

Annex to the extended Safety Data Sheet



Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Manufacture of substance

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

ERC1: Manufacture of substances

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

Specific Environmental Release Category: ESVOG 1.1.v1

Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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

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

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

PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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

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General exposures (closed systems) [CS15] PROC1:

No other specific measures identified [E120]

General exposures (closed systems) [CS15] PROC2, PROC3:

Handle substance within a closed system [E47]

Material storage [CS67] PROC1, PROC2:

Store substance within a closed system [E84]

General exposures (open systems) [CS16] PROC4:

No other specific measures identified [E120]

Equipment cleaning and maintenance [CS39] PROC8a:

No other specific measures identified [E120]

Process sampling [CS2] PROC8b:

No other specific measures identified [E120]

Bulk transfers [CS14] (open systems) [CS108] PROC8b:

No other specific measures identified [E120]

Bulk transfers [CS14] (closed systems) [CS107] PROC8b:

Handle substance within a closed system [E47]

Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

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): 7900

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): 0.0001

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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14] 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

Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1728729
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>).

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Section 1 Exposure scenario title

Title:

Distribution of substance

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

ERC1: Manufacture of substances

ERC2: Formulation of preparations

ERC3: Formulation in materials

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

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

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

ERC6b: Industrial use of reactive processing aids

ERC6c: Industrial use of monomers for polymerization

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

ERC7: Industrial use of substances in closed systems

Specific Environmental Release Category: ESVOC 1.1b.v1

Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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

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

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

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

PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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]

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Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1, PROC2, PROC3:

Handle substance within a closed system [E47]

Material storage [CS67] PROC1, PROC2:

Store substance within a closed system [E84]

Process sampling [CS2] PROC3:

No other specific measures identified [E120]

General exposures (open systems) [CS16] PROC4:

No other specific measures identified [E120]

Equipment cleaning and maintenance [CS39] PROC8a:

No other specific measures identified [E120]

Bulk transfers [CS14] (open systems) [CS108] PROC8b:

No other specific measures identified [E120]

Bulk transfers [CS14] (closed systems) [CS107] PROC8b:

No other specific measures identified [E120]

Drum and small package filling [CS6] PROC9:

No other specific measures identified [E120]

Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

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): 0.12

Frequency and duration of use

Emission days (days/year): 20

Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

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

Release fraction to wastewater from process (initial release prior to RMM): 0.0000001

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

Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

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Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%): 96.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1656
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>).

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Section 1 Exposure scenario title

Title:

Formulation & (re)packing of substances and mixtures

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

ERC2: Formulation of preparations

Specific Environmental Release Category: ESVOC 2.2.v1

Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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

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

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

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

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

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

PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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]

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Contributing scenarios and risk management measures of worker exposure

General exposures (closed systems) [CS15] PROC1, PROC2, PROC3:

Handle substance within a closed system [E47]

Material storage [CS67] PROC1, PROC2:

No other specific measures identified [E120]

Process sampling [CS2] PROC3:

No other specific measures identified [E120]

Batch processes at elevated temperatures [CS136] Operation is carried out at elevated temperature (> than 20 °C above ambient temperature) [OC7] PROC3:

No other specific measures identified [E120]

General exposures (open systems) [CS16] PROC4:

No other specific measures identified [E120]

Mixing operations (open systems) [CS30] PROC5:

No other specific measures identified [E120]

Manual [CS34] transfer from/pouring from containers [CS22] PROC8a:

No other specific measures identified [E120]

Equipment cleaning and maintenance [CS39] PROC8a:

No other specific measures identified [E120]

Bulk transfers [CS14] PROC8b:

No other specific measures identified [E120]

Drum/batch transfers [CS8] PROC8b:

No other specific measures identified [E120]

Drum and small package filling [CS6] PROC9:

No other specific measures identified [E120]

Production or preparation of articles by tableting, compression, extrusion or pelletisation [CS100] PROC14:

No other specific measures identified [E120]

Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

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): 1433

Frequency and duration of use

Emission days (days/year): 10

Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

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Other given operational conditions affecting environmental exposure

Release fraction to air from process (after typical onsite RMMs, consistent with EU Solvent Emissions Directive requirements): 0.01

Release fraction to wastewater from process (initial release prior to RMM): 0.000005

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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14] 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

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 (%): 96.5

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 691490

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 Petrisk 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>).

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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 tableting, compression, extrusion, pelettisation.
PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:

Covers the use in coatings (paints, inks, adhesives, etc.) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidized bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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]

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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] with sample collection [CS56] Use in contained systems [CS38] PROC2:

Handle substance within a closed system [E47]

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:

Handle substance within a closed system [E47]

Mixing operations (closed systems) [CS29] General exposures (closed systems) [CS15] PROC3:

Handle substance within a closed system [E47]

Film formation – air drying [CS95] PROC4:

No other specific measures identified [E120]

Preparation of material for application [CS96] Mixing operations (open systems) [CS30] PROC5:

No other specific measures identified [E120]

Spraying (automatic/robotic) [CS97] PROC7:

Provide a good standard of controlled ventilation [10 to 15 air changes per hour] [E40]

Manual [CS34] spraying [CS10] PROC7:

Provide a good standard of controlled ventilation [10 to 15 air changes per hour] [E40]

Material transfers [CS3] PROC8a, PROC8b:

No other specific measures identified [E120]

Material transfers [CS3] Drum/batch transfers [CS8] Transfer from/pouring from containers [CS22] PROC9:

No other specific measures identified [E120]

Roller, spreader, flow application [CS98] PROC10:

No other specific measures identified [E120]

Dipping, immersion and pouring [CS4] PROC13:

No other specific measures identified [E120]

Production or preparation of articles by tableting, compression extrusion or pelletisation [CS100] PROC14:

No other specific measures identified [E120]

Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

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): 90

Frequency and duration of use

Emission days (days/year): 20

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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): 0.098
Release fraction to wastewater from process (initial release prior to RMM): 0.00002
Release fraction to soil from process (initial release prior to RMM): 0

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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14] 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

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 (%): 96.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 172872
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].

Environment

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

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Section 1 Exposure scenario title

Title:

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

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

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

Contributing Process Categories [PROC]:

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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

PROC7: Industrial spraying

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

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

PROC10: Roller application or brushing of adhesive and other coating

PROC13: Treatment of articles by dipping and pouring

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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

Automated process with (semi) closed systems [CS93]. Use in contained systems [CS38] PROC2:

No other specific measures identified [E120]

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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Application of cleaning products in closed systems [CS101] PROC2:

No other specific measures identified [E120]

Automated process with (semi) closed systems [CS93]. Drum/batch transfers [CS8] PROC3:

No other specific measures identified [E120]

Use in contained batch processes [CS37] PROC4:

No other specific measures identified [E120]

Cleaning with high pressure washers [CS44] PROC7:

Avoid carrying out activities involving exposure for more than 1 hour [OC27]

OR

Provide a good standard of controlled ventilation [10 to 15 air changes per hour] [E40]

Bulk transfers [CS14] PROC8a:

No other specific measures identified [E120]

Filling/preparation of equipment from drums or containers [CS45] PROC8b:

No other specific measures identified [E120]

Cleaning with low-pressure washers [CS42] PROC10:

No other specific measures identified [E120]

Manual [CS34] surfaces [CS48] cleaning [CS47] PROC10:

No other specific measures identified [E120]

Degreasing small objects in cleaning station [CS41] PROC13:

No other specific measures identified [E120]

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): 100

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): 0.3

Release fraction to wastewater from process (initial release prior to RMM): 0.0000001

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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14] 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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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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 (%): 96.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1500000
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].

Environment

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Use in Oil and Gas Field Drilling and Production 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: not applicable

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

Scope of processes and activities covered by the Exposure Scenario:

Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, on-site formulation, well head operations, shaker room activities and related 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 [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

General exposures (closed systems) [CS15] PROC1:

No other specific measures identified [EI20]

Batch process [CS55] PROC1, PROC2:

No other specific measures identified [EI20]

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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Treatment and disposal of filtered solids [CS121] PROC3:

No other specific measures identified [EI20]

Drilling mud (re-)formulation [CS115] PROC3:

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]

Drill floor operations [CS116] PROC4:

No other specific measures identified [EI20]

Operation of solids filtering equipment – vapour exposures [CS118] PROC4:

No other specific measures identified [EI20]

Pouring from small containers [CS9] PROC8a:

No other specific measures identified [EI20]

Equipment cleaning and maintenance [CS39] PROC8a:

No other specific measures identified [EI20]

Cleaning of solids filtering equipment [CS120] PROC8a:

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]

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): not applicable (N/A)

Frequency and duration of use

Emission days (days/year): N/A

Environmental factors not influenced by risk management

Local marine water dilution factor: N/A

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): N/A

Release fraction to wastewater from process (initial release prior to RMM): N/A

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

-

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 >=(%): N/A

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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Organisation measures to prevent/limit release from site

Prevent environmental discharge consistent with regulatory requirements [OMS4].

Conditions and measures related to municipal sewage treatment plant

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

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

removal (kg/day): N/A

Assumed domestic sewage treatment plant flow (m^3/day): N/A

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

Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment [EE7].

Qualitative approach used to conclude safe use [EE8]

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

Discharge to aquatic environment is restricted by law and industry prohibits release*

*OSPAR Commission 2009. Discharges, Spills and Emissions from Offshore Oil and Gas Installations in 2007, including the assessment of data reported in 2006 and 2007.

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Use as binders and release agents (industrial use)

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

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

Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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

PROC6: Calendering operations

PROC7: Industrial spraying

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

PROC10: Roller application or brushing of adhesive and other coating

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

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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 transfers [CS3] PROC1, PROC2, PROC3:

No other specific measures identified [E120]

Material storage [CS67] PROC1, PROC2:

Store substance within a closed system [E84]

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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:

Provide a good standard of general ventilation [not less than 3 to 5 air changes per hour] [E11] Avoid carrying out activities involving exposure for more than 4 hours [OC28]

Spraying [CS10] Machine [CS33] PROC7:

Provide a good standard of general ventilation [not less than 3 to 5 air changes per hour] [E11] Avoid carrying out activities involving exposure for more than 4 hours [OC28]

Spraying [CS10] Manual [CS34] PROC7:

Provide a good standard of general ventilation [not less than 3 to 5 air changes per hour] [E11] Avoid carrying out activities involving exposure for more than 4 hours [OC28]

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]

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): 100

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): 0.2

Release fraction to wastewater from process (initial release prior to RMM): 0.0000001

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]. Prevent discharge of undissolved substance to, or recover from, onsite wastewater [TCR14]. 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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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Organisation measures to prevent/limit release from site

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 (%): 96.5

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 1500000

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].

Environment

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Use in laboratories (industrial use)

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

ERC2: Formulation of preparation

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

Specific Environmental Release Category: not applicable

Contributing Process Categories [PROC]:

PROC10: Roller application or brushing of adhesive and other coating

PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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

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].

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Amounts used

Maximum daily site tonnage (kg/day): 0.5

Frequency and duration of use

Emission days (days/year): 20

Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

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

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

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

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

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

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

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

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

Organisation measures to prevent/limit release from site

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 (%): 96.5

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 170

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].

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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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].

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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 [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]

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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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] PROC2:

Handle Substance within a closed system. [E47]

Preparation of material for application [CS96] PROC3:

No other specific measures identified [E120]

Film formation – air drying [CS95] Outdoor [OC9] PROC4:

No other specific measures identified [E120]

Film formation – air drying [CS95] Indoor [OC8] PROC4:

No other specific measures identified [E120]

Preparation of material for application [CS96] Indoor [OC8] PROC5:

No other specific measures identified [E120]

Preparation of material for application [CS96] Outdoor [OC9] PROC5:

No other specific measures identified [E120]

Material transfers [CS3] Drum/batch transfers [CS8] PROC8a:

No other specific measures identified [E120]

Material transfers [CS3] Drum/batch transfers [CS8] PROC8b:

No other specific measures identified [E120]

Roller, spreader, flow application [CS98] Indoor [OC8] PROC10:

No other specific measures identified [E120]

Roller, spreader, flow application [CS98] Outdoor [OC9] PROC10:

No other specific measures identified [E120]

Manual [CS34] spraying [CS10] Indoor [OC8] PROC11:

Provide a good standard of controlled ventilation [10 to 15 air changes per hour] [E40] Limit the substance content in the mixture to 50% [OC22]

OR

Wear a respirator conforming to EN 140 with Type A filter or better [PPE22]

Manual [CS34] spraying [CS10] Outdoor [OC9] PROC11:

Avoid carrying out activities involving exposure for more than 4 hours [OC28] Limit the substance content in the mixture to 50% [OC22]

OR

Wear a respirator conforming to EN 140 with Type A filter or better [PPE22]

Dipping, immersion and pouring [CS4] Indoor [OC8] PROC13:

No other specific measures identified [E120]

Dipping, immersion and pouring [CS4] Outdoor [OC9] PROC13:

No other specific measures identified [E120]

Laboratory activities [CS36] PROC15:

No other specific measures identified [E120]

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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Hand application – fingerpaints, pastels, adhesives [CS72] Indoor [OC8] PROC19:

No other specific measures identified [EI20]

Hand application – fingerpaints, 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): 0.0067

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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14] 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

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 (%): 96.5

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 82

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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].

Environment

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Use in cleaning agents (professional application)

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

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

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

Specific Environmental Release Category: 8.4b.v1

Contributing Process Categories [PROC]:

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

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

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

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

PROC10: Roller application or brushing of adhesive and other coating

PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Material storage [CS67] PROC1:

No other specific measures identified [E120]

Automated process with (semi) closed system [CS93] Use in contained system [CS38] PROC2:

No other specific measures identified [E120]

Automated process with (semi) closed system [CS93] Drum/batch transfers [CS8] Used in contained systems [CS38] PROC3:

No other specific measures identified [E120]

Semi Automated process (e.g.: Semi automatic application of floor care and maintenance products) [CS76] PROC4:

No other specific measures identified [E120]

Application of cleaning products in closed systems [CS101] Outdoor [OC9] PROC4:

No other specific measures identified [E120]

Cleaning of medical devices [CS74] PROC4:

No other specific measures identified [E120]

Filling / preparation of equipment from drums or containers. [CS45] PROC8a:

No other specific measures identified [E120]

Filling / preparation of equipment from drums or containers. [CS45] PROC8b:

No other specific measures identified [E120]

Cleaning with low-pressure washers [CS42] Rolling, Brushing [CS51] no spraying [CS60] PROC10:

No other specific measures identified [E120]

Manual [CS34] Surfaces [CS48] Cleaning [CS47] Spraying [CS10] PROC10:

No other specific measures identified [E120]

Ad hoc manual application via trigger sprays, dipping, etc. [CS27] Rolling, Brushing [CS51] PROC10:

No other specific measures identified [E120]

Cleaning with high-pressure washers [CS44] Spraying [CS10] Indoor [OC8] PROC11:

Provide a good standard of controlled ventilation [10 to 15 air changes per hour] [E40]

Limit the substance content in the mixture to 50% [OC22]

OR

Wear a respirator conforming to EN 140 with Type A filter or better [PPE22]

Cleaning with high-pressure washers [CS44] Spraying [CS10] Outdoor [OC9] PROC11:

Ensure operation is undertaken outdoors [E69] Limit the substance content in the mixture to 1% [OC26]

OR

Wear a respirator conforming to EN 140 with Type A filter or better [PPE22]

Manual [CS34] Surfaces [CS48] Cleaning [CS47] Dipping, immersion and pouring [CS4] PROC13:

No other specific measures identified [E120]

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): 0.0027

Frequency and duration of use

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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]. Prevent discharge of undissolved substance to or recover from onsite wastewater [TCR14] 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

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 (%): 96.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 42
Assumed domestic sewage treatment plant flow (m^3/day): 2000

Conditions and measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

Section 3 Exposure estimation

Health

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].

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

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Use in Oil and Gas Field Drilling and Production Operations

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]:

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Specific Environmental Release Category: 4.5a.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

Scope of processes and activities covered by the Exposure Scenario:

Oil field well drilling operations (including drilling muds and well cleaning) including material transfers, on-site formulation, well head operations, shaker room activities and related 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 [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

General exposures (closed systems) [CS15] PROC1:

No other specific measures identified [E120]

Batch process [CS55] PROC2:

No other specific measures identified [E120]

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Drilling mud (re-)formulation [CS115] PROC3:

No other specific measures identified [EI20]

Treatment and disposal of filtered solids [CS121] PROC3:

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]

Drill floor operations [CS116] PROC4:

No other specific measures identified [EI20]

Operation of solids filtering equipment – vapour exposures [CS118] PROC4:

No other specific measures identified [EI20]

Pouring from small containers [CS9] PROC8a:

No other specific measures identified [EI20]

Cleaning of solids filtering equipment [CS120] 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]

Filling / preparation of equipment from drums or containers. [CS45] 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): N/A

Frequency and duration of use

Emission days (days/year): N/A

Environmental factors not influenced by risk management

Local freshwater dilution factor: N/A

Local marine water dilution factor: N/A

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): N/A

Release fraction to wastewater from process (initial release prior to RMM): N/A

Release fraction to soil from process (initial release prior to RMM): N/A

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

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

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

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

Organisation measures to prevent/limit release from site

Prevent environmental discharge consistent with regulatory requirements [OMS4].

Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%):N/A

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

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

removal (kg/day): N/A

Assumed domestic sewage treatment plant flow (m^3/day): N/A

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

Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment [EE7]

Qualitative approach used to conclude safe use [EE8]

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

Discharge to aquatic environment is restricted by law and industry prohibits release¹ [DSU9]

¹ OSPAR commission 2009. Discharges, Spills and Emissions from offshore Oil and Gas Installations in 2007, including the assessment of data reported in 2006 and 2007.

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medium volatility (0.5 - 10 kPa)

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Section 1 Exposure scenario title

Title:

Use in Laboratories

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

ERC8a: Wide dispersive indoor use of processing aids in open systems
Specific Environmental Release Category: ESVOC 8.17.v1

Contributing Process Categories [PROC]:

PROC10: Roller application or brushing
PROC15: Use as laboratory reagent

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

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

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

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medium volatility (0.5 - 10 kPa)

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Product characteristics:

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

Amounts used

Maximum daily site tonnage (kg/day): 0.0014

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 agricultural soil [TCR1f]. 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

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 (%): 96.5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 06.7
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].

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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>).

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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

Concentration of substance in product:

Unless otherwise stated, covers concentrations up to 100% [ConsOC1]

Amounts used:

Unless otherwise stated, covers use amounts up to 13800g [ConsOC2]; covers skin contact area up to 857.5cm² [ConsOC5]

Frequency and duration of use/exposure:

Unless otherwise stated, covers use frequency up to 1 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 m³ room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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

No specific RMMs identified beyond those OCs stated

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 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

No specific RMMs identified beyond those OCs stated

PC1:Adhesives, sealants--Glue from spray

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 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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

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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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

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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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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 5% [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

No specific RMMs identified beyond those OCs stated

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

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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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

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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

No specific RMMs identified beyond those OCs stated

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

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): 0.0014

Frequency and duration of use

Emission days (days/year): 365

Environmental factors not influenced by risk management

Local freshwater dilution factor: 10

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Local marine water dilution factor: 100

Other given operational conditions affecting environmental exposure

Release fraction to air from process (initial release prior to RMM): 0.985
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 (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 18
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]

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 factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>) [DSU4]

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Section 1 Exposure scenario title

Title:

Use in Cleaning agents (consumer applications)

Sector of use:

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

Subsequent service life relevant for that use:

Under nitrogen atmosphere no time limit

Contributing Environmental Release Categories [ERC]:

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

Contributing Product Category [PC]:

PC3: Air care products
PC4: Anti-Freeze and de-icing products
PC8: Biocidal products (e.g. disinfectants, pest control)
PC9a: Coatings and paints, thinners, paint removers
PC9b: Fillers, putties, plasters, modelling clay
PC9c: Finger paints
PC24: Lubricants, greases, release products
PC35: Washing and cleaning products (including solvent based products)
PC38: Welding and soldering products, flux products

Scope of processes and activities covered by the Exposure Scenario:

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

Section 2 Operational conditions and risk management measures

Section 2.1 Control of consumer exposure

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 100% [ConsOC1]

Amounts used:

Unless otherwise stated, covers use amounts up to 13800g [ConsOC2]; covers skin contact area up to 857.5cm² [ConsOC5]

Frequency and duration of use/exposure:

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 m³ room [ConsOC11]; assumes use with typical ventilation [ConsOC8]

Contributing scenarios and risk management measures of consumer exposure

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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 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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

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No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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 5% [ConsRMM1]

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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)—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

No specific RMMs identified beyond those OCs stated

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

No specific RMMs identified beyond those OCs stated

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Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
medium volatility (0.5 - 10 kPa)

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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): 0.0014

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 (%): 96.5

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 19

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]

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 factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>) [DSU4]

Annex to the extended Safety Data Sheet



Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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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, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

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): 0.0014

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

Annex to the extended Safety Data Sheet



Substance: Hydrocarbons, C9-C11, isoalkanes, cyclics, < 2% aromatics
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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 (%): 96.5
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day): 19
Assumed domestic sewage treatment plant flow (m^3/day): 2000

Conditions and measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

Section 3 Exposure estimation

Health

Not applicable

Environment

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

Section 4 Guidance to check compliance with the Exposure Scenario

Health

Not applicable

Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).