866.442.9628 (North America)  
 1.832.813.4984 (International)

**Transport:**

North America: CHEMTREC 800.424.9300 or 703.527.3887  
 Asia: +800 CHEMCALL (+800 2436 2255) China: 0532.8388.9090  
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Chemcare Asia: Tel: +65 6848 9048 - Mob: +65 8382 9188 - Fax: +65 6848  
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group  
 E-mail address : MSDS@CPChem.com  
 Website : www.CPChem.com

**2. HAZARDS IDENTIFICATION****Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters airways.

**Classification (67/548/EEC, 1999/45/EC)**

This substance is not classified as dangerous according to Directive 67/548/EEC.

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

Hazard pictograms :



Signal Word : Danger

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

Precautionary Statements : **Response:**  
 P301 + P310 IF SWALLOWED: Immediately call a  
 POISON CENTER or doctor/ physician.  
 Do NOT induce vomiting.  
**Storage:**  
 P405 Store locked up.  
**Disposal:**  
 P501 Dispose of contents/ container to an  
 approved waste disposal plant.

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Hazardous ingredients which must be listed on the label:

- 68037-01-4 1-Decene, homopolymer, hydrogenated

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Polyalphaolefin  
Polyalphaolefin  
PAO  
PAO

Molecular formula : UVCB

**Mixtures****Hazardous ingredients**

Chemical Name	CAS-No. EINECS-No.	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]
1-Decene, homopolymer, hydrogenated	68037-01-4		Asp. Tox. 1; H304	100

**EC-No.Registration number**

Chemical Name	CAS-No. EINECS-No.	Registration number
1-Decene, homopolymer, hydrogenated	68037-01-4	Chevron Phillips Chemical Company LP 01-2119486452-34-0000
1-Decene, homopolymer, hydrogenated	68037-01-4	Chevron Phillips Chemicals International NV 01-2119486452-34-0006

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

**4. FIRST AID MEASURES**

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

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

In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes. If skin irritation persists, call a physician.

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

If swallowed : Keep respiratory tract clear. Do NOT induce vomiting. If

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symptoms persist, call a physician.

**5. FIRE-FIGHTING MEASURES**

Flash point	: 219 °C (426 °F) Method: Cleveland Open Cup
Autoignition temperature	: 343 °C (649 °F)
Unsuitable extinguishing media	: High volume water jet.
Special protective equipment for fire-fighters	: Wear self contained breathing apparatus for fire fighting 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.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions	: Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

**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
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materials must comply with the technological safety standards.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Engineering measures**

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

- |                          |  |
|--------------------------|--|
| Respiratory protection   | : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Full-Face Supplied-Air Respirator. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection. |
| Hand protection          | : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.   |
| Eye protection           | : Eye wash bottle with pure water. Tightly fitting safety goggles.   |
| Skin and body protection | : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes.  |
| Hygiene measures         | : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.   |

**||** For additional details, see the Exposure Scenario in the Annex portion

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties****Appearance**

- |                |                    |
|----------------|--------------------|
| Form           | : Liquid           |
| Physical state | : Liquid           |
| Color          | : Clear, Colorless |

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Odor : Odorless

**Safety data**Flash point : 219 °C (426 °F)  
Method: Cleveland Open Cup

Autoignition temperature : 343 °C (649 °F)

Molecular formula : UVCB

Boiling point/boiling range : 414 °C (777 °F)

Vapor pressure : 1,70 MMHG  
at 177 °C (351 °F)

Relative density : 0,82, 15,6 °C(60,1 °F)

Viscosity, kinematic : 16 cSt  
at 37,8 °C (100,0 °F)

Evaporation rate : No data available

**10. STABILITY AND REACTIVITY**

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

**Possibility of hazardous reactions**

Conditions to avoid : No data available.

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

**11. TOXICOLOGICAL INFORMATION****Synfluid® PAO 4 cSt****Acute oral toxicity** : LD50: > 5.000 mg/kg  
Species: rat**Synfluid® PAO 4 cSt****Acute inhalation toxicity** : LC50: > 5,2 mg/l  
Exposure time: 4 h  
Species: rat  
Sex: male and female  
Test atmosphere: dust/mist**Synfluid® PAO 4 cSt****Acute dermal toxicity** : LD50: > 2.000 mg/kg  
Species: rat

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**Synfluid® PAO 4 cSt  
Skin irritation**

: No skin irritation

**Synfluid® PAO 4 cSt  
Eye irritation**

: No eye irritation

**Sensitization**1-Decene, homopolymer,  
hydrogenated: Classification: Did not cause sensitization on laboratory  
animals.**Synfluid® PAO 4 cSt  
Aspiration toxicity**: May be fatal if swallowed and enters airways.  
Substances known to cause human aspiration toxicity hazards  
or to be regarded as if they cause human aspiration toxicity  
hazard.**CMR effects**1-Decene, homopolymer,  
hydrogenated: 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**Synfluid® PAO 4 cSt  
Further information**

: Solvents may degrease the skin.

**12. ECOLOGICAL INFORMATION****Ecotoxicity effects****Toxicity to fish**: LC50: > 1.000 mg/l  
Exposure time: 96 h  
Species: Salmo gairdneri (Rainbow trout)  
  
LC50: > 750 mg/l  
Exposure time: 96 h  
Species: Pimephales promelas (fathead minnow)**Toxicity to daphnia and  
other aquatic  
invertebrates.**: EC50: 190 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)**Toxicity to algae**1-Decene, homopolymer,  
hydrogenated: NOELR: 1.000 mg/l  
Exposure time: 72 h  
Species: Scenedesmus capricornutum (fresh water algae)  
static test Method: OECD Test Guideline 201

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**Bioaccumulation**

1-Decene, homopolymer, hydrogenated : This material is not expected to bioaccumulate.

**Biodegradability**

1-Decene, homopolymer, hydrogenated : Expected to be inherently biodegradable.

**Results of PBT assessment**

1-Decene, homopolymer, hydrogenated : Non-classified PBT substance, Non-classified vPvB substance  
 Additional ecological information : No data available

**13. DISPOSAL CONSIDERATIONS**

The information in this MSDS 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 : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

**|| For additional details, see the Exposure Scenario in the Annex portion**

**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 MSDS 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.



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**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**

**15. REGULATORY INFORMATION****National legislation****Chemical Safety Assessment**

**Ingredients** : Dec-1-ene, oligomers, hydrogenated A Chemical Safety Assessment has been carried out for this substance.

**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  
Description of the classification procedure for all materials, which are not named in the appendices 1 and 2, on the basis of R-sentence-classifications of the European dangerous materials

**Notification status**

Europe REACH	:	On the inventory, or in compliance with the inventory
United States of America US.TSCA	:	On the inventory, or in compliance with the inventory
Canada DSL	:	On the inventory, or in compliance with the inventory
Australia AICS	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
		Notification number: HSR002606
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

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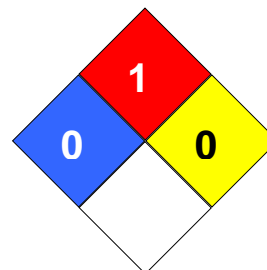
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China IECSC

: On the inventory, or in compliance with the inventory

**16. OTHER INFORMATION**

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

**Further information**

Legacy MSDS Number : 3332

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 MSDS pertains only to the product as shipped.

The information provided in this Material 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 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

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			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.**

H304                      May be fatal if swallowed and enters airways.

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**Annex****1. Short title of Exposure Scenario: Manufacture**

Main User Groups	: <b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: <b>SU 3, SU8, SU9:</b> Industrial Manufacturing (all), Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals
Process category	: <b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; <b>PROC8b:</b> Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC15:</b> Use as laboratory reagent
Environmental release category	: <b>ERC1, ERC4:</b> Manufacture of substances, Industrial use of processing aids in processes and products, not becoming part of articles
Further information	: Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities

**ERC1, ERC4:****Manufacture of substances, Industrial use of processing aids in processes and products, not becoming part of articles****Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8, PROC8b, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory**

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**reagent****Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Distribution**

- Main User Groups : **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites
- Sector of use : **SU 3:** Industrial Manufacturing (all)
- Process category : **PROC1:** Use in closed process, no likelihood of exposure  
**PROC2:** Use in closed, continuous process with occasional controlled exposure  
**PROC3:** Use in closed batch process (synthesis or formulation)  
**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises  
**PROC8:** Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;  
**PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
**PROC8b:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities  
**PROC15:** Use as laboratory reagent
- Environmental release category : **ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7:** Manufacture of substances, Formulation of preparations, Formulation in materials, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in inclusion into or onto a matrix, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids, Industrial use of monomers for manufacture of thermoplastics, Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers, Industrial use of substances in closed systems
- Further information : Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

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**ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7: Manufacture of substances, Formulation of preparations, Formulation in materials, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in inclusion into or onto a matrix, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids, Industrial use of monomers for manufacture of thermoplastics, Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers, Industrial use of substances in closed systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8, PROC8b, PROC9, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Use as laboratory reagent**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Use as an intermediate**

Main User Groups : **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use : **SU 3, SU8, SU9:** Industrial Manufacturing (all), Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals

Process category : **PROC1:** Use in closed process, no likelihood of exposure

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**PROC2:** Use in closed, continuous process with occasional controlled exposure  
**PROC3:** Use in closed batch process (synthesis or formulation)  
**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises  
**PROC8:** Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;  
**PROC8b:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities  
**PROC15:** Use as laboratory reagent

Environmental release category : **ERC6a:** Industrial use resulting in manufacture of another substance (use of intermediates)  
 Further information : Use as an isolated intermediate under strictly controlled conditions

**ERC6a: Industrial use**

**resulting in manufacture of another substance (use of intermediates)**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8, PROC8b, PROC15:** Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory reagent

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

MSDS Number: 100000010950

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Not applicable

1. Short title of Exposure Scenario: **Formulation**

- |                                |   |   |
|--------------------------------|---|---|
| Main User Groups               | : | <b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites   |
| Sector of use                  | : | <b>SU 3, SU 10:</b> Industrial Manufacturing (all), Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)  |
| Process category               | : | <b>PROC1:</b> Use in closed process, no likelihood of exposure<br><b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure<br><b>PROC3:</b> Use in closed batch process (synthesis or formulation)<br><b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises<br><b>PROC5:</b> Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;<br><b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;<br><b>PROC8b:</b> Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities<br><b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br><b>PROC14:</b> Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting;<br><b>PROC15:</b> Use as laboratory reagent |
| Environmental release category | : | <b>ERC2:</b> Formulation of preparations  |
| Further information            | : | Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.   |

**ERC2: Formulation of****preparations****Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4,, PROC8, PROC8b, PROC9, PROC14, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage**



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and/or significant contact), Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting; Use as laboratory reagent

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Use in coatings – industrial**

Main User Groups	:	<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	:	<b>SU 3:</b> Industrial Manufacturing (all)
Process category	:	<b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC5:</b> Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting; <b>PROC7:</b> Industrial spraying <b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing) <b>PROC10:</b> Roller application or brushing <b>PROC13:</b> Treatment of articles by dipping and pouring <b>PROC14:</b> Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting; <b>PROC15:</b> Use as laboratory reagent
Environmental release category	:	<b>ERC4:</b> Industrial use of processing aids in processes and products, not becoming part of articles

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Further information : Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

**ERC4: Industrial use**

**of processing aids in processes and products, not becoming part of articles**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;, Industrial spraying, Transfer of substance or mixture (charging/discharging) from/to vessels(large containers at non dedicated facilities; Industrial or non-industrial setting;, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Roller application or brushing, Treatment of articles by dipping and pouring, Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting;, Use as laboratory reagent**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

1. Short title of Exposure Scenario: **Use in coatings – professional**

Main User Groups : **SU 22: Professional uses: Public domain (administration,**

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- Sector of use : education, entertainment, services, craftsmen)  
**SU 22:** Public domain (administration, education, entertainment, services, craftsmen)
- Process category : **PROC1:** Use in closed process, no likelihood of exposure  
**PROC2:** Use in closed, continuous process with occasional controlled exposure  
**PROC3:** Use in closed batch process (synthesis or formulation)  
**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises  
**PROC5:** Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;  
**PROC8:** Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;  
**PROC8b:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities  
**PROC10:** Roller application or brushing  
**PROC11:** Non industrial spraying  
**PROC13:** Treatment of articles by dipping and pouring  
**PROC15:** Use as laboratory reagent  
**PROC19:** Hand-mixing with intimate contact and only PPE available
- Environmental release category : **ERC8a, ERC8d:** Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems
- Further information : Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

**ERC8a, ERC8d: Wide**

**dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated**

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**facilities; Industrial or non-industrial setting;; Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Roller application or brushing, Non industrial spraying, Treatment of articles by dipping and pouring, Use as laboratory reagent, Hand-mixing with intimate contact and only PPE available**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Use in Coatings - Consumer**

Main User Groups	:	<b>SU 21:</b> Consumer uses: Private households (= general public = consumers)
Sector of use	:	<b>SU 21:</b> Consumer uses: Private households (= general public = consumers)
Product category	:	<b>PC1:</b> Adhesives, sealants <b>PC4:</b> Anti-Freeze and de-icing products <b>PC8:</b> Biocidal products (e.g. Disinfectants, pest control) <b>PC9a:</b> Coatings and paints, thinners, paint removers <b>PC9b:</b> Fillers, putties, plasters, modelling clay <b>PC9c:</b> Finger paints <b>PC15:</b> Non-metal-surface treatment products <b>PC18:</b> Ink and toners <b>PC23:</b> Leather tanning, dye, finishing, impregnation and care products <b>PC24:</b> Lubricants, greases, release products <b>PC31:</b> Polishes and wax blends <b>PC34:</b> Textile dyes, finishing and impregnating productsE including bleaches and other processing aids
Environmental release category	:	<b>ERC8a, ERC8d:</b> Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems
Further information	:	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

**ERC8a, ERC8d: Wide**

**dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**

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**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling consumer exposure for: PC1, PC4, PC8, PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34: Adhesives, sealants, Anti-Freeze and de-icing products, Biocidal products (e.g. Disinfectants, pest control), Coatings and paints, thinners, paint removers, Fillers, putties, plasters, modelling clay, Finger paints, Non-metal-surface treatment products, Ink and toners, Leather tanning, dye, finishing, impregnation and care products, Lubricants, greases, release products, Polishes and wax blends, Textile dyes, finishing and impregnating productsE including bleaches and other processing aids**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Lubricants - Industrial**

Main User Groups	: <b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: <b>SU 3:</b> Industrial Manufacturing (all)
Process category	: <b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC7:</b> Industrial spraying <b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; <b>PROC8b:</b> Transfer of substance or preparation (charging/

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discharging) from/ to vessels/ large containers at dedicated facilities

**PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

**PROC10:** Roller application or brushing

**PROC13:** Treatment of articles by dipping and pouring

**PROC17:** Lubrication at high energy conditions and in partly open process

**PROC18:** Greasing at high energy conditions

Environmental release category : **ERC4, ERC7:** Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of substances in closed systems

Further information : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

**ERC4, ERC7:**

**Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of substances in closed systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Industrial spraying, Transfer of substance or mixture (charging/discharging) from/to vessels(large containers at non dedicated facilities; Industrial or non-industrial setting;; Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Roller application or brushing, Treatment of articles by dipping and pouring, Lubrication at high energy conditions and in partly open process, Greasing at high energy conditions**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

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**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Lubricants - Professional**

- |                                |  |
|--------------------------------|--|
| Main User Groups               | : <b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)   |
| Sector of use                  | : <b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)   |
| Process category               | : <b>PROC1:</b> Use in closed process, no likelihood of exposure<br><b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure<br><b>PROC3:</b> Use in closed batch process (synthesis or formulation)<br><b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises<br><b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;<br><b>PROC8b:</b> Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities<br><b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br><b>PROC10:</b> Roller application or brushing<br><b>PROC11:</b> Non industrial spraying<br><b>PROC13:</b> Treatment of articles by dipping and pouring<br><b>PROC17:</b> Lubrication at high energy conditions and in partly open process<br><b>PROC18:</b> Greasing at high energy conditions<br><b>PROC20:</b> Heat and pressure transfer fluids in dispersive, professional use but closed systems |
| Environmental release category | : <b>ERC8a, ERC8d, ERC9a, ERC9b:</b> Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems  |
| Further information            | : Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.  |

**ERC8a, ERC8d,**

**ERC9a, ERC9b: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems**

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Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20:** Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; , Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Roller application or brushing, Non industrial spraying, Treatment of articles by dipping and pouring, Lubrication at high energy conditions and in partly open process, Greasing at high energy conditions, Heat and pressure transfer fluids in dispersive, professional use but closed systems

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Lubricants - Consumer**

Main User Groups	: <b>SU 21:</b> Consumer uses: Private households (= general public = consumers)
Sector of use	: <b>SU 21:</b> Consumer uses: Private households (= general public = consumers)
Product category	: <b>PC1:</b> Adhesives, sealants <b>PC24:</b> Lubricants, greases, release products <b>PC31:</b> Polishes and wax blends
Environmental release category	: <b>ERC8a, ERC8d, ERC9a, ERC9b:</b> Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems
Further information	: Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.



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**ERC8a, ERC8d,**

**ERC9a, ERC9b: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling consumer exposure for: PC1, PC24, PC31: Adhesives, sealants, Lubricants, greases, release products, Polishes and wax blends**
**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Metal working fluids / rolling oils - Industrial**

Main User Groups	: <b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: <b>SU 3:</b> Industrial Manufacturing (all)
Process category	: <b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC5:</b> Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting; <b>PROC7:</b> Industrial spraying <b>PROC8:</b> Transfer of substance or mixture

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(charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;

**PROC8b:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities

**PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

**PROC10:** Roller application or brushing

**PROC13:** Treatment of articles by dipping and pouring

**PROC17:** Lubrication at high energy conditions and in partly open process

Environmental release category : **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles

Further information : Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

**ERC4: Industrial use**

**of processing aids in processes and products, not becoming part of articles**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4,, PROC7, PROC8, PROC8b, PROC9, PROC10, PROC13, PROC17:** Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, **PROC 5:** Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact), Industrial spraying, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;,, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Roller application or brushing, Treatment of articles by dipping and pouring, Lubrication at high energy conditions and in partly open process

**Amount used**

Remarks : Not applicable

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

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Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Metal working fluids / rolling oils – Professional**

Main User Groups	: <b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of use	: <b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: <b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; <b>PROC8b:</b> Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing) <b>PROC10:</b> Roller application or brushing <b>PROC11:</b> Non industrial spraying <b>PROC13:</b> Treatment of articles by dipping and pouring <b>PROC17:</b> Lubrication at high energy conditions and in partly open process
Environmental release category	: <b>ERC8a, ERC8d, ERC9a, ERC9b:</b> Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems
Further information	: Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.

**ERC8a, ERC8d,**

**ERC9a, ERC9b: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems, Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

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**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing), Roller application or brushing, Non industrial spraying, Treatment of articles by dipping and pouring, Lubrication at high energy conditions and in partly open process**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Functional Fluids - Industrial**

Main User Groups	: <b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: <b>SU 3:</b> Industrial Manufacturing (all)
Process category	: <b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC8:</b> Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Environmental release category	: <b>ERC7:</b> Industrial use of substances in closed systems
Further information	: Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

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**of substances in closed systems**

**ERC7: Industrial use****Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8, PROC8b, PROC9: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting; Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing)**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Functional Fluids - Professional**

Main User Groups	: <b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of use	: <b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: <b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC8a:</b> Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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- PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- Environmental release category : **ERC9a, ERC9b:** Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems
- Further information : Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

**ERC9a, ERC9b: Wide**

**dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8, PROC8a, PROC9:** Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Transfer of substance or mixture (charging/discharging) from/to vessels (large containers at non dedicated facilities; Industrial or non-industrial setting;,, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

1. Short title of Exposure Scenario: **Functional Fluids - Consumer**

Main User Groups : **SU 21:** Consumer uses: Private households (= general public = consumers)

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Sector of use : **SU 21:** Consumer uses: Private households (= general public = consumers)

Product category : **PC16:** Heat transfer fluids  
**PC17:** Hydraulic fluids

Environmental release category : **ERC9a, ERC9b:** Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems

Further information : Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

**ERC9a, ERC9b: Wide**

**dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling consumer exposure for: PC16, PC17: Heat transfer fluids, Hydraulic fluids****Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Use in polymer production – industrial**

Main User Groups : **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use : **SU 3, SU 10:** Industrial Manufacturing (all), Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

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- Process category : **PROC1:** Use in closed process, no likelihood of exposure  
**PROC2:** Use in closed, continuous process with occasional controlled exposure  
**PROC3:** Use in closed batch process (synthesis or formulation)  
**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises  
: **PROC 5:** Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
**PROC6:** Calendering operations  
**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
**PROC8b:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities  
**PROC15:** Use as laboratory reagent  
**PROC14:** Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting;
- Environmental release category : **ERC4, ERC6c:** Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of monomers for manufacture of thermoplastics
- Further information : Manufacture of polymers from monomers in continuous and batch processes, include sparging, discharging, and reactor maintenance and immediate polymer product formation (i.e. compounding, pelletisation, product off-gassing).

**ERC4, ERC6c:**

**Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of monomers for manufacture of thermoplastics**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4,, PROC6, PROC8, PROC8b, PROC15, PROC14:** Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in closed batch process (synthesis or formulation), Use in batch and other process (synthesis) where opportunity for exposure arises, PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact), Calendering operations, Transfer of substance or mixture (charging/discharging) from/to vessels(large containers at non dedicated facilities; Industrial or non-industrial setting;, Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory reagent, Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting;



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**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Agrochemical uses**

Main User Groups : **SU 22:** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Sector of use : **SU 22:** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process category : **PROC1:** Use in closed process, no likelihood of exposure  
**PROC2:** Use in closed, continuous process with occasional controlled exposure  
**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises  
**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
**PROC8b:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities  
**PROC11:** Non industrial spraying  
**PROC13:** Treatment of articles by dipping and pouring

Environmental release category : **ERC8a, ERC8d:** Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Further information : Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.

**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

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**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC8b, PROC11, PROC13, PROC8: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Use in batch and other process (synthesis) where opportunity for exposure arises, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Non industrial spraying, Treatment of articles by dipping and pouring, Transfer of substance or mixture (charging/discharging) from/to vessels(large containers at non dedicated facilities; Industrial or non-industrial setting;**

**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Agrochemical uses**

Main User Groups : **SU 21:** Consumer uses: Private households (= general public = consumers)

Sector of use : **SU 21:** Consumer uses: Private households (= general public = consumers)

Product category : **PC12:** Fertilizers  
**PC27:** Plant protection products

Environmental release category : **ERC8d:** Wide dispersive outdoor use of processing aids in open systems

Further information : Covers the consumer use in agrochemicals in liquid and solid forms.

**ERC8d: Wide dispersive outdoor use of processing aids in open systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling consumer exposure for: PC12, PC27: Fertilizers, Plant protection products**

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**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable

**1. Short title of Exposure Scenario: Other consumer uses**

Main User Groups : **SU 21:** Consumer uses: Private households (= general public = consumers)

Sector of use : **SU 21:** Consumer uses: Private households (= general public = consumers)

Product category : **PC31:** Polishes and wax blends

Environmental release category : **ERC8a, ERC8d:** Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Further information : Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

**ERC8a, ERC8d: Wide**

**dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**

**Technical conditions and measures / Organizational measures**

Remarks : Not applicable

**2.2 Contributing scenario controlling consumer exposure for: PC31: Polishes and wax blends**

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**Amount used**

Remarks : Not applicable

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

Remarks: Not applicable

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Not applicable