

**Synfluid® PAO 2 cSt**

Version 1.6

Revision Date 2012-01-31

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

Trade name : Synfluid® PAO 2 cSt
 Material : 1111737, 1111736, 1111732, 1082190, 1079695, 1079661, 1079651, 1079671

EC-No.Registration number

Chemical Name	CAS-No. Index-No.	Legal Entity Registration number
1-Decene, Dimer, Hydrogenated	68649-11-6	Chevron Phillips Chemical Company LP Pre-registered
1-Decene, Dimer, Hydrogenated	68649-11-6	Chevron Phillips Chemicals International NV 01-2119493069-28-0002

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

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

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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.
 Acute toxicity , Category 4 H332:
 Harmful if inhaled.

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

Harmful R20:
 Harmful by inhalation.
 R65:
 Harmful: may cause lung damage if swallowed.

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

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H304 May be fatal if swallowed and enters airways.
 H332 Harmful if inhaled.

Precautionary Statements : **Prevention:**
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P271 Use only outdoors or in a well-ventilated area.

Response:

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P301 + P310 IF SWALLOWED: Immediately call a
POISON CENTER or doctor/ physician.
P304 + P340 IF INHALED: Remove victim to fresh air
and keep at rest in a position comfortable
for breathing.
P312 Call a POISON CENTER or doctor/
physician if you feel unwell.
P331 Do NOT induce vomiting.

Hazardous ingredients which must be listed on the label:

- 68649-11-6 1-Decene, Dimer, Hydrogenated

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1-Decene, Dimer, Hydrogenated
Synfluid PAO 2 CST
PAO 2 MIL
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, Dimer, Hydrogenated	68649-11-6	Xn; Xn; R20-R65	Asp. Tox. 1; H304 Acute Tox. 4; H332	100

EC-No.Registration number

Chemical Name	CAS-No. EINECS-No.	Registration number
1-Decene, Dimer, Hydrogenated	68649-11-6	Chevron Phillips Chemical Company LP Pre-registered
1-Decene, Dimer, Hydrogenated	68649-11-6	Chevron Phillips Chemicals International NV 01-2119493069-28-0002

For the full text of the R-phrases mentioned in this Section, see Section 16.

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

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- 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 symptoms persist, call a physician.

5. FIRE-FIGHTING MEASURES

- Flash point : 160 °C (320 °F)
Method: Cleveland Open Cup
- Autoignition temperature : 324 °C (615 °F)
- Unsuitable extinguishing media : High volume water jet.
- Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.
- 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

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with local and national regulations.

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

Storage

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

DNEL : End Use: Workers
Routes of exposure: Inhalation
Potential health effects: Acute effects
Exposure time: 15 min
Value: 60 mg/m3

DNEL : End Use: Consumers
Routes of exposure: Inhalation
Potential health effects: Acute effects
Exposure time: 15 min
Value: 50 mg/m3

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: Air-Purifying Respirator for Dusts and Mists / P100. 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

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is any indication of degradation or chemical breakthrough.

- Eye protection : Safety glasses. Eye wash bottle with pure water.
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Protective suit. Safety shoes.
- Hygiene measures : General industrial hygiene practice.
- Protective measures : Wear suitable protective equipment. When using do not eat, drink or smoke.

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

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 : 160 °C (320 °F)
Method: Cleveland Open Cup
- Lower explosion limit : Not applicable
- Upper explosion limit : Not applicable

- Oxidizing properties : no
- Autoignition temperature : 324 °C (615 °F)
- Molecular formula : UVCB
- Molecular Weight : Varies
- pH : Not applicable
- Freezing point : -73 °C (-99 °F)
- Boiling point/boiling range : 223 °C (433 °F)
- Vapor pressure : 1,00 MMHG
at 75 °C (167 °F)
- Relative density : 0,8, 15,6 °C(60,1 °F)
- Density : 795,7 g/l
- Water solubility : Soluble in hydrocarbon solvents; insoluble in water.
- Partition coefficient: n-octanol/water : No data available
- Relative vapor density : 9

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(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

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Acute oral toxicity : LD50: >5 ML/KG Species: rat
Sex: Not Specified

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Acute inhalation toxicity : LC50: 1,17 mg/l
Exposure time: 4 h
Species: rat
Test atmosphere: dust/mist

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Acute dermal toxicity : LD50: > 3 g/kg
Species: rabbit
Sex: Not Specified

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Skin irritation : No skin irritation

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Eye irritation : No eye irritation

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Sensitization : Did not cause sensitization on laboratory animals.

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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

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hazard.

CMR effects1-Decene, Dimer,
Hydrogenated

: Carcinogenicity: Not classifiable as a human carcinogen.
 Mutagenicity: Contains no ingredient listed as a mutagen
 Teratogenicity: no developmental effects
 Reproductive toxicity: No toxicity to reproduction

12. ECOLOGICAL INFORMATION**Toxicity to fish**1-Decene, Dimer,
Hydrogenated

: LL50: > 1.000 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 semi-static test Test substance: yes
 The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to daphnia and other aquatic invertebrates.1-Decene, Dimer,
Hydrogenated

: EL50: > 1.000 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 static test Test substance: yes
 The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to algae1-Decene, Dimer,
Hydrogenated

: EL50: > 1.000 mg/l
 Exposure time: 72 h
 Species: Scenedesmus capricornutum (fresh water algae)
 static test Test substance: yes
 The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity)1-Decene, Dimer,
Hydrogenated

: NOEC: 125 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 Test substance: yes
 The product has low solubility in the test medium. An aqueous dispersion was tested.

Elimination information (persistence and degradability)

Biodegradability : Expected to be inherently biodegradable.

Results of PBT assessment

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1-Decene, Dimer,
Hydrogenated: This substance is not considered to be persistent,
bioaccumulating nor toxic (PBT)., This substance is not
considered to be very persistent nor very bioaccumulating
(vPvB).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.

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.

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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, dimers,
hydrogenated

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
China IECSC	: On the inventory, or in compliance with the inventory

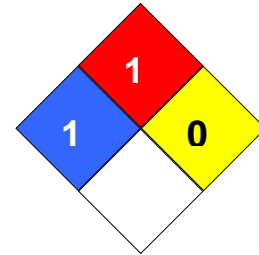
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16. OTHER INFORMATION

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

**Further information**

Legacy MSDS Number : 3331

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 Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value

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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 R-phrases referred to under sections 2 and 3

R20 Harmful by inhalation.
R65 Harmful: may cause lung damage if swallowed.

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

H304 May be fatal if swallowed and enters airways.
H332 Harmful if inhaled.

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

ERC1, ERC4:

Remarks	: Not applicable
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Remarks	: A quantitative risk assessment is not required for the environment.
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Amount used

Remarks : Not applicable

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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

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

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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

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, 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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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

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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
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

Environmental release category : **ERC6a:** Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6a: Industrial use

resulting in manufacture of another substance (use of intermediates)

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, 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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Use as laboratory reagent

Amount used

Remarks : Not applicable

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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: 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 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; 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 PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting; PROC15: Use as laboratory reagent
Environmental release category	: ERC2: Formulation of preparations

2.2 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises**Product characteristics**

Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100 % (unless stated differently)., Substance is a unique structure.
Remarks	: Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks	: Not applicable
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Frequency and duration of use

Remarks	: Covers daily exposures up to 8 hours (unless stated differently)
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Other operational conditions affecting workers exposure

Remarks	: Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.
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Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., Wear suitable coveralls to prevent exposure to the skin.

2.2 Contributing scenario controlling worker exposure for: PROC5: Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently)., Substance is a unique structure.

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide extraction ventilation at points where emissions occur.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., Wear suitable coveralls to prevent exposure to the skin.

ERC2: Formulation of**preparations****Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently)., Substance is a unique structure.

Frequency and duration of use

Continuous exposure : This substance only poses an acute risk, therefore a general population DNEL has not been derived, and an assessment of the risk from indirect exposure of man via the environment is not required.

Environment factors not influenced by risk management

Remarks : Not applicable

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Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, 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), Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently)., Substance is a unique structure.

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC4, CS16, CS55, CS56	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,9
			Worker – dermal, long-term – systemic	6,86 mg/kg/d	0,1
			Worker – long-term – systemic Combined routes		0,96
PROC5, CS30	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,5 mg/m3	0,1
			Worker – dermal, long-term – systemic	0,0685 mg/kg/d	0,0
			Worker – long-term – systemic Combined		0,09

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routes

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

CS16: General exposures (open systems)

CS55: Batch process

CS56: with sample collection

PROC5: Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;

CS30: Mixing operations (open systems)

Remarks: Not applicable

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

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

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 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; PROC7: Industrial spraying 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 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 PROC14: Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting; PROC15: Use as laboratory reagent
Environmental release category	:	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles**Product characteristics**

Concentration of the Substance in : Covers the percentage of the substance in the product up to

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Mixture/Article 100 % (unless stated differently).

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, 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;, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC7: Industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
Remarks : Liquid, vapour pressure < 0.5 kPa at STP

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Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings., Ensure operation is undertaken outdoors., Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training., Wear a full face respirator conforming to EN140 with Type A filter or better.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC7, CS97	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,2
			Worker – dermal, long-term – systemic	2,143 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,20
PROC7, CS34, CS10	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1,4 mg/m3	0,3
			Worker – dermal, long-term – systemic	4,286 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,29

Remarks: Not applicable
PROC7: Industrial spraying
CS97: Spraying (automatic/robotic)PROC7: Industrial spraying
CS34: Manual
CS10: Spraying**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

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When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

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: 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 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; 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

ERC8a, ERC8d: Wide

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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3,

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PROC4, PROC5, PROC8a, PROC8b, PROC10, 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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Roller application or brushing, Treatment of articles by dipping and pouring, Use as laboratory reagent, Hand-mixing with intimate contact and only PPE available

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide extraction ventilation at points where emissions occur., Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour), Ensure operation is undertaken outdoors.

Organizational measures to prevent /limit releases, dispersion and exposure

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Do not ingest. If swallowed then seek immediate medical assistance., Avoid carrying out activities involving exposure for more than 4 hours.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC11, CS34, CS10	ECETOC TRA Modified	Indoor	Worker – inhalation, long-term – systemic	2,8 mg/m3	0,5
			Worker – dermal, long-term – systemic	0,4286 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,5
PROC11, CS34, CS10	ECETOC TRA Modified	Outdoor	Worker – inhalation, long-term – systemic	1,4 mg/m3	0,3
			Worker – dermal, long-term – systemic	21,428 mg/kg/d	0,2
			Worker – long-term – systemic Combined routes		0,46

Remarks: Not applicable
 PROC11: Non industrial spraying
 CS34: Manual
 CS10: Spraying

PROC11: Non industrial spraying
 CS34: Manual
 CS10: Spraying

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

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

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
PC4: Anti-Freeze and de-icing products
PC8: Biocidal products (e.g. Disinfectants, pest control)
PC9a: Coatings and paints, thinners, paint removers
PC9b: Fillers, putties, plasters, modelling clay
PC9c: Finger paints
PC15: Non-metal-surface treatment products

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PC18: Ink and toners
PC23: Leather tanning, dye, finishing, impregnation and care products
PC24: Lubricants, greases, release products
PC31: Polishes and wax blends
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

ERC8a, ERC8d: Wide

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

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC1, PC4, PC8, PC9a, PC9b, 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, 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

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by the Exposure Scenario

Not applicable

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 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 PROC7: Industrial spraying 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 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

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

Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
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Technical conditions and measures / Organizational measures

Remarks	: A quantitative risk assessment is not required for the environment.
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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, 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, Transfer of substance

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or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes a good basic standard of occupational hygiene is implemented., Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC7: Industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes a good basic standard of occupational hygiene is implemented., Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Technical conditions and measures

Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance., Automate activity where possible.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., Wear suitable coveralls to prevent exposure to the skin.

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2.2 Contributing scenario controlling worker exposure for: PROC18: Greasing at high energy conditions**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes a good basic standard of occupational hygiene is implemented., Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Technical conditions and measures

Restrict area of openings to equipment., Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC7, CS10	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,2
			Worker – dermal, long-term – systemic	2,143 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,20
PROC18, CS17	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,2
			Worker – dermal, long-term – systemic	0,6855 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,19

Remarks: Not applicable

PROC7: Industrial spraying

CS10: Spraying

PROC18: Greasing at high energy conditions

CS17: Operation and lubrication of high energy open equipment

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

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

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 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 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 PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying 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 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

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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Environment factors not influenced by risk management

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Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, 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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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, Heat and pressure transfer fluids in dispersive, professional use but closed systems

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC17, PROC18: Lubrication at high energy conditions and in partly open process, Greasing at high energy conditions

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated

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differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC17, CS17	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,9
			Worker – dermal, long-term – systemic	0,2743 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,9
PROC17, CS17	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,90
			Worker – dermal, long-term – systemic	1,3715 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,91
PROC18, CS17	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,9
			Worker – dermal, long-term – systemic	0,6855 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,90

Remarks: Not applicable

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

CS17: Operation and lubrication of high energy open equipment

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

CS17: Operation and lubrication of high energy open equipment

PROC18: Greasing at high energy conditions

CS17: Operation and lubrication of high energy open equipment

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

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When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

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 PC24: Lubricants, greases, release products 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

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

Product characteristics

Concentration of the Substance in Mixture/Article : Unless otherwise stated, covers concentrations up to 50%.

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC1, PC31: Adhesives, sealants, Polishes and wax blends**Product characteristics**

Concentration of the Substance in Mixture/Article : Unless otherwise stated, covers concentrations up to 50%.

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Remarks : Unless otherwise stated, covers use frequency up to 0.02 times per day., covers exposure up to 0.2 hours per event.

Other given operational conditions affecting consumers exposure

Remarks : Unless otherwise stated assumes use at ambient temperatures, assumes use in a 20 cubic meter room,

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assumes use with typical ventilation.

Conditions and measures related to protection of consumer (e.g. behavioral advice, personal protection and hygiene)

Remarks : No specific RMMs identified beyond those OCs stated.

2.2 Contributing scenario controlling consumer exposure for: PC24: Lubricants, greases, release products**Product characteristics**

Concentration of the Substance in Mixture/Article : Unless otherwise stated, covers concentrations up to 50%.

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Remarks : Unless otherwise stated, covers use frequency up to 0.02 times per day., covers exposure up to 0.2 hours per event.

Other given operational conditions affecting consumers exposure

Remarks : Unless otherwise stated assumes use at ambient temperatures, assumes use in a 20 cubic meter room, assumes use with typical ventilation.

Remarks : Unless otherwise stated, covers concentrations up to 50%., covers use up to 6 days/year, covers use up to 1 time/on day of use;., covers skin contact area up to 428.75 cm², covers use amounts up to 73g, assumes use in a 20 cubic meter room, for each use event, covers exposure up to 0.17hr/event**Conditions and measures related to protection of consumer (e.g. behavioral advice, personal protection and hygiene)**

Remarks : No specific RMMs identified beyond those OCs stated.

3. Exposure estimation and reference to its sourceRemarks: Not applicable
PC24: Lubricants, greases, release products**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

1. Short title of Exposure Scenario: Metal working fluids / rolling oils - IndustrialMain User Groups : **SU 3:** Industrial uses: Uses of substances as such or in

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Sector of use	: preparations at industrial sites
Process category	: SU 3: Industrial Manufacturing (all)
	: 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;
	PROC7: Industrial spraying
	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
	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

ERC4: Industrial use

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

Product characteristics

Concentration of the Substance in Mixture/Article	: Covers percentage substance in the product up to 100 % (unless stated differently)
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Environment factors not influenced by risk management

Remarks	: Not applicable
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Technical conditions and measures / Organizational measures

Remarks	: A quantitative risk assessment is not required for the environment.
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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, 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, Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

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line, including weighing), Treatment of articles by dipping and pouring, Lubrication at high energy conditions and in partly open process

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC7: Industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374), coverall and eye protection., Wear a respirator conforming to EN140 with Type A filter or better.

2.2 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

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Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour)

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC7, CS10	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1 mg/m3	0,2
			Worker – dermal, long-term – systemic	2,143 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,20
PROC10, CS13	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1,5 mg/m3	0,3
			Worker – dermal, long-term – systemic	27,43 mg/kg/d	0,3
			Worker – long-term – systemic Combined routes		0,54

Remarks: Not applicable

PROC7: Industrial spraying

CS10: Spraying

PROC10: Roller application or brushing

CS13: Manual roller application or brushing.

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

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When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1

Confirm that RMMs and OCs are as described or of equivalent efficiency.

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 PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) 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 PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring 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

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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC10, PROC13: Use in closed process, no likelihood of exposure, Use in closed, continuous process with occasional controlled exposure, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Ensure operation is undertaken outdoors., Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour), Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training., Wear a respirator conforming to EN140 with Type A filter or better., Wear suitable gloves tested to EN374.

2.2 Contributing scenario controlling worker exposure for: PROC17: Lubrication at high energy conditions and in partly open process**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.

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

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC11, CS10	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1,4 mg/m3	0,3
			Worker – dermal, long-term – systemic	21,428 mg/kg/d	0,2
			Worker – long-term – systemic Combined routes		0,46
PROC11, CS10	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,4 mg/m3	0,1
			Worker – dermal, long-term – systemic	2,1428 mg/kg/d	0,0
			Worker – long-term – systemic Combined routes		0,09
PROC17, CS79	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	5 mg/m3	0,9
			Worker – dermal, long-term – systemic	1,3715 mg/kg/d	0,0

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			term – systemic		
			Worker – long-term – systemic Combined routes		0,91

Remarks: Not applicable
PROC11: Non industrial spraying
CS10: Spraying

PROC11: Non industrial spraying
CS10: Spraying

PROC17: Lubrication at high energy conditions and in partly open process
CS79: Metal machining operations

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

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1
Confirm that RMMs and OCs are as described or of equivalent efficiency.

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

Environmental release category : **ERC7:** Industrial use of substances in closed systems

ERC7: Industrial use

of substances in closed systems

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the

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environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, 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 preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, 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

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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 PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems
Environmental release category	: ERC9a, ERC9b: Wide dispersive indoor use of substances in closed systems, Wide dispersive outdoor use of substances in closed systems

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ERC9a, ERC9b: Wide

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

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC9, 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), 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), 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: 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 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

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ERC9a, ERC9b: Wide

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

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

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 10, SU 3: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys), 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 PROC5: Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact) Industrial setting;

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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
PROC14: Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting;
PROC15: Use as laboratory reagent

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

ERC4, ERC6c:

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

Environment factors not influenced by risk management

Remarks : Not applicable

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, 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;, Calendering operations, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities, Production of mixtures or articles by tableting, compression, extrusion, pelletization; Industrial setting;, Use as laboratory reagent

Amount used

Remarks : Not applicable

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

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: 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

ERC8a, ERC8d: Wide

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

Product characteristics

Concentration of the Substance in Mixture/Article	: Covers percentage substance in the product up to 100 % (unless stated differently)
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Environment factors not influenced by risk management

Remarks	: Not applicable
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Technical conditions and measures / Organizational measures

Remarks	: A quantitative risk assessment is not required for the environment.
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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC13: 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 non-dedicated facilities, Transfer of substance or preparation (charging/ discharging) from/ to vessels/

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large containers at dedicated facilities, Treatment of articles by dipping and pouring**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

2.2 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 100 % (unless stated differently)
 Remarks : Liquid, vapour pressure < 0.5 kPa at STP

Amount used

Remarks : Not applicable

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently)

Other operational conditions affecting workers exposure

Remarks : Assumes use at not more than 20°C above ambient temperature, unless stated differently., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Ensure operation is undertaken outdoors., Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour)

Organizational measures to prevent /limit releases, dispersion and exposure

Do not ingest. If swallowed then seek immediate medical assistance.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., Wear chemically resistant gloves (tested to EN374) in combination with specific activity training., Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation and reference to its source

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Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio
PROC11, CS24	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	1,4 mg/m3	0,3
			Worker – dermal, long-term – systemic	21,428 mg/kg/d	0,2
			Worker – long-term – systemic Combined routes		0,46
PROC11, CS25	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,6 mg/m3	0,1
			Worker – dermal, long-term – systemic	21,428 mg/kg/d	0,2
			Worker – long-term – systemic Combined routes		0,32

Remarks: Not applicable
 PROC11: Non industrial spraying
 CS24: Spraying/ fogging by manual application

PROC11: Non industrial spraying
 CS25: Spraying/ fogging by machine application

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

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1
 Confirm that RMMs and OCs are as described or of equivalent efficiency.

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

ERC8d: Wide

dispersive outdoor use of processing aids in open systems

Technical conditions and measures / Organizational measures

Remarks : A quantitative risk assessment is not required for the environment.

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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