# Synfluid® PAO 6 cSt

Version 4.1 Revision Date 2011-12-16

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product information**

Trade name : Synfluid® PAO 6 cSt
Material : 1111741, 1111740, 1111734, 1079874, 1079931, 1079667

**EC-No.Registration number**

| Chemical Name | CAS-No.<br>Index-No. | Legal Entity<br>Registration number |
|---|---|---|
| 1-Decene Homopolymer Hydrogenated | 68037-01-4 | Chevron Phillips Chemical Company LP<br>01-2119486452-34-0000 |
| 1-Decene Homopolymer Hydrogenated | 68037-01-4 | Chevron Phillips Chemicals International NV<br>01-2119486452-34-0006 |

Relevant Identified Uses Supported :

Manufacture

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
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)**

Not a dangerous substance according to Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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

**Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.Label elements**

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

Not a dangerous substance according to Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Polyalphaolefin
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 | | | 100 |
| Contains no hazardous ingredients according to GHS. : | | | | |

**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 |

## 4. FIRST AID MEASURES

General advice : Do not leave the victim unattended.

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

In case of skin contact : Wash off with soap and water.

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.

## 5. FIRE-FIGHTING MEASURES

Flash point : 238 °C (460 °F)
Method: Cleveland Open Cup

Autoignition temperature : 354 °C (669 °F)

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

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

## 7. HANDLING AND STORAGE

**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. |

**Storage**

| | | |
|---|---|---|
| Requirements for storage areas and containers | : | Electrical installations / working 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. |
| Hand protection | : | The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. |
| Eye protection | : | Eye wash bottle with pure water. Tightly fitting safety goggles. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the |

specific work-place. Wear as appropriate:. Lightweight protective clothing. Safety shoes.

Hygiene measures : Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

**Appearance**

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Color | : | Clear, Colorless |
| Odor | : | Odorless |

**Safety data**

| | | |
|---|---|---|
| Flash point | : | 238 °C (460 °F)<br>Method: Cleveland Open Cup |
| Lower explosion limit | : | Not applicable |
| Upper explosion limit | : | Not applicable |
| Oxidizing properties | : | no |
| Autoignition temperature | : | 354 °C (669 °F) |
| Molecular formula | : | UVCB |
| Molecular Weight | : | Varies |
| pH | : | Not applicable |
| Melting point/range | : | Not applicable |
| Boiling point/boiling range | : | 419 °C (786 °F) |
| Vapor pressure | : | 0,70 MMHG<br>at 149 °C (300 °F) |
| Relative density | : | 0,83, 15,6 °C(60,1 °F) |
| Water solubility | : | Soluble in hydrocarbon solvents; insoluble in water. |
| Partition coefficient: n-octanol/water | : | No data available |
| Viscosity, kinematic | : | 30,5 cSt<br>at 40 °C (104 °F) |
| Relative vapor density | : | 10<br>(Air = 1.0) |
| 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.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

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

## 11. TOXICOLOGICAL INFORMATION

**Synfluid® PAO 6 cSt**
**Acute oral toxicity** : LD50: > 5.000 mg/kg
Species: rat
Information given is based on data obtained from similar substances.

**Synfluid® PAO 6 cSt**
**Acute inhalation toxicity** : LC50: > 5,2 mg/l
Exposure time: 4 h
Species: rat
Test atmosphere: dust/mist
Information given is based on data obtained from similar substances.

**Synfluid® PAO 6 cSt**
**Acute dermal toxicity** : LD50 Dermal: > 2.000 mg/kg
Species: rat
Information given is based on data obtained from similar substances.

**Synfluid® PAO 6 cSt**
**Skin irritation** : No skin irritation

**Synfluid® PAO 6 cSt**
**Eye irritation** : No eye irritation

**Synfluid® PAO 6 cSt**
**Sensitization** : Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**

1-Decene Homopolymer Hydrogenated : Species: rat
Application Route: Oral
Dose: 0, 8000, 20000, 50000 ppm
Exposure time: 28 day
Number of exposures: daily

NOEL: 6.245 mg/kg
Method: OECD Test Guideline 407

Species: rat
Application Route: oral gavage
Dose: 0, 1000, 7000, 50000 ppm
Exposure time: 13 weeks
Number of exposures: daily
NOEL: 4.159,4 mg/kg
Method: OCED Guideline 408

**Carcinogenicity**

1-Decene Homopolymer Hydrogenated : Remarks: This information is not available.

**Reproductive toxicity**

1-Decene Homopolymer Hydrogenated : Species: rat
Sex: male and female
Application Route: oral gavage
Dose: 0, 100, 500, 1000 mg/kg
Number of exposures: daily
Test period: 10 weeks
Method: OECD Test Guideline 415
NOAEL Parent: 1.000 mg/kg

**Synfluid® PAO 6 cSt**
**Teratogenicity** : This information is not available.

**Synfluid® PAO 6 cSt**
**Aspiration toxicity** : No aspiration toxicity classification.

**CMR effects**

1-Decene Homopolymer Hydrogenated : Carcinogenicity: Not classifiable as a human carcinogen.
Mutagenicity: Animal testing did not show any mutagenic effects.
Teratogenicity: Not available
Reproductive toxicity: No toxicity to reproduction

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects**

**Toxicity to fish** : LC50: > 750 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

**Toxicity to daphnia and other aquatic invertebrates.**

1-Decene Homopolymer Hydrogenated : EL50: > 1.000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202

**Toxicity to algae** : EC50: > 1.000 mg/l
Exposure time: 96 h
Species: Selenastrum capricornutum (algae)

Elimination information (persistence and degradability)

Bioaccumulation

1-Decene Homopolymer Hydrogenated : This material is not expected to bioaccumulate.

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

**Results of PBT assessment**

1-Decene Homopolymer Hydrogenated : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

## 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.

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

## 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.

**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<br>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 |
| China IECSC | : | On the inventory, or in compliance with the inventory |

## 16. OTHER INFORMATION

**Further information**

Legacy MSDS Number : 3333

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 | Philipines 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 | UVCB | Unknown or Variable Compositon, |

| | | | |
|---|---|---|---|
| | Inventory | | Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System |
| LC50 | Lethal Concentration 50% | | |

**Annex**

1. Short title of Exposure Scenario:

| | | |
|---|---|---|
| Sector of use | : | **SU0-1:** Other activity related to manufacturing of chemical products |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC0:** Other Process or activity |
| Article category | : | **AC 0:** Other Articles |
| Environmental release category | : | **ERC2:** Formulation of preparations |

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

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

1. Short title of Exposure Scenario:

| | | |
|---|---|---|
| Sector of use | : | **SU0-1:** Other activity related to manufacturing of chemical products |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC5:** Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting; |
| Article category | : | **AC 0:** Other Articles |

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

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

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

| | | |
|---|---|---|
| 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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**PROC15:** Use as laboratory reagent |
| Environmental release category | : | **ERC1, ERC4:** 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 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:

| | | |
|---|---|---|
| Sector of use | : | **SU0-1:** Other activity related to manufacturing of chemical products |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC6:** Calendering operations |
| Article category | : | **AC 0:** Other Articles |

## 3. Exposure estimation and reference to its source

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

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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**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 |

| | | |
|---|---|---|
| Further information | : | 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<br>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. |

**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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**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**

Not applicable
1. Short title of Exposure Scenario:

| | | |
|---|---|---|
| Sector of use | : | **SU0-1:** Other activity related to manufacturing of chemical products |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC7:** Industrial spraying |
| Article category | : | **AC 0:** Other Articles |

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

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

1. Short title of Exposure Scenario:

| | | |
|---|---|---|
| Sector of use | : | **SU0-1:** Other activity related to manufacturing of chemical products |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC8:** Transfer of substance or mixture (charging/discharging) from/to vessels(large containers at non dedicated facilities; Industrial or non-industrial setting; |
| Article category | : | **AC 0:** Other Articles |

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

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

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

| | | |
|---|---|---|
| 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) |
| Process category | : | **PROC1:** Use in closed process, no likelihood of exposure<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**:** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC14:** Production of mixtures or articles by tabletting, compression, extrusion, pelletization; Industrial setting;<br>**PROC15:** Use as laboratory reagent |
| Environmental release category | : | **ERC2:** 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, tabletting, 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 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 tabletting, 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 | : | **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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**:** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>**PROC7:** Industrial spraying<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC10:** Roller application or brushing<br>**PROC13:** Treatment of articles by dipping and pouring<br>**PROC14:** Production of mixtures or articles by tabletting, compression, extrusion, pelletization; Industrial setting;<br>**PROC15:** Use as laboratory reagent |
| Environmental release category | : | **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles |
| 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 tabletting, 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:

Sector of use : **SU0-1:** Other activity related to manufacturing of chemical products
Product category : **PC0:** Other (use UCN codes)
Process category : **PROC9:** Transfer of substance or preparation into small

containers (dedicated filling line, including weighing)

Article category : **AC 0:** Other Articles

## 3. Exposure estimation and reference to its source

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

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

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

Sector of use : **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
**:** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
**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
**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 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:

| | | |
|---|---|---|
| Sector of use | : | **SU0-1:** Other activity related to manufacturing of chemical products |
| Product category | : | **PC24:** Lubricants, greases, release products |
| Process category | : | **PROC0:** Other Process or activity |
| Article category | : | **AC 0:** Other Articles |

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

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

1. Short title of Exposure Scenario:

| | | |
|---|---|---|
| Sector of use | : | **SU 10:** Formulation [mixing] of preparations and/ or re-packaging (excluding alloys) |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC0:** Other Process or activity |
| Article category | : | **AC 0:** Other Articles |

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

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

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

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

**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:

| | | |
|---|---|---|
| Sector of use | : | **SU 22:** Public domain (administration, education, entertainment, services, craftsmen) |
| Product category | : | **PC0:** Other (use UCN codes) |
| Process category | : | **PROC0:** Other Process or activity |
| Article category | : | **AC 0:** Other Articles |

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

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

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

| | | |
|---|---|---|
| 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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC7:** Industrial spraying<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC10:** Roller application or brushing<br>**PROC13:** Treatment of articles by dipping and pouring<br>**PROC17:** Lubrication at high energy conditions and in partly open process<br>**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

**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 | : | **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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC10:** Roller application or brushing<br>**PROC11:** Non industrial spraying<br>**PROC13:** Treatment of articles by dipping and pouring<br>**PROC17:** Lubrication at high energy conditions and in partly open process<br>**PROC18:** Greasing at high energy conditions |

| | | |
|---|---|---|
| | | **PROC20:** Heat and pressure transfer fluids in dispersive, professional use but closed systems |
| Environmental release category | : | **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 |
| 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**

**Technical conditions and measures / Organizational measures**

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 | : | **SU 21:** Consumer uses: Private households (= general public = consumers) |
| Sector of use | : | **SU 21:** Consumer uses: Private households (= general public = consumers) |
| Product category | : | **PC1:** Adhesives, sealants<br>**PC24:** Lubricants, greases, release products<br>**PC31:** Polishes and wax blends |
| Environmental release category | : | **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 |
| 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. |

**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 | : | **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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**:** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>**PROC7:** Industrial spraying<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC10:** Roller application or brushing<br>**PROC13:** Treatment of articles by dipping and pouring<br>**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**

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 | : | **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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC10:** Roller application or brushing<br>**PROC11:** Non industrial spraying<br>**PROC13:** Treatment of articles by dipping and pouring<br>**PROC17:** Lubrication at high energy conditions and in partly open process |

| | | |
|---|---|---|
| Environmental release category | : | **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 |
| 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 |

**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 | : | **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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| Environmental release category | : | **ERC7:** 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. |

**ERC7: 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: 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 | : | **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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**:** 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) |
| Sector of use | : | **SU 21:** Consumer uses: Private households (= general public = consumers) |
| Product category | : | **PC16:** Heat transfer fluids<br>**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) |
| Process category | : | **PROC1:** Use in closed process, no likelihood of exposure<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**:** PROC 5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)<br>**PROC6:** Calendering operations<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**PROC15:** Use as laboratory reagent<br>**PROC14:** Production of mixtures or articles by tabletting, 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 tabletting, compression, extrusion, pelletization; 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 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<br>**PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities<br>**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 |

**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<br>**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**

**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**

**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:

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

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