

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Manufacture of substance

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC1: Manufacture of substances

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

Specific Environmental Release Category: ESVOC 1.1.v1

### Contributing Process Categories [PROC]:

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

### Scope of processes and activities covered by the Exposure Scenario:

Manufacture of the substance or use as an intermediate or process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 11000

#### Frequency and duration of use

Emission days (days/year): 100

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.001

Release fraction to wastewater from process (initial release prior to RMM): 0.00003

Release fraction to soil from process (initial release prior to RMM): 0.0001

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## Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 90

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment

removal (kg/day): 450000

Assumed domestic sewage treatment plant flow ( $m^3/day$ ): 10000

## Conditions and measures related to external treatment of waste for disposal

During manufacturing no waste of the substance is generated [ETW4].

## Conditions and measures related to external recovery of waste

During manufacturing no waste of the substance is generated [ERW2].

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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## Section 1 Exposure scenario title

### Title:

Distribution of substance

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC3: Formulation in materials

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

ERC5: Industrial use resulting in inclusion into or onto a matrix

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

ERC6b: Industrial use of reactive processing aids

ERC6c: Industrial use of monomers for polymerization

ERC6d: Industrial use of auxiliaries for polymerization processes in production of resins, rubbers, polymers

ERC7: Industrial use of substances in closed systems

Specific Environmental Release Category: ESVOC 1.1b.v1

### Contributing Process Categories [PROC]:

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

### Scope of processes and activities covered by the Exposure Scenario:

Loading (including marine vessel/barge, road/rail car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 30

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

# Annex to the extended Safety Data Sheet



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Local marine water dilution factor: 100

## Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.0001  
Release fraction to wastewater from process (initial release prior to RMM): 0.000001  
Release fraction to soil from process (initial release prior to RMM): 0.00001

## Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): 90  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

## Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

## Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 8200  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

## Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

## Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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## Section 1 Exposure scenario title

### Title:

Formulation & (re)packing of substances and mixtures

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC2: Formulation of preparations

Specific Environmental Release Category: ESVOC 2.2.v1

### Contributing Process Categories [PROC]:

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 preparations and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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

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

PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation

PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Formulation, packing, and re-packing of the substance and its mixtures in batch or continuous operations, including storage, material transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 7400

#### Frequency and duration of use

Emission days (days/year): 10

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

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Release fraction to air from process (after typical onsite RMMs, consistent with EU Solvent Emissions Directive requirements): 0.005

Release fraction to wastewater from process (initial release prior to RMM): 0.00002

Release fraction to soil from process (initial release prior to RMM): 0.0001

#### **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 0

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

#### **Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal (kg/day): 140000

Assumed domestic sewage treatment plant flow ( $m^3/day$ ): 2000

#### **Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

#### **Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

### **Section 3 Exposure estimation**

#### Health

Not applicable

#### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

### **Section 4 Guidance to check compliance with the Exposure Scenario**

#### Health

Not applicable

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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## Section 1 Exposure scenario title

### Title:

Use in Cleaning Agents (industrial use as a component of cleaning products)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
Specific Environmental Release Category: ESVOG 4.4a.v1

### Contributing Process Categories [PROC]:

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  
PROC10: Roller application or brushing of adhesive and other coating  
PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use as a component of cleaning products including transfers from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 1900

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 1.0

Release fraction to wastewater from process (initial release prior to RMM): 0.0000003

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Release fraction to soil from process (initial release prior to RMM): 0

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 70

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

**Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal (kg/day): 500000

Assumed domestic sewage treatment plant flow ( $m^3/day$ ): 2000

**Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

**Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

Health

Not applicable

Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

Health

Not applicable

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).



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## Section 1 Exposure scenario title

### Title:

Lubricants (industrial use)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

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

ERC7: Industrial use of substances in closed systems

Specific Environmental Release Category: ESVOC 4.6a.v1

### Contributing Process Categories [PROC]:

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 of adhesive and other coating

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

### Scope of processes and activities covered by the Exposure Scenario:

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

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 270

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

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### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.001  
Release fraction to wastewater from process (initial release prior to RMM): 0.000003  
Release fraction to soil from process (initial release prior to RMM): 0.001

### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): 70  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 68000  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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## Section 1 Exposure scenario title

### Title:

Use as binders and release agents (industrial use)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
Specific Environmental Release Category: ESVOC 4.10a.v1

### Contributing Process Categories [PROC]:

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  
PROC6: Calendering operations  
PROC7: Industrial spraying  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC10: Roller application or brushing of adhesive and other coating  
PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting, and handling of waste.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 900

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 1.0  
Release fraction to wastewater from process (initial release prior to RMM): 0.0000003  
Release fraction to soil from process (initial release prior to RMM): 0

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### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 80

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 240000

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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## Section 1 Exposure scenario title

### Title:

Use as a fuel (industrial use)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC7: Industrial use of substances in closed systems  
Specific Environmental Release Category: ESVOC 7.12a.v1

### Contributing Process Categories [PROC]:

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  
PROC16: Using material as fuel sources, limited exposure to unburned product to be expected

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 17000

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.005  
Release fraction to wastewater from process (initial release prior to RMM): 0.00001  
Release fraction to soil from process (initial release prior to RMM): 0

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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Risk from environmental exposure is driven by freshwater sediment [TCR1b]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 95

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

#### **Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 270000

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

#### **Conditions and measures related to external treatment of waste for disposal**

Combustion emissions limited by required exhaust emission controls [ETW1]. Combustion emissions considered in regional exposure assessment [ETW2].

#### **Conditions and measures related to external recovery of waste**

This substance is consumed during use and no waste of the substance is generated [ERW3]

### **Section 3 Exposure estimation**

#### Health

Not applicable

#### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

### **Section 4 Guidance to check compliance with the Exposure Scenario**

#### Health

Not applicable

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Functional fluids (industrial use)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC7: Industrial use of substances in closed systems  
Specific Environmental Release Category: ESVOC 7.13a.v1

### Contributing Process Categories [PROC]:

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

### Scope of processes and activities covered by the Exposure Scenario:

Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 500

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.001  
Release fraction to wastewater from process (initial release prior to RMM): 0.000003  
Release fraction to soil from process (initial release prior to RMM): 0.001

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): 0  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency  
of >=(%): 0

#### **Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment  
removal (kg/day): 120000  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

#### **Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

#### **Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

### **Section 3 Exposure estimation**

#### Health

Not applicable

#### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

### **Section 4 Guidance to check compliance with the Exposure Scenario**

#### Health

Not applicable

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).



Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in laboratories (industrial use)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC2: Formulation of preparation

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

Specific Environmental Release Category: not applicable

### Contributing Process Categories [PROC]:

PROC10: Roller application or brushing of adhesive and other coating

PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Use of the substance within laboratory settings, including material transfers and equipment cleaning

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 8.0

#### Frequency and duration of use

Emission days (days/year): 20

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.025

Release fraction to wastewater from process (initial release prior to RMM): 0.02

Release fraction to soil from process (initial release prior to RMM): 0.0001

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 0

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment

removal (kg/day): 140

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Water treatment applications (industrial use)

### Sector of use:

SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC3: Formulation in materials

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

Specific Environmental Release Category: ESVOC 3.22a.v1

### Contributing Process Categories [PROC]:

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

PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

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

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 93

#### Frequency and duration of use

Emission days (days/year): 300

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.05

Release fraction to wastewater from process (initial release prior to RMM): 0.95

Release fraction to soil from process (initial release prior to RMM): 0

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater sediment [TCR1b]. If discharging to domestic sewage treatment plant, additional onsite wastewater treatment required [TCR14].

Treat air emission to provide a typical removal efficiency of (%): 0

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 99.6

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 96.9

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 99.6

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 93

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in cleaning agents (professional application)

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

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

Specific Environmental Release Category: 8.4b.v1

### Contributing Process Categories [PROC]:

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

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand)

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.062

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.02

Release fraction to wastewater from process (initial release prior to RMM): 0.000001

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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Release fraction to soil from process (initial release prior to RMM): 0

**Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): N/A

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

**Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal (kg/day): 17

Assumed domestic sewage treatment plant flow ( $m^3/day$ ): 2000

**Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

**Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

Health

Not applicable

Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

Health

Not applicable

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Metal working fluid/Rolling Oils (Low Release)

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

Specific Environmental Release Category: ESVOC 8.7c.v1

### Contributing Process Categories [PROC]:

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)

PROC5: Mixing or blending in batch processes for formulation of preparations\* and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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

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

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

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

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.068

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.05  
Release fraction to wastewater from process (initial release prior to RMM): 0.025  
Release fraction to soil from process (initial release prior to RMM): 0

### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): N/A  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 16  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).



Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Metal working fluid/Rolling Oils (High Release)

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

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

Specific Environmental Release Category: ESVOC 8.7c.v1

### Contributing Process Categories [PROC]:

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)

PROC5: Mixing or blending in batch processes for formulation of preparations\* and articles (multistage and/or significant contact)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

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

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

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

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

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.068

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.015  
Release fraction to wastewater from process (initial release prior to RMM): 0.05  
Release fraction to soil from process (initial release prior to RMM): 0.05

### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): N/A  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 14  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Binders and release agents

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

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

Specific Environmental Release Category: ESVOC 8.10b.v1

### Contributing Process Categories [PROC]:

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

PROC6: Calendring 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

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC14: Production of preparations\* or articles by tableting, compression, extrusion, pelletisation

### Scope of processes and activities covered by the Exposure Scenario:

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

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.025

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.95  
Release fraction to wastewater from process (initial release prior to RMM): 0.025  
Release fraction to soil from process (initial release prior to RMM): 0.025

### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].  
Treat air emission to provide a typical removal efficiency of (%): N/A  
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 6.4  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in Agrochemicals

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

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

Specific Environmental Release Category: ESVOC 8.11a.v1

### Contributing Process Categories [PROC]:

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

### Scope of processes and activities covered by the Exposure Scenario:

Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.55

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.9

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Release fraction to wastewater from process (initial release prior to RMM): 0.01  
Release fraction to soil from process (initial release prior to RMM): 0.09

#### **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil**

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): N/A

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

#### **Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment

removal (kg/day): 100

Assumed domestic sewage treatment plant flow ( $m^3/day$ ): 2000

#### **Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

#### **Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

### **Section 3 Exposure estimation**

#### Health

Not applicable

#### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrisk model [EE2].

### **Section 4 Guidance to check compliance with the Exposure Scenario**

#### Health

Not applicable

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Functional fluids

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC9a: Wide dispersive indoor use of substances in closed systems

ERC9b: Wide dispersive outdoor use of substances in closed systems

Specific Environmental Release Category: ESVOC 9.13b.v1

### Contributing Process Categories [PROC]:

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

### Scope of processes and activities covered by the Exposure Scenario:

Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.14

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.05

Release fraction to wastewater from process (initial release prior to RMM): 0.025

Release fraction to soil from process (initial release prior to RMM): 0.025

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): N/A

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Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of  $\geq$ (%): 0  
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq$ (%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 29  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).



Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in Road and construction applications

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8d: Wide dispersive outdoor use of processing aids in open systems  
(ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix)  
Specific Environmental Release Category: ESVOC 8.15.v1

### Contributing Process Categories [PROC]:

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

### Scope of processes and activities covered by the Exposure Scenario:

Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.19

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.95  
Release fraction to wastewater from process (initial release prior to RMM): 0.01  
Release fraction to soil from process (initial release prior to RMM): 0.04

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): N/A

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 44

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in Laboratories

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems

Specific Environmental Release Category: ESVOC 8.17.v1

### Contributing Process Categories [PROC]:

PROC10: Roller application or brushing

PROC15: Use as laboratory reagent

### Scope of processes and activities covered by the Exposure Scenario:

Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.00014

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.5

Release fraction to wastewater from process (initial release prior to RMM): 0.5

Release fraction to soil from process (initial release prior to RMM): 0

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Risk from environmental exposure is driven by freshwater [TCR1a]. No wastewater treatment required [TCR6].

Treat air emission to provide a typical removal efficiency of (%): 0

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 0

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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### Organisation measures to prevent/limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 86.9

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 0.037

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

### Conditions and measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

## Section 3 Exposure estimation

### Health

Not applicable

### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

## Section 4 Guidance to check compliance with the Exposure Scenario

### Health

Not applicable

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in Water treatment chemicals

### Sector of use:

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix  
Specific Environmental Release Category: ESVOC 8.22b.v1

### Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of 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  
PROC13: Treatment of articles by dipping and pouring

### Scope of processes and activities covered by the Exposure Scenario:

Covers the use of the substance for the treatment of water in open and closed systems.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of worker exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 4.0

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.01  
Release fraction to wastewater from process (initial release prior to RMM): 0.99  
Release fraction to soil from process (initial release prior to RMM): 0.0

#### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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Risk from environmental exposure is driven by freshwater sediment [TCR1b]. If discharging to domestic sewage treatment plant, additional onsite wastewater treatment required [TCR14].

Treat air emission to provide a typical removal efficiency of (%): N/A

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 91.0

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 31.8

#### **Organisation measures to prevent/limit release from site**

Prevent discharge of undissolved substance to or recover from wastewater [OMS1] Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.0

Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 4.0

Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

#### **Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

#### **Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

### **Section 3 Exposure estimation**

#### Health

Not applicable

#### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

### **Section 4 Guidance to check compliance with the Exposure Scenario**

#### Health

Not applicable

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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## Section 1 Exposure scenario title

### Title:

Use in Cleaning agents (consumer applications)

### Sector of use:

SU21: Consumer uses: Private households (= general public = consumers)

### Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

### Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems.  
ERC8d: Wide dispersive outdoor use of processing aids in open systems  
Specific Environmental Release Category: ESVOC 8.4c.v1

### Contributing Product Category [PC]:

PC3: Air care products  
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  
PC24: Lubricants, greases, release products  
PC35: Washing and cleaning products (including solvent based products)  
PC38: Welding and soldering products, flux products

### Scope of processes and activities covered by the Exposure Scenario:

Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

## Section 2 Operational conditions and risk management measures

### Section 2.1 Control of consumer exposure

No exposure assessment presented for human health [G39]

### Section 2.2 Control of environmental exposure

#### Product characteristics:

Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].

#### Amounts used

Maximum daily site tonnage (kg/day): 0.016

#### Frequency and duration of use

Emission days (days/year): 365

#### Environmental factors not influenced by risk management

Local freshwater dilution factor: 10  
Local marine water dilution factor: 100

#### Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.95  
Release fraction to wastewater from process (initial release prior to RMM): 0.025  
Release fraction to soil from process (initial release prior to RMM): 0.025

#### Conditions and measures related to municipal sewage treatment plant

Substance: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)  
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Estimated substance removal from wastewater via domestic sewage treatment (%): 86.9  
Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day): 4.4  
Assumed domestic sewage treatment plant flow ( $\text{m}^3/\text{day}$ ): 2000

#### **Conditions and measures related to external treatment of waste for disposal**

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]

#### **Conditions and measures related to external recovery of waste**

External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]

### **Section 3 Exposure estimation**

#### Health

Not applicable

#### Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model [EE2].

### **Section 4 Guidance to check compliance with the Exposure Scenario**

#### Health

Not applicable

#### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).