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): 33000

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1100000
Assumed domestic sewage treatment plant flow (m³/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).

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): 50

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): 0.0001
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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 78000
Assumed domestic sewage treatment plant flow (m³/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).

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 tabletting, 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, tabletting, 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): 3700

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 (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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 330000
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).

Section 1 Exposure scenario title

Title:
Use in coatings (industrial application)

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 4.3a.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)
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
PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation.
PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:
Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidized bed on production lines and film formation) and equipment cleaning, 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): 19000

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): 0.98
Release fraction to wastewater from process (initial release prior to RMM): 0.00007
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 sediment [TCR1b]. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR9].
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 >=(%): 58.1
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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 94000
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).

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: ESVOC 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): 5000

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

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil
Risk from environmental exposure is driven by agricultural soil [TCR1f]. 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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 3800000
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).

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): 5000

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
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 (%): 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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 2200000
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).

Section 1 Exposure scenario title

Title:
Use as a Metal Working Fluid / Rolling Oils (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 4.7a.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)
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

Scope of processes and activities covered by the Exposure Scenario:
Covers the use in formulated metal working fluids/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

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): 300

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): 0.02
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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 400000
Assumed domestic sewage treatment plant flow (m³/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).

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 tabletting, 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): 370

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 560000
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).

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): 5000

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 660000
Assumed domestic sewage treatment plant flow (m³/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).

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 600000
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).

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): 0.5

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 330
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Use in coatings (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: ESVOC 8.3b.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
PROC10: Roller application or brushing of adhesive and other coating
PROC11: Non industrial spraying
PROC13: Treatment of articles by dipping and pouring
PROC15: Use as laboratory reagent
PROC19: Hand-mixing with intimate contact and only PPE available

Scope of processes and activities covered by the Exposure Scenario:
Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods and film formation) and equipment cleaning, maintenance and associated laboratory activities.

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): 0.029

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): 0.98
Release fraction to wastewater from process (initial release prior to RMM): 0.01
Release fraction to soil from process (initial release prior to RMM): 0.01

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 42
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).

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): 0.014

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 22
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Lubricant (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 9.6b.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)
PROC13: Treatment of articles by dipping and pouring
PROC17: Lubrication at high energy conditions and in partly open process
PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems

Scope of processes and activities covered by the Exposure Scenario:
Covers the use of formulated lubricants in closed or contained systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

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): 365

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 68
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Lubricant (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 8.6c.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)
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
PROC18: Greasing at high energy conditions
PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems

Scope of processes and activities covered by the Exposure Scenario:
Covers the use of formulated lubricants in open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

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): 0.048

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): 0.015
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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 50
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).

Section 1 Exposure scenario title

Title:
Metal working fluid (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): 0.0021

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 3.2
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Metal working fluid (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): 0.0021

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): 0.015
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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 32
Assumed domestic sewage treatment plant flow (m³/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).

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): 0.025

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

Other given operational conditions affecting environmental exposure
Release fraction to air from process (initial release prior to RMM): 0.9

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 38
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Use as a Fuel

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 9.12b.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): 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): 0.0001
Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Release fraction to soil from process (initial release prior to RMM): 0.00001

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 (%): 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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 21
Assumed domestic sewage treatment plant flow (m³/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).

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, refriegerants, 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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 120
Assumed domestic sewage treatment plant flow (m³/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).

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): 0.023

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 34
Assumed domestic sewage treatment plant flow (m³/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).

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): 0.000014

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

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 (%): 91.7
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 0.014
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Use in coatings (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 8.3c.v1

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

Scope of processes and activities covered by the Exposure Scenario:
Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

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): 2.2

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): 0.985
Release fraction to wastewater from process (initial release prior to RMM): 0.01
Release fraction to soil from process (initial release prior to RMM): 0.005

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 660
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).

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): 0.014

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

Estimated substance removal from wastewater via domestic sewage treatment (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 20
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Use in Lubricants (consumer applications) Low Release

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]:
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 9.6d.v1

Contributing Product Category [PC]:
PC1: Adhesives, sealants
PC24: Lubricants, greases, release products
PC31: Polishes and wax blends

Scope of processes and activities covered by the Exposure Scenario:
Covers the consumer use of formulated lubricants in open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

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): 0.034

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

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 50
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).

Section 1 Exposure scenario title

Title:
Use in Lubricants (consumer applications) High Release

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 8.6e.v1

Contributing Product Category [PC]:
PC1: Adhesives, sealants
PC24: Lubricants, greases, release products
PC31: Polishes and wax blends

Scope of processes and activities covered by the Exposure Scenario:
Covers the consumer use of formulated lubricants in open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

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): 0.034

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): 0.015
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

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment

removal (kg/day): 39
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Use as a fuel

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]:
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 9.12c.v1

Contributing Product Category [PC]:
PC13: Fuels

Scope of processes and activities covered by the Exposure Scenario:
Covers consumer uses in liquid fuels.

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): 0.041

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

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 64
Assumed domestic sewage treatment plant flow (m³/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).

Section 1 Exposure scenario title

Title:
Use as functional fluids (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]:
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 9.13c.v1

Contributing Product Category [PC]:
PC16: Heat transfer fluids
PC17: Hydraulic fluids

Scope of processes and activities covered by the Exposure Scenario:
Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

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): 0.027

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

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 91.7
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 38
Assumed domestic sewage treatment plant flow (m³/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).