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
SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU9: Manufacture of fine chemicals
SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

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 a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC2:

Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC3:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Process sampling [CS2] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] (open systems) [CS108] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] (closed systems) [CS107] PROC8b:
Handle substance within a closed system [E47]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

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): 45000

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): 0.05
Release fraction to wastewater from process (initial release prior to RMM): 0.0003
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] If discharging to domestic sewage treatment plant, no onsite wastewater treatment required [TCR10].
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 >=(%): 39.0
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 720000
Assumed domestic sewage treatment plant flow (m^3/day): 10000

Conditions and measures related to external treatment of waste for disposal
During manufacturing no waste of the substance is generated [ETW4].

Conditions and measures related to external recovery of waste
During manufacturing no waste of the substance is generated [ERW2].

Section 3 Exposure estimation

Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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 Substance as intermediate

Sector of use:
SU3: Industrial uses: Uses of substances as such or in mixtures at industrial sites
SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU9: Manufacture of fine chemicals

Subsequent service life relevant for that use:
Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:
ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) 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:
Use of substance as an intermediate within closed or contained systems (not related to strictly controlled conditions). Includes incidental exposure during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/trail car and bulk container).

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC2:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC3:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Process sampling [CS2] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] (open systems) [CS108] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] (closed systems) [CS107] PROC8b:
Handle substance within a closed system [E47]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

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): 1300

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): 0.01
Release fraction to wastewater from process (initial release prior to RMM): 0.0003
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 (%): 80
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 0.0
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 140000
Assumed domestic sewage treatment plant flow (m^3/day): 2000

Conditions and measures related to external treatment of waste for disposal
This substance is consumed during use and no waste of the substance is generated [ETW5].

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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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
SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU9: Manufacture of fine chemicals

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC2:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC3:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
No other specific measures identified [EI20]

Process sampling [CS2] PROC3:
No other specific measures identified [EI20]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] (open systems) [CS108] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] (closed systems) [CS107] PROC8b:
No other specific measures identified [EI20]

Drum and small package filling [CS6] PROC9:
No other specific measures identified [EI20]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

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): 49

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): 0.00001

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 (%): 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 240000
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 treatment and disposal of waste should comply with applicable local and/or national regulations [ERW3]

Section 3 Exposure estimation

Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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
SU10: Formulation (mixing) of preparations and/or re-packaging (excluding alloys)

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, pelletisation
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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC2:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC3:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

Process sampling [CS2] PROC3:
No other specific measures identified [EI20]

Batch processes at elevated temperatures [CS136] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC3:
Formulate in enclosed or ventilated mixing vessels [E46]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Mixing operations (open systems) [CS30] PROC5:
No other specific measures identified [EI20]

Manual [CS34] transfer from/pouring from containers [CS22] PROC8a:
No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] PROC8b:
No other specific measures identified [EI20]

Drum and small package filling [CS6] PROC9:
No other specific measures identified [EI20]

Production or preparation of articles by tabletting, compression, extrusion or pelletisation [CS100] PROC14:
No other specific measures identified [EI20]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

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): 3600

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): 0.025
Release fraction to wastewater from process (initial release prior to RMM): 0.0002
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 220000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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, pelletisation
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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] with sample collection [CS56] Use in contained systems [CS38] PROC2:
No other specific measures identified [EI20]

Film formation – force drying (50 – 100 °C). Stoving (> 100 °C). UV/EB radiation curing [CS94] Operation is carried out at elevated temperature (> 20 °C above ambient temperature [OC7] PROC2:
No other specific measures identified [EI20]

Mixing operations (closed systems) [CS29] General exposures (closed systems) [CS15] PROC3:
No other specific measures identified [EI20]

Film formation – air drying [CS95] PROC4:
No other specific measures identified [EI20]

Preparation of material for application [CS96] Mixing operations (open systems) [CS30] PROC5:
No other specific measures identified [EI20]

Spraying (automatic/robotic) [CS97] PROC7:
No other specific measures identified [EI20]

Manual [CS34] spraying [CS10] PROC7:
No other specific measures identified [EI20]

Material transfers [CS3] PROC8a, PROC8b:
No other specific measures identified [EI20]

Material transfers [CS3] Drum/batch transfers [CS8] Transfer from/pouring from containers [CS22] PROC9:
No other specific measures identified [EI20]

Roller, spreader, flow application [CS98] PROC10:
Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings [E60]

Dipping, immersion and pouring [CS4] PROC13:
No other specific measures identified [EI20]

Production or preparation of articles by tabletting, compression extrusion or pelletisation [CS100] PROC14:
No other specific measures identified [EI20]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

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): 20000

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): 0.0007
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 >=(%): 88.2
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 62000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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]:
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
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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Automated process with (semi) closed systems [CS93]. Use in contained systems [CS38] PROC2:
No other specific measures identified [EI20]

Application of cleaning products in closed systems [CS101] PROC2:
No other specific measures identified [EI20]

Automated process with (semi) closed systems [CS93]. Drum/batch transfers [CS8] PROC3:
No other specific measures identified [EI20]

Use in contained batch processes [CS37] PROC4:
No other specific measures identified [EI20]

Cleaning with high pressure washers [CS44] PROC7:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8a:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC8b:
No other specific measures identified [EI20]

Cleaning with low-pressure washers [CS42] PROC10:
No other specific measures identified [EI20]

Manual [CS34] surfaces [CS48] cleaning [CS47] PROC10:
No other specific measures identified [EI20]

Degreasing small objects in cleaning station [CS41] PROC13:
No other specific measures identified [EI20]]

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): 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): 0.000003
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 [TCR1] 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 4600000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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 (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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC2:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

General exposures (closed systems) [CS15] PROC3:
Handle substance within a closed system [E47]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Spraying [CS10] PROC7:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC8a:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC8b:
No other specific measures identified [EI20]

Maintenance of small items [CS18] PROC8a:
No other specific measures identified [EI20]

Maintenance (of larger plant items) and machine set up [CS77] PROC8b:
No other specific measures identified [EI20]

Maintenance (of larger plant items) and machine set up [CS77] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Initial factory fill of equipment [CS75] PROC9:
No other specific measures identified [EI20]

Remanufacture of reject articles [CS19] PROC9:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Treatment by dipping and pouring [CS35] PROC13:
No other specific measures identified [EI20]

Operation and lubrication of high energy open equipment [CS17] PROC17:
No other specific measures identified [EI20]

Operation and lubrication of high energy open equipment [CS17] PROC18:
No other specific measures identified [EI20]

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): 380

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): 0.01
Release fraction to wastewater from process (initial release prior to RMM): 0.00003
Release fraction to soil from process (initial release prior to RMM): 0.001

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1400000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1, PROC2, PROC3:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC1, PROC2, PROC3:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC1, PROC2, PROC3:
No other specific measures identified [EI20]

Automated metal rolling/forming [CS80] Used in contained system [CS38] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC2:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
No other specific measures identified [EI20]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Semi-automated metal rolling/forming [CS83] PROC4:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC5:
No other specific measures identified [EI20]

Spraying [CS10] PROC7:
No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] Non-dedicated facility [CS82] and dedicated facility [CS81] PROC8a, PROC8b:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Process sampling [CS2] PROC8b:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC9:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Treatment by dipping and pouring [CS35] PROC13:
No other specific measures identified [EI20]

Metal machining operations [CS79] PROC17:
No other specific measures identified [EI20]

Semi-automated metal rolling/forming [CS83] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC17:

No other specific measures identified [EI20]

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): 0.02
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

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1400000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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 Blowing Agent

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 4.9.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)
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)
PROC12: Use of blowing agents in manufacture of foam

Scope of processes and activities covered by the Exposure Scenario:
Use as a blowing agent for rigid and flexible foams, including material transfers, mixing and injection, curing, cutting, storage and packing.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Mixing operations (closed systems) [CS29] PROC1:
No other specific measures identified [EI20]

Mixing operations (closed systems) [CS29] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC3:
No other specific measures identified [EI20]

Intermediate polymer storage [CS66] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC3:
No other specific measures identified [EI20]

Centrifuging including discharging [CS127] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC3:
No other specific measures identified [EI20]

Mixing operations (closed systems) [CS29] PROC3:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Semi-bilk packaging [CS128] PROC8b:
No other specific measures identified [EI20]

Drum and small package filling [CS6] Filling/preparation of equipment from drums or containers [CS45] PROC9:
No other specific measures identified [EI20]

Extrusion and expansion of polymer mass [CS122] PROC12:
No other specific measures identified [EI20]

Cutting and shaving [CS134] PROC12:
No other specific measures identified [EI20]

Collection and reprocessing of shavings, cuttings, etc. [CS123] PROC12:
No other specific measures identified [EI20]

Product packaging [CS124] PROC12:
No other specific measures identified [EI20]

Material storage [CS67] PROC12:
No other specific measures identified [EI20]

Drying and storage [CS12] PROC12:
No other specific measures identified [EI20]

Treatment by heating [CS129] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC12:
No other specific measures identified [EI20]

Article formation in mould [CS130] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC12:
No other specific measures identified [EI20]

Cutting by heated wire [CS131] Manual [CS34] PROC12:
No other specific measures identified [EI20]

Foaming [CS132] PROC12:
No other specific measures identified [EI20]

Compression [CS133] PROC12:
No other specific measures identified [EI20]

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): 2000

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): 0.00003
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 (%): 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1400000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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 or 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
PROC13: Treatment of articles by dipping and pouring
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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Material transfers [CS3] PROC1:
Transfer via enclosed lines [E52]

Material transfers [CS3] PROC2:

Transfer via enclosed lines [E52]

Material transfers [CS3] PROC3:
Transfer via enclosed lines [E52]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

Mixing operations (closed systems) [CS29] PROC3:
No other specific measures identified [EI20]

Mixing operations (open systems) [CS30] PROC4:
No other specific measures identified [EI20]

Casting operations [CS32] (open systems) [CS108] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] Aerosol generation due to elevated process temperature [OC25] PROC6:
No other specific measures identified [EI20]

Spraying [CS10] Machine [CS33] PROC7:
No other specific measures identified [EI20]

Spraying [CS10] Manual [CS34] PROC7:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] PROC8b:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Mould forming [CS31] PROC14:
No other specific measures identified [EI20]

Treatment by dipping and pouring [CS35] PROC13:
No other specific measures identified [EI20]

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): 710

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): 0.000003
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 (%): 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 3000000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC2:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC3:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84] Transfer via enclosed lines [E52]

Use as a fuel [GEST12] PROC16:
Handle substance within a closed system [E47]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] Dedicated facility [CS81] PROC8b:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] PROC8b:
No other specific measures identified [EI20]

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): 0.05
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 [TCR1a]. 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment

removal (kg/day): 1700000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Bulk transfers [CS14] (closed systems) [CS107] PROC1:
No other specific measures identified [EI20]

Bulk transfers [CS14] (closed systems) [CS107] PROC2:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC2:
No other specific measures identified [EI20]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

General exposures (open systems) [CS16] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC4:
No other specific measures identified [EI20]

Equipment maintenance [CS5] PROC8a:
No other specific measures identified [EI20]

Filling/preparation of equipment from drums or containers [CS45] PROC8a:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] PROC8b:
No other specific measures identified [EI20]

Filling of articles/equipment [CS84] (closed systems) [CS107] PROC9:
No other specific measures identified [EI20]

Remanufacture of reject articles [CS19] PROC9:
No other specific measures identified [EI20]

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): 0.01
Release fraction to wastewater from process (initial release prior to RMM): 0.00003
Release fraction to soil from process (initial release prior to RMM): 0.001

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 (%): 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1400000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Cleaning [CS47] PROC10:
No other specific measures identified [EI20

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20

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): 40

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 2200
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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].

Section 1 Exposure scenario title

Title:
Rubber Production and Processing (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]:

ERC1: Manufacture of substances
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC6d: Industrial use of auxiliaries for polymerization processes in production of resins, rubbers, polymers
Specific Environmental Release Category: ESVOC 4.19.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)
PROC6: Calendering operations
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)
PROC13: Treatment of articles by dipping and pouring
PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15: Use as laboratory reagent
PROC21: Low energy manipulation of substances bound in materials and/or articles

Scope of processes and activities covered by the Exposure Scenario:
Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Material transfers [CS3] (closed systems) [CS107] PROC1:
No other specific measures identified [EI20]

Material transfers [CS3] (closed systems) [CS107] PROC2:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
No other specific measures identified [EI20]

Bulk weighing [CS91] PROC1:
No other specific measures identified [EI20]

Bulk weighing [CS91] PROC2:
No other specific measures identified [EI20]

Additive premixing [CS92] PROC3:
No other specific measures identified [EI20]

Additive premixing [CS92] PROC4:
No other specific measures identified [EI20]

Additive premixing [CS92] PROC5:
No other specific measures identified [EI20]

Calendering (including Banburys) [CS64] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC6:
No other specific measures identified [EI20]

Vulcanisation [CS70] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC6:
No other specific measures identified [EI20]

Vulcanisation [CS70] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] Manual [CS34] PROC6:
No other specific measures identified [EI20]

Cooling cured articles [CS71] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC6:
No other specific measures identified [EI20]

Tyre build up [CS112] PROC7:
No other specific measures identified [EI20]

Equipment maintenance [CS5] PROC8a:
No other specific measures identified [EI20]

Material transfers [CS3] PROC8b:
No other specific measures identified [EI20]

Material transfers [CS3] PROC9:
No other specific measures identified [EI20]

Small scale weighing [CS90] PROC9:
No other specific measures identified [EI20]]

Production of articles by dipping and pouring [CS113] PROC13:
No other specific measures identified [EI20]

Pressing uncured rubber blanks [CS73] PROC14:
No other specific measures identified [EI20]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

Finishing operations [CS102] PROC21:
No other specific measures identified [EI20]

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): 250

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): 0.01
Release fraction to wastewater from process (initial release prior to RMM): 0.0003
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 140000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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 Polymer Processing (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 4.21a.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)
PROC6: Calendering operations
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC13: Treatment of articles by dipping and pouring
PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC21: Low energy manipulation of substances bound in materials and/or articles

Scope of processes and activities covered by the Exposure Scenario:
Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing, and forming activities, material re-works, storage and associated maintenance.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Bulk transfers [CS14] (closed systems) [CS107] PROC1:
No other specific measures identified [EI20]

Bulk transfers [CS14] (closed systems) [CS107] PROC2:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

Bulk weighing [CS91] PROC1:
No other specific measures identified [EI20]

Bulk weighing [CS91] PROC2:
Handle substance within a closed system [E47]

Additive premixing [CS92] PROC3:
No other specific measures identified [EI20]

Additive premixing [CS92] PROC4:
No other specific measures identified [EI20]

Additive premixing [CS92] mixing operations (open systems) [CS30] PROC5:
No other specific measures identified [EI20]

Calendering (including Banburys) [CS64] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC6:
No other specific measures identified [EI20]

Equipment maintenance [CS5] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC9:
No other specific measures identified [EI20]

Small scale weighing [CS90] PROC9:
No other specific measures identified [EI20]

Production of articles by dipping and pouring [CS113] PROC13:
No other specific measures identified [EI20]

Extrusion and masterbatching [CS88] PROC14:
No other specific measures identified [EI20]

Injection moulding of articles [CS89] PROC14:
No other specific measures identified [EI20]

Finishing operations [CS102] PROC21:
No other specific measures identified [EI20]

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): 1300

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): 0.5
Release fraction to wastewater from process (initial release prior to RMM): 0
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 (%): 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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 14000000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

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 Mining Operations (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 4.23.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)

Scope of processes and activities covered by the Exposure Scenario:
Covers the use of substance in extraction processes at mining operations, including material transfers, winning and separation activities, and substance recovery and disposal.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Mixing and blending [CS23] (closed systems) [CS107] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC2:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC3:
No other specific measures identified [EI20]

Ion exchange processes [CS105] (closed systems) [CS107] PROC2:
No other specific measures identified [EI20]

Process sampling [CS2] PROC3:
No other specific measures identified [EI20]

Phase separation [CS106] (closed systems) [CS107] PROC4:
No other specific measures identified [EI20]

General exposures (open system) [CS16] PROC5:
No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] PROC8b:
No other specific measures identified [EI20]

Pouring from small containers [CS9] PROC9:
No other specific measures identified [EI20]

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): 2000

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): 0.25
Release fraction to wastewater from process (initial release prior to RMM): 0.5
Release fraction to soil from process (initial release prior to RMM): 0.05

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil
Risk from environmental exposure is driven by freshwater sediment [TCR1b].
If discharging to domestic sewage treatment plant, additional onsite wastewater treatment required [TCR14].

Treat air emission to provide a typical removal efficiency of (%): 80
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >=(%): 99.8
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of >=(%): 95.6

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 99.8
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 2000
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
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
Handle Substance within a closed system. [E47]

General exposures (closed systems) [CS15] Use in contained systems [CS38] PROC2:
Handle Substance within a closed system. [E47]

Filling/preparation of equipment from drums or containers [CS45] Use in contained systems [CS38] PROC2:
Handle Substance within a closed system. [E47]

Preparation of material for application [CS96] Use in contained batch processes [CS37] PROC3:
No other specific measures identified [EI20]

Film formation – air drying [CS95] Outdoor [OC9] PROC4:
No other specific measures identified [EI20]

Film formation – air drying [CS95] Indoor [OC8] PROC4:
No other specific measures identified [EI20]

Preparation of material for application [CS96] Indoor [OC8] PROC5:
No other specific measures identified [EI20]

Preparation of material for application [CS96] Outdoor [OC9] PROC5:
No other specific measures identified [EI20]

Material transfers [CS3] Drum/batch transfers [CS8] PROC8a:
No other specific measures identified [EI20]

Material transfers [CS3] Drum/batch transfers [CS8] Dedicated facility [CS81] PROC8b:
No other specific measures identified [EI20]

Roller, spreader, flow application [CS98] Indoor [OC8] PROC10:
No other specific measures identified [EI20]

Roller, spreader, flow application [CS98] Outdoor [OC9] PROC10:
No other specific measures identified [EI20]

Manual [CS34] spraying [CS10] Indoor [OC8] PROC11:
No other specific measures identified [EI20]

Manual [CS34] spraying [CS10] Outdoor [OC9] PROC11:
No other specific measures identified [EI20]

Dipping, immersion and pouring [CS4] Indoor [OC8] PROC13:
No other specific measures identified [EI20]

Dipping, immersion and pouring [CS4] Outdoor [OC9] PROC13:
No other specific measures identified [EI20]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

Hand application – finger paints, pastels, adhesives [CS72] Indoor [OC8] PROC19:
No other specific measures identified [EI20]

Hand application – finger paints, pastels, adhesives [CS72] Outdoor [OC9] PROC19:
No other specific measures identified [EI20]

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): 0.41

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1500
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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: ESVOC 8.4b.v.1

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Automated process with (semi) closed system [CS93] Use in contained system [CS38] PROC2:
No other specific measures identified [EI20]

Automated process with (semi) closed system [CS93] Drum/batch transfers [CS8] Used in contained systems [CS38] PROC3:
No other specific measures identified [EI20]

Semi Automated process (e.g.: Semi automatic application of floor care and maintenance products) [CS76] PROC4:
No other specific measures identified [EI20]

Application of cleaning products in closed systems [CS101] Outdoor [OC9] PROC4:
No other specific measures identified [EI20]

Cleaning of medical devices [CS74] PROC4:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] PROC8a:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] PROC8b:
No other specific measures identified [EI20]

Cleaning with low-pressure washers [CS42] Rolling, Brushing [CS51] no spraying [CS60] PROC10:
No other specific measures identified [EI20]

Manual [CS34] Surfaces [CS48] Cleaning [CS47] Spraying [CS10] PROC10:
No other specific measures identified [EI20]

Manual [CS34] Surfaces [CS48] Cleaning [CS47] PROC10:
No other specific measures identified [EI20]

Ad hoc manual application via trigger sprays, dipping, etc. [CS27] Rolling, Brushing [CS51] PROC10:
No other specific measures identified [EI20]

Ad hoc manual application via trigger sprays, dipping, etc. [CS27] Rolling, Brushing [CS51] PROC10:
No other specific measures identified [EI20]

Cleaning with high-pressure washers [CS44] Spraying [CS10] Indoor [OC8] PROC11:
No other specific measures identified [EI20]

Cleaning with high-pressure washers [CS44] Spraying [CS10] Outdoor [OC9] PROC11:
No other specific measures identified [EI20]

Manual [CS34] Surfaces [CS48] Cleaning [CS47] Dipping, immersion and pouring [CS4] PROC13:
No other specific measures identified [EI20]

Manual [CS34] Surfaces [CS48] Cleaning [CS47] PROC13:
No other specific measures identified [EI20]

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): 0.032

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 170
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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)
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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC2:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC3:
No other specific measures identified [EI20]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] Non-dedicated facility [CS82] PROC8a:
No other specific measures identified [EI20]

Maintenance of small items[CS18] Operation is carried out at elevated temperature (>then 20°C above ambient temperature) [OC7] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] Dedicated facility [CS81] PROC8b:
No other specific measures identified [EI20]

Maintenance (of larger plant items) and machine setup [CS77] PROC8b:
No other specific measures identified [EI20]

Maintenance (of larger plant items) and machine setup [CS77] Operation is carried out at elevated temperature (> then 20°C above ambient temperature) [OC7] PROC8b:
No other specific measures identified [EI20]

Engine lubricant service [CS78] PROC9:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Spraying [CS10] PROC11:
No other specific measures identified [EI20]

Treatment by dipping and pouring [CS35] PROC13:
Allow time for product to drain from workpiece [EI21]

Operation and lubrication of high energy open equipment [CS17] Indoor [OC8] PROC17:
No other specific measures identified [EI20]

Operation and lubrication of high energy open equipment [CS17] Outdoor [OC9] PROC17:
No other specific measures identified [EI20]

Operation and lubrication of high energy open equipment [CS17] PROC18:
No other specific measures identified [EI20]

Operation of equipment containing engine oils and similar [CS26] PROC 20
No other specific measures identified [EI20]

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 227
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC2:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
No other specific measures identified [EI20]

General exposures (closed systems) [CS15] PROC3:
No other specific measures identified [EI20]

General exposures (open systems) [CS16] PROC4:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] Non-dedicated facility [CS82] PROC8a:
No other specific measures identified [EI20]

Maintenance of small items[CS18] Operation is carried out at elevated temperature (>then 20°C above ambient temperature) [OC7] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] Dedicated facility [CS81] PROC8b:
No other specific measures identified [EI20]

Maintenance (of larger plant items) and machine setup [CS77] PROC8b:
No other specific measures identified [EI20]

Maintenance (of larger plant items) and machine setup [CS77] Operation is carried out at elevated temperature (> then 20°C above ambient temperature) [OC7] PROC8b:
No other specific measures identified [EI20]

Engine lubricant service [CS78] PROC9:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Spraying [CS10] PROC11:
No other specific measures identified [EI20]

Treatment by dipping and pouring [CS35] PROC13:
Allow time for product to drain from workpiece [EI21]

Operation and lubrication of high energy open equipment [CS17] Indoor [OC8] PROC17:
No other specific measures identified [EI20]

Operation and lubrication of high energy open equipment [CS17] Outdoor [OC9] PROC17:
No other specific measures identified [EI20]

Operation and lubrication of high energy open equipment [CS17] PROC18:
No other specific measures identified [EI20]

Operation of equipment containing engine oils and similar [CS26] PROC 20
No other specific measures identified [EI20]

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): 0.0051

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): 0.4
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 26
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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 or release agents

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

Subsequent service life relevant for that use:
Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:
ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8d: Wide dispersive outdoor use of processing aids in open systems
Specific Environmental Release Category: ESVOC 8.10b.v1

Contributing Process Categories [PROC]:
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC6: Calendering operations
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC10: Roller application or brushing of adhesive and other coating
PROC11: Non industrial spraying
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 by spraying, brushing, and handling of waste.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Material transfers [CS3] (closed systems) [CS107] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Material transfers [CS3] (closed systems) [CS107] PROC2:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
No other specific measures identified [EI20]

Material transfers [CS3] (closed systems) [CS107] PROC3:
No other specific measures identified [EI20]

Mixing operations (closed systems) [CS29] PROC3:
No other specific measures identified [EI20]

Mixing operations (open systems) [CS30] PROC4:
No other specific measures identified [EI20]

Casting operations [CS32] (open systems) [CS108] Operation is carried out at elevated temperature (> then 20°C above ambient temperature) [OC7] PROC6:
No other specific measures identified [EI20]

Drum batch transfers. [CS8] Non-dedicated facility [CS82] PROC8a:
No other specific measures identified [EI20]

Drum batch transfers. [CS8] PROC8b:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Spraying [CS10] Machine [CS33] PROC11:
No other specific measures identified [EI20]

Spraying [CS10] Manual [CS34] PROC11:
No other specific measures identified [EI20]

Mold forming [CS31] PROC14:
No other specific measures identified [EI20]

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): 0.0096

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

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 49
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa at STP [OC5]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Material storage [CS67] PROC1:
No other specific measures identified [EI20]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

Mixing and blending [CS23] PROC4:
No other specific measures identified [EI20]

Disposal of wastes [CS28] PROC8a:
No other specific measures identified [EI20]

Clean-down and maintenance of equipment [CS26] PROC8a:
No other specific measures identified [EI20]

Transfer from/pouring from containers [CS22] PROC8b:
No other specific measures identified [EI20]

Spraying/fogging by manual application [CS24] PROC11:
No other specific measures identified [EI20]

Spraying/fogging by machine application [CS25] PROC11:
No other specific measures identified [EI20]

Ad hoc manual application via trigger sprays, dipping, etc. [CS27] PROC13:
No other specific measures identified [EI20]

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): 0.38

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 (%): 96.2

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1400
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:

Store substance within a closed system [E84]

General exposures (closed systems) [CS15] PROC2:
Handle substance within a closed system [E47]

General exposures (closed systems) [CS15] PROC3:
Handle substance within a closed system [E47]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Bulk transfers [CS14] PROC8b:
Handle substance within a closed system [E47] Clear transfer lines prior to de-coupling [E39]

Drum/batch transfers [CS8] PROC8b:
No other specific measures identified [EI20]

Refueling [CS507] PROC8b:
No other specific measures identified [EI20]

Use as a fuel [GEST12] (closed systems) [CS107] PROC16:
Handle substance within a closed system [E47]

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): 0.01

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): 0.00001
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 53
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1:
Handle substance within a closed system [E47]

Material storage [CS67] PROC1:
Store substance within a closed system [E84]

General exposures (closed systems) [CS15] PROC2:

No other specific measures identified [EI20]

Material storage [CS67] PROC2:
Store substance within a closed system [E84]

General exposures (closed systems) [CS15] PROC3:
No other specific measures identified [EI20]
Drum/batch transfers [CS8] PROC8a:
No other specific measures identified [EI20]

Equipment maintenance [CS5] PROC8a:
No other specific measures identified [EI20]

Transfer from/pouring from containers [CS22] PROC9:
No other specific measures identified [EI20]

Filling / preparation of equipment from drums or containers. [CS45] PROC9:
No other specific measures identified [EI20]

Remanufacture of reject articles [CS19] PROC9:
No other specific measures identified [EI20]

Operation of equipment containing engine oils and similar [CS26] PROC20:
No other specific measures identified [EI20]

Operation of equipment containing engine oils and similar [CS26] Operation is carried out at elevated temperature (> then 20°C above ambient temperature) [OC7] PROC20:
No other specific measures identified [EI20]

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): 0.05
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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 70
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC11: Non industrial spraying
PROC13: Treatment of articles by dipping and pouring

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Drum/batch transfers [CS8] Non-dedicated facility [CS82] PROC8a:

No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] Dedicated facility [CS81] PROC8b:
No other specific measures identified [EI20]

Drum/batch transfers [CS8] Dedicated facility [CS81] Operation is carried out at elevated temperature (> then 20°C above ambient temperature] [OC7] PROC8b:
No other specific measures identified [EI20]

Drum and small package filling [CS6] PROC9:
No other specific measures identified [EI20]

Manual applications e.g. brushing, rolling [CS13] PROC10:
No other specific measures identified [EI20]

Spraying/Fogging by machine application [CS25] Operation is carried out at elevated temperature (> then 20°C above ambient temperature] [OC7] PROC11:
Ensure operation is undertaken outdoors [E69] Limit the substance content in the mixture to 50% [OC22]

Spraying/Fogging by machine application [CS25] PROC11:
No other specific measures identified [EI20]

Dipping, immersion and pouring [CS4] PROC13:
No other specific measures identified [EI20]

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): 0.0062

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa at STP [OC4]

Concentration of substance in product:
Covers percentage substance in the product up to 100 % (unless stated differently) [G13]

Frequency and duration of use/exposure:
Covers daily exposures up to 8 hours (unless stated differently) [G2]

Other operational conditions affecting exposure:
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene has been implemented [G1]

Contributing scenarios and risk management measures of worker exposure

Cleaning [CS47] PROC10:
No other specific measures identified [EI20]

Laboratory activities [CS36] PROC15:
No other specific measures identified [EI20]

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): 0.0011

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 (%): 96.2
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 5.6
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22].

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32] Risk management measures are based on qualitative risk characterization [G37]

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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa [OC4]

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:
Unless otherwise stated, covers use amounts up to13800g [ConsOC2];covers skin contact area up to 857.5cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 6 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC1:Adhesives, sealants--Glues, hobby use
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];
RMM
Avoid using at a product concentration greater than 3% [ConsRMM1]
For each use event, avoid using a product amount greater than 5g [ConsRMM2]

PC1Adhesives, sealants--Glues DIY-use (carpet glue, tile glue, wood parquet glue)
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 110.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 6.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3.3% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC1:Adhesives, sealants--Glue from spray
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 11% [ConsRMM1]

PC1:Adhesives, sealants—Sealants
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.5% [ConsRMM1]
For each use event, avoid using a product amount greater than 25g [ConsRMM2]
Avoid using when windows closed [ConsRMM8]

PC4_n:Anti-freeze and de-icing products--Washing car window
OC
Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.02hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC4_n:Anti-freeze and de-icing products--Pouring into radiator
OC
Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2000g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM

Avoid using at a product concentration greater than 2.5% [ConsRMM1]

PC4_n:Anti-freeze and de-icing products--Lock de-icer
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 214.40 cm2 [ConsOC5]; for each use event, covers use amounts up to 4g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 45% [ConsRMM1]

PC8_n: Biocidal products (excipient use only for solvent products)--Laundry and dish washing products
OC
Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.50hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3.5% [ConsRMM1]

PC8_n: Biocidal products (excipient use only for solvent products)--Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
OC
Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC8_n: Biocidal products (excipient use only for solvent products)--Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
OC
Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 11% [ConsRMM1]

PC9a:Coatings and paints, fillers putties, thinners--Waterborne latex wall paint
OC
Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 1.5% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC9a:Coatings and paints, fillers putties, thinners--Solvent rich, high solid, water borne paint
OC
Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 5% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC9a:Coatings and paints, fillers putties, thinners--Aerosol spray can

OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC9a:Coatings and paints, fillers putties, thinners--Removers (paint-, glue-, wall paper-, sealant-remover)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 14% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC9b:Fillers, putties, plasters, modeling clay--Fillers and putty
OC
Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC9b:Fillers, putties, plasters, modeling clay--Plasters and floor equalizers
OC
Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 13800g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 1.8% [ConsRMM1]
For each use event, avoid using a product amount greater than 900g [ConsRMM2]
Avoid using when windows closed [ConsRMM8]

PC9b:Fillers, putties, plasters, modeling clay--Modelling clay
OC
Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1g [ConsOC13];
RMM
Avoid using at a product concentration greater than 0.027% [ConsRMM1]

PC9c:Finger paints --Finger paints
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1.35g [ConsOC13];
RMM
Avoid using at a product concentration greater than 0.025% [ConsRMM1]

PC15_n: Non-metal surface treatment products--Waterborne latex wall paint
OC
Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 1.5% [ConsRMM1]

Avoid using when windows closed [ConsRMM8]

PC15_n: Non-metal surface treatment products--Solvent rich, high solid, water borne paint
OC
Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 5% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC15_n: Non-metal surface treatment products--Aerosol spray can
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC15_n: Non-metal surface treatment products--Removers (paint-, glue-, wall paper-, sealant-remover)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 14% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC18_n: Ink and toners--Inks and toners
OC
Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 71.40 cm2 [ConsOC5]; for each use event, covers use amounts up to 40g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 0.45% [ConsRMM1]

PC23_n: Leather tanning, dye, finishing, impregnation and care products--Polishes, wax / cream (floor, furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 56g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 6% [ConsRMM1]

PC23_n: Leather tanning, dye, finishing, impregnation and care products--Polishes, spray (furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 56g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Liquids
OC

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Pastes
OC
Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Sprays
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC31:Polishes and wax blends--Polishes, wax / cream (floor, furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 142g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.4% [ConsRMM1]

PC31:Polishes and wax blends--Polishes, spray (furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC34_n: Textile dyes, finishing and impregnating products—
OC
Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 115g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3% [ConsRMM1]
For each use event, avoid using a product amount greater than 5g [ConsRMM2]
Avoid using in room size less than 34m³ [ConsRMM11]

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): 0.11

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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 51
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa [OC4]

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:
Unless otherwise stated, covers use amounts up to13800g [ConsOC2];covers skin contact area up to 857.5cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; unless otherwise stated, covers use frequency up to 4 times per day [ConsOC4]; covers exposure up to 8 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC3:Air care products—Air care, instant action (aerosol sprays)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 4 times day of use[ConsOC4]; for each use event, covers use amounts up to 0.1g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC3:Air care products—Air care, instant action (aerosol sprays)-pesticidal- excipient only
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 4 times day of use[ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC3:Air care products—Air care, continuous action (solid and liquid)
OC
Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.70 cm² [ConsOC5] for each use event, covers use amounts up to 0.48g [ConsOC2];
covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 8.00hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC3:Air care products—Air care, continuous action (solid and liquid)-pesticidal- excipient only
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.70 cm² [ConsOC5] for each use event, covers use amounts up to 0.48g [ConsOC2];
covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 8.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 25% [ConsRMM1]

PC4_n:Anti-freeze and de-icing products--Washing car window
OC
Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 0.5g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.02hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC4_n:Anti-freeze and de-icing products--Pouring into radiator
OC
Unless otherwise stated, covers concentrations up to 10% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2000g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.5% [ConsRMM1]

PC4_n:Anti-freeze and de-icing products--Lock de-icer

OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 214.40 cm2 [ConsOC5]; for each use event, covers use amounts up to 4g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.25hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 45% [ConsRMM1]

PC8_n: Biocidal products (excipient use only for solvent products)--Laundry and dish washing products
OC
Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.50hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3.5% [ConsRMM1]

PC8_n: Biocidal products (excipient use only for solvent products)--Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
OC
Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC8_n: Biocidal products (excipient use only for solvent products)--Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
OC
Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 11% [ConsRMM1]

PC9a:Coatings and paints, fillers putties, thinners--Waterborne latex wall paint
OC
Unless otherwise stated, covers concentrations up to 1.5% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 2760g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 1.5% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC9a:Coatings and paints, fillers putties, thinners--Solvent rich, high solid, water borne paint
OC
Unless otherwise stated, covers concentrations up to 27.5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 744g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.20hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 5% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC9a:Coatings and paints, fillers putties, thinners--Aerosol spray can
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 2 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 215g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC9a:Coatings and paints, fillers putties, thinners--Removers (paint-, glue-, wall paper-, sealant-remover)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 3 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 491g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 14% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC9b:Fillers, putties, plasters, modeling clay--Fillers and putty
OC
Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC9b:Fillers, putties, plasters, modeling clay--Plasters and floor equalizers
OC
Unless otherwise stated, covers concentrations up to 2% [ConsOC1]; covers use up to 12 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 13800g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 2.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 1.8% [ConsRMM1]
For each use event, avoid using a product amount greater than 900g [ConsRMM2]
Avoid using when windows closed [ConsRMM8]

PC9b:Fillers, putties, plasters, modeling clay--Modelling clay
OC
Unless otherwise stated, covers concentrations up to 1% [ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1g [ConsOC13];
RMM
Avoid using at a product concentration greater than 0.027% [ConsRMM1]

PC9c:Finger paints --Finger paints
OC
Unless otherwise stated, covers concentrations up to 50[ConsOC1]; covers use up to 365 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 254.40 cm2 [ConsOC5]; for each use event, assumes swallowed amount of 1.35g [ConsOC13];
RMM
Avoid using at a product concentration greater than 0.025% [ConsRMM1]

PC24: Lubricants, greases, and release products—Liquids
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Pastes
OC
Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Sprays
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC35: Washing and cleaning products (including solvent based products)—Laundry and dish washing products
OC
Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 6 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 15g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.50hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3.5% [ConsRMM1]

PC35: Washing and cleaning products (including solvent based products)—Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, metal cleaners)
OC
Unless otherwise stated, covers concentrations up to 5% [ConsOC1]; covers use up to 128 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, covers use amounts up to 27g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC35: Washing and cleaning products (including solvent based products)—Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
OC
Unless otherwise stated, covers concentrations up to 15% [ConsOC1]; covers use up to 128 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 11% [ConsRMM1]

PC38_n: Welding and soldering products, flux products—NOTE, n_assessment not in TRA
OC
Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; for each use event, covers use amounts up to 12g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 5% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

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): 0.018

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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 88
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]
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

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa [OC4]

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:
Unless otherwise stated, covers use amounts up to6390g [ConsOC2];covers skin contact area up to 468cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated , covers use frequency up to 365 days per year [ConsOC3] Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 6 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC1:Adhesives, sealants--Glues, hobby use
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; Unless otherwise stated , covers use frequency up to 365 days per year [ConsOC3] covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to

35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];
RMM
Avoid using at a product concentration greater than 3% [ConsRMM1]
For each use event, avoid using a product amount greater than 5g [ConsRMM2]

PC1:Adhesives, sealants--Glues DIY-use (carpet glue, tile glue, wood parquet glue)
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers skin contact area up to 110.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 6.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3.3% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC1:Adhesives, sealants--Glue from spray
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days per year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 11% [ConsRMM1]

PC1:Adhesives, sealants—Sealants
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days per year [ConsOC3] covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.5% [ConsRMM1]
For each use event, avoid using a product amount greater than 25g [ConsRMM2]
Avoid using when windows closed [ConsRMM8]

PC24: Lubricants, greases, and release products—Liquids
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 365 days per year [ConsOC3]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Pastes
OC
Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days per year [ConsOC3]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Sprays
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days per year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use

event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC31: Polishes and wax blends—Polishes, wax/cream (floor, furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days per year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 142g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.4% [ConsRMM1]

PC31: Polishes and wax blends—Polishes, spray (furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8] covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

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): 0.0051

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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 27
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa [OC4]

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:
Unless otherwise stated, covers use amounts up to6390g [ConsOC2];covers skin contact area up to 468cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated, covers use frequency up to 365 days per year [ConsOC3]; Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 6 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC1:Adhesives, sealants--Glues, hobby use
OC

Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; Unless otherwise stated , covers use frequency up to 365 days per year [ConsOC3] covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 9g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 4.00hr/event [ConsOC14];
RMM
Avoid using at a product concentration greater than 3% [ConsRMM1]
For each use event, avoid using a product amount greater than 5g [ConsRMM2]

PC1:Adhesives, sealants--Glues DIY-use (carpet glue, tile glue, wood parquet glue)
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers skin contact area up to 110.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 6390g [ConsOC2]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 6.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 3.3% [ConsRMM1]
Avoid using when windows closed [ConsRMM8]

PC1:Adhesives, sealants--Glue from spray
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 6 days per year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 85.05g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 11% [ConsRMM1]

PC1:Adhesives, sealants—Sealants
OC
Unless otherwise stated, covers concentrations up to 30% [ConsOC1]; covers use up to 365 days per year [ConsOC3] covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 35.73 cm2 [ConsOC5]; for each use event, covers use amounts up to 75g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.00hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.5% [ConsRMM1]
For each use event, avoid using a product amount greater than 25g [ConsRMM2]
Avoid using when windows closed [ConsRMM8]

PC24: Lubricants, greases, and release products—Liquids
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 365 days per year [ConsOC3]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Pastes
OC
Unless otherwise stated, covers concentrations up to 20% [ConsOC1]; covers use up to 10 days per year [ConsOC3]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 34g [ConsOC2]; Covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3[ConsOC11]; for each use event, covers exposure up to 4.00hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC24: Lubricants, greases, and release products—Sprays
OC

Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 6 days per year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 428.75 cm2 [ConsOC5]; for each use event, covers use amounts up to 73g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.17hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC31: Polishes and wax blends—Polishes, wax/cream (floor, furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 29 days per year [ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 142g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 1.23hr/event[ConsOC14];
RMM
Avoid using at a product concentration greater than 2.4% [ConsRMM1]

PC31: Polishes and wax blends—Polishes, spray (furniture, shoes)
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 8 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 430.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 35g [ConsOC2]; covers use under typical household ventilation [ConsOC8] covers use in room size of 20m3[ConsOC11]; for each use event, covers exposure up to 0.33hr/event[ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

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): 0.0051

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): 0.4
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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 26
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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 (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 8.11b.v1

Contributing Product Category [PC]:
PC12: Fertilizers
PC27: Plant protection products

Scope of processes and activities covered by the Exposure Scenario:
Covers the consumer use in agrochemicals in liquid and solid forms

Section 2 Operational conditions and risk management measures

Section 2.1 Control of consumer exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]

Amounts used:
covers skin contact area up to 857.5cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated, covers use frequently up to 365 days per year [ConsOC3]; unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 4 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC12:Fertilizers—Lawn and garden preparations
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, assumes swallowed amount 0.3g [ConsOC13]; for each use event, covers exposure up to 4.00hr/event[ConsOC14]
RMM
Avoid using at a product concentration greater than 0.3% [ConsRMM1]

PC27_n:Plant protection products--
OC
Unless otherwise stated, covers concentrations up to 50% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm2 [ConsOC5]; for each use event, assumes swallowed amount 0.3g [ConsOC13]; for each use event, covers exposure up to 4.00hr/event[ConsOC14]
RMM
Avoid using at a product concentration greater than 0.3% [ConsRMM1]

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): 0.073

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

Conditions and measures related to municipal sewage treatment plant
Estimated substance removal from wastewater via domestic sewage treatment (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 350
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 – 10 kPa [OC4]

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:
Unless otherwise stated, covers use amounts up to37500g [ConsOC2]; covers skin contact area up to 420cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated, covers use frequently up to 365 days per year [ConsOC3]; Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 2 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC13:Fuels—Liquid—subcategories added: Automotive Refuelling
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 37500g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3 [ConsOC11]; for each use event, covers exposure up to 0.05hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC13:Fuels—Liquid—subcategories added: Scooter Refuelling
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 3750g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3 [ConsOC11]; for each use event, covers exposure up to 0.03hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC13:Fuels—Liquid—subcategories added: Garden Equipment - Use
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 26 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; for each use event, covers use amounts up to 750g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m3 [ConsOC11]; for each use event, covers exposure up to 2.00hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC13:Fuels—Liquid—subcategories added: Garden Equipment - Refuelling
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 26 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 420.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 750g [ConsOC2]; covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.03hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC13:Fuels—Liquid—subcategories added: Home space heater fuel
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 365 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 3000g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.03hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

PC13:Fuels—Liquid—subcategories added: Lamp oil
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 210.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 100g [ConsOC2]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20m3 [ConsOC11]; for each use event, covers exposure up to 0.01hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

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): 0.01

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): 0.001
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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 53
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 - 10 kPa [OC4]

Concentration of substance in product:
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:
Unless otherwise stated, covers use amounts up to2200g [ConsOC2];covers skin contact area up to 468cm2 [ConsOC5]

Frequency and duration of use/exposure:
Unless otherwise stated, covers use frequently up to 4 days per year [ConsOC3]; Unless otherwise stated, covers use frequency up to 1 times per day [ConsOC4]; covers exposure up to 0.17 hours per event [ConsOC14]

Other operational conditions affecting exposure:
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m^3 room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

PC16_n:Heat transfer fluids--Liquids
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days per year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14];

RMM
No specific RMMs identified beyond those OCs stated

PC17_n:Hydraulic fluids--Liquids
OC
Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 4 days per year [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 468.00 cm2 [ConsOC5]; for each use event, covers use amounts up to 2200g [ConsOC2]; covers use in a one car garage (34m3) under typical ventilation [ConsOC10]; covers use in room size of 34m3 [ConsOC11]; for each use event, covers exposure up to 0.17hr/event [ConsOC14];
RMM
No specific RMMs identified beyond those OCs stated

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): 0.05
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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 69
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
Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted [G8]

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
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23].

Environment
Guidance is based on assumed operating conditions which may no be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. 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:
Other consumer uses

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 8.16.v1

Contributing Product Category [PC]:
PC28:
PC39:

Scope of processes and activities covered by the Exposure Scenario:
Consumer uses not covered in consumer examples listed above e.g. use as a carrier in cosmetics/personal care products, parfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of consumer exposure

Operational conditions of use

Physical form of product and vapour pressure:
Liquid, vapour pressure 0.5 -10 kPa

Contributing scenarios and risk management measures of consumer exposure

Not applicable

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): 0.0068

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 (%): 96.2
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 35
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]. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).