



SAFETY DATA SHEET

NESSOL Heptane

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	NESSOL Heptane
Chemical name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
Product number	ID 10564
Internal identification	135155, 137011, 137020
Synonyms; trade names	Previous product name: NESSOL LIAV 110. Previous product number: 751511, 751520.
REACH registration number	01-2119475515-33-0007

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	<p>Manufacture of substance, (ES01) Distribution of substance, (ES01a) Use as an intermediate, (ES01b) Formulation & (re)packing of substances and mixtures, (ES02) Uses in coatings (ES03a) (ES03b) (ES03c) Use in cleaning agents (ES04a) (ES04b) (ES04c) Lubricants (ES06a) (ES06b) (ES06c) Metal working fluids/rolling oils (ES07a) Blowing agents (ES09a) Use as binders and release agents (ES10a) (ES10b) Use in agrochemicals (ES11b) (ES11c) Use as a fuel, (ES12a) (ES12b) (ES12c) Functional fluids (ES13a) (ES13b) (ES13c) Road and construction applications (ES15b) Other Consumer Uses (ES16c) Use in laboratories (ES17a) (ES17b) Rubber production and processing (ES19a) Polymer processing (ES21a) Mining chemicals (ES23a)</p>
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1.3. Details of the supplier of the safety data sheet

Supplier	<p>Neste Oyj Keilaranta 21, Espoo, P.O.B. 95, FIN-00095 NESTE, FINLAND Tel. +358 10 45811 SDS@neste.com (chemical safety)</p>
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1.4. Emergency telephone number

National emergency telephone number +358-9-471 977, +358-9-4711, Poison Information Centre number

SECTION 2: Hazards identification

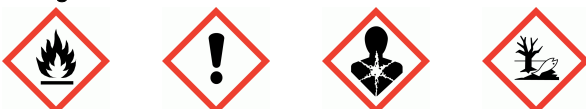
2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 2 - H225
Health hazards	Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 2 - H411

2.2. Label elements

Pictogram



NESSOL Heptane

Signal word	Danger
Hazard statements	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P102 Keep out of reach of children. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 Wear protective gloves. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P331 Do NOT induce vomiting. P501 Dispose of contents/ container in accordance with national regulations.
Contains	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
2.3. Other hazards	
Other hazards	Volatile liquid. Vapours may accumulate on the floor and in low-lying areas. Vapours may form explosive mixtures with air. Vapours may irritate throat/respiratory system. Risk of soil and ground water contamination.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics	100 %
CAS number: —	REACH registration number: 01-2119475515-33-XXXX
Classification	
Flam. Liq. 2 - H225	
Skin Irrit. 2 - H315	
STOT SE 3 - H336	
Asp. Tox. 1 - H304	
Aquatic Chronic 2 - H411	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments	Benzene (CAS 71-43-2) < 0,1 %. aromatic hydrocarbons < 0,1 %. n-hexane (CAS 110-54-3) < 5,0 %. Cycloalkanes ca. 50 w-%.
Other information	Identity outside the EU (CAS number and name of the substance):, 64742-49-0, Naphtha (petroleum), hydrotreated light., Previous EC number:., 265-151-9.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms are severe or persist.
Ingestion	Do not induce vomiting. Get medical attention immediately.
Skin contact	Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

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Eye contact Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.

4.2. Most important symptoms and effects, both acute and delayed

General information Vapours in high concentrations are narcotic. May cause nausea, headache, dizziness and intoxication. Gas or vapour in high concentrations may irritate the respiratory system. Causes skin irritation. Repeated exposure may cause skin dryness or cracking. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Highly flammable liquid and vapour. Containers can burst violently or explode when heated, due to excessive pressure build-up. Severe explosion hazard when vapours are exposed to flames.

Hazardous combustion products Carbon dioxide (CO₂). Carbon monoxide (CO).

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid inhalation of vapours and contact with skin and eyes. Wear adequate protective equipment at all operations.

For non-emergency personnel Keep upwind to avoid inhalation of gases, vapours, fumes and smoke.

For emergency responders Prevent unauthorized access. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Use only in well-ventilated areas. Eliminate all ignition sources if safe to do so.

6.2. Environmental precautions

Environmental precautions Avoid release to the environment. Stop leak if safe to do so. Avoid the spillage or runoff entering drains, sewers or watercourses. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air). Risk of soil and ground water contamination.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Immediately start clean-up of the liquid and contaminated soil. Large spills should be collected mechanically (remove by pumping) for disposal. Small Spillages: Absorb spillage with sand or other inert absorbent. Pay attention to the fire and health hazards caused by the product.

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6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

This material is a static accumulator. Avoid heat, flames and other sources of ignition. Take precautionary measures against static discharges. All handling should only take place in well-ventilated areas. Try to avoid product volatilization during handling and transferring. Avoid inhalation of vapours and contact with skin and eyes. Use personal protective equipment and/or local ventilation when needed. Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Flammable liquid storage. Store in accordance with local regulations. Keep container tightly closed, in a cool, well ventilated place. Keep away from food, drink and animal feeding stuffs. Store in a demarcated bunded area to prevent release to drains and/or watercourses. Take precautions against leakage by constructing collecting pools and sewerage systems as well as by surfacing the loading and unloading stations. Suitable container materials: Stainless steel. Carbon steel. Polytetrafluoroethylene (PTFE, Teflon). Polypropylene Polyethylene. Unsuitable container materials: Butyl rubber. Rubber (natural, latex). EPDM (ethylene-propylene-diene monomer). Polystyrene

7.3. Specific end use(s)

Specific end use(s) Not known.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Ingredient comments

Solvent naphtha, group 1: 500 mg/m³ (8h), HTP 2018/FIN. The individual limit values can be applied for the hydrocarbons.

PNEC

Not available.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

DNEL

Workers - Inhalation; Long term systemic effects: 2085 mg/m³
 Workers - Dermal; Long term systemic effects: 300 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 447 mg/m³
 Consumer - Dermal; Long term systemic effects: 149 mg/kg/day
 Consumer - Oral; Long term systemic effects: 149 mg/kg/day

8.2. Exposure controls

Appropriate engineering controls

All handling should only take place in well-ventilated areas. Use personal protective equipment and/or local ventilation when needed. Handle in accordance with good industrial hygiene and safety practice.

Eye/face protection

Tight-fitting safety glasses.

Hand protection

Wear protective gloves. It is recommended that gloves are made of the following material: Nitrile rubber. The selected gloves should have a breakthrough time of at least 8 hours. Protection class 6. Protective gloves according to standards EN 420 and EN 374. Change protective gloves regularly.

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Other skin and body protection	Protective clothing when needed. Wear anti-static protective clothing if there is a risk of ignition from static electricity.
Respiratory protection	Filter device/half mask Gas filter, type A2. Filter device could be used maximum 2 hours at a time. Filter devices must not be used in conditions where the oxygen level is low (< 19 vol.-%). At high concentrations a breathing apparatus must be used (self-contained or fresh air hose breathing apparatus). Filter must be changed often enough. Respirator according to standard EN 140.
Environmental exposure controls	Take precautions against leakage by constructing collecting pools and sewerage systems as well as by surfacing the loading and unloading stations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Mobile liquid.
Colour	Clear.
Odour	Hydrocarbons. Mild.
Odour threshold	-
pH	-
Melting point	(Melting/pour point) < -15°C
Initial boiling point and range	87...110°C (EN ISO 3405)
Flash point	< 0°C
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 1,4 % Upper flammable/explosive limit: 7,6 %
Vapour pressure	~ 6 kPa @ 20°C ~ 29 kPa @ 50°C
Vapour density	> 3 (Air = 1.0)
Relative density	0,72...0,75 @ 15°C (ISO 12185)
Solubility(ies)	The product has poor water-solubility.
Partition coefficient	log Kow: 2...7
Auto-ignition temperature	~ 260°C Estimated value.
Decomposition Temperature	-
Viscosity	Kinematic viscosity < 2 mm ² /s @ 40°C Dynamic viscosity < 50 mPa s @ 20°C
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	Surface tension 22 mN/m @ 25 °C (Wilhelmy plate method)
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid Keep away from heat, sparks and open flame. Take precautionary measures against static discharges.

10.5. Incompatible materials

Materials to avoid Oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Based on available data the classification criteria are not met.

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. (OECD 404) Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met. (F.D.A. 28 (110), 6.6.1963, para 191.12, Test for eye irritants)

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met. (OECD 406).

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met. (OECD 471, 473, 476).

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met. (OECD 416)

Reproductive toxicity - development

Based on available data the classification criteria are not met. (OECD 414)

Specific target organ toxicity - single exposure

STOT - single exposure May cause nausea, headache, dizziness and intoxication. Anaesthetic in high concentrations.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Toxicological information on ingredients.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ > 5840 mg/kg, Oral, Rat

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Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2920 mg/kg, Dermal, Rat (OECD 402)

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 23,3 mg/l, Inhalation, Rat (4h) (OECD 403)

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: 13,4 mg/l, Fish
WAF (OECD 203)

Acute toxicity - aquatic invertebrates EL50, 48 hours: 3 mg/l,
EL0, 48 hours: 4 mg/l,
WAF (OECD 202, EU Method C.2)

Acute toxicity - aquatic plants EL50, 72 hours: 10 - 30 mg/l, Algae
NOELR, 72 hours: 10 mg/l, Algae
WAF (OECD 201, EU Method C.3)

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOELR, 28 days: 1,53 mg/l, Fish
(QSAR)

Chronic toxicity - aquatic invertebrates NOELR, 21 days: 1 mg/l,
LOELR, 21 days: 2 mg/l,
NOEC, 21 days: 0,17 mg/l,
LOEC, 21 days: 0,32 mg/l,
WAF (OECD 211)

12.2. Persistence and degradability

Phototransformation The product contains volatile substances which may spread in the atmosphere.
Can be photodegraded in the atmosphere.

Stability (hydrolysis) No significant reaction in water.

Ecological information on ingredients.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Biodegradation Rapidly degradable
(OECD 301 F, EU Method C.4-D)

12.3. Bioaccumulative potential

Bioaccumulative potential No data available.

Partition coefficient log Kow: 2...7

12.4. Mobility in soil

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Mobility Volatile. Volatilization is the fastest and most dominant elimination process in surface water and soil. Product can penetrate soil until reaching the surface of ground water. The product contains substances which are bound to particulate matter and are retained in soil.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Waste packaging should be collected for reuse or recycling.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 1268

14.2. UN proper shipping name

Proper shipping name (ADR/RID) UN 1268 PETROLEUM DISTILLATES N.O.S.

14.3. Transport hazard class(es)

ADR/RID class 3

14.4. Packing group

ADR/RID packing group II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

MARINE POLLUTANT

14.6. Special precautions for user

Hazard Identification Number (ADR/RID) 33

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Bulk: (MARPOL 73/78, Annex II) Heptane (all isomers). Ship type: 2 Pollution category: Cat X According to MARPOL: "Non-solidifying substance"

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

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EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Commission Regulation (EU) No 2015/830 of 28 May 2015.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	DNEL = Derived No-Effect Level PNEC = Predicted No-Effect Concentration SU = Sector of Use PROC = Process Category PC = Product Category ERC = Environmental Release Category WAF = Water Accommodated Fraction
Key literature references and sources for data	Regulations, databases, literature, own research. Chemical Safety Report Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics, 2012.
Revision comments	Updated, sections: 1. Exposure scenarios
Revision date	23/10/2018
Supersedes date	27/11/2017
SDS number	5734
Hazard statements in full	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H336 May cause drowsiness or dizziness. H411 Toxic to aquatic life with long lasting effects.

Exposure scenario

Manufacture of Substance - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES01

1. Title of exposure scenario

Main title	Manufacture of Substance - Industrial
Process scope	Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals SU10 Formulation [mixing] of preparations and/or re-packaging

Environment

Environmental release category	ERC1 Manufacture of the substance ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 1.1.v1

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 4500 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 4500 tonnes
Maximum daily site tonnage: 45 tonnes

Frequency and duration of use

Manufacture of Substance - Industrial

Continuous release.
Emission days: 100 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 5.0E-02
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-04
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-04

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 720 tonne/day
Assumed domestic sewage treatment plant flow (m³/day):
10000

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

Air Treat air emission to provide a typical removal efficiency of 90%.
Water Risk from environmental exposure is driven by freshwater sediment. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 39.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment During manufacturing no waste of the substance is generated.

Conditions and measures related to external recovery of waste

Recovery method During manufacturing no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.
Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Manufacture of Substance - Industrial

Risk management measures

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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General exposures (closed systems)

No other specific measures identified.

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General exposures (closed systems)

Handle substance within a closed system.

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General exposures (open systems)

No other specific measures identified.

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Process sampling

No other specific measures identified.

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Laboratory activities

No other specific measures identified.

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Bulk transfers

(open systems)

No other specific measures identified.

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Bulk transfers

(closed systems)

Handle substance within a closed system.

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Equipment cleaning and maintenance

No other specific measures identified.

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Storage

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Manufacture of Substance - Industrial

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.
Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use of Substance as Intermediate - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES01b

1. Title of exposure scenario

Main title	Use of Substance as Intermediate - Industrial
Process scope	Use of substance as an intermediate within closed or contained systems (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals
Environment	
Environmental release category	ERC6a Use of intermediate
SPERC	ESVOC SPERC 6.1a.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 26 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 26 tonnes
Maximum daily site tonnage: 1.3 tonnes

Frequency and duration of use

Use of Substance as Intermediate - Industrial

Continuous release.
Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 1.0E-02
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-04
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-03

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 140 tonne/day
Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 80%.
Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 % Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment This substance is consumed during use and no waste of the substance is generated.

Conditions and measures related to external recovery of waste

Recovery method This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.
Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Use of Substance as Intermediate - Industrial

Risk management measures

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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General exposures (closed systems)

No other specific measures identified.

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General exposures (closed systems)

Handle substance within a closed system.

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General exposures (open systems)

No other specific measures identified.

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Process sampling

No other specific measures identified.

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Laboratory activities

No other specific measures identified.

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Bulk transfers

(open systems)

No other specific measures identified.

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Bulk transfers

(closed systems)

Handle substance within a closed system.

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Equipment cleaning and maintenance

No other specific measures identified.

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Storage

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Use of Substance as Intermediate - Industrial

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Formulation & (Re)packing of Substances and Mixtures - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES02a

1. Title of exposure scenario

Main title	Formulation & (Re)packing of Substances and Mixtures - Industrial
Process scope	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU10 Formulation [mixing] of preparations and/or re-packaging
Environment	
Environmental release category	ERC2 Formulation into mixture
SPERC	ESVOC SPERC 2.2.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Formulation & (Re)packing of Substances and Mixtures - Industrial

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 360 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 360 tonnes
 Maximum daily site tonnage: 3.6 tonnes

Frequency and duration of use

Continuous release.
 Emission days: 100 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 2.5E-02

Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 2.0E-04

Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-04

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2 %%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 220 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 0%.

Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Formulation & (Re)packing of Substances and Mixtures - Industrial

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Formulation & (Re)packing of Substances and Mixtures - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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General exposures (closed systems)

Handle substance within a closed system.

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General exposures (open systems)

No other specific measures identified.

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Batch processes at elevated temperatures

Operation is carried out at elevated temperature (> 20°C above ambient temperature).
Formulate in enclosed or ventilated mixing vessels.

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Process sampling

No other specific measures identified.

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Laboratory activities

No other specific measures identified.

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Bulk transfers

No other specific measures identified.

.

Mixing operations

(open systems)

No other specific measures identified.

.

Manual

Transfer from/pouring from containers

No other specific measures identified.

.

Drum/batch transfers

No other specific measures identified.

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

No other specific measures identified.

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Drum and small package filling

No other specific measures identified.

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Equipment cleaning and maintenance

No other specific measures identified.

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Storage

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Formulation & (Re)packing of Substances and Mixtures - Industrial

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Uses in Coatings - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES03a

1. Title of exposure scenario

Main title	Uses in Coatings - Industrial
Process scope	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, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.3a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC15 Use as laboratory reagent.</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Uses in Coatings - Industrial

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 400 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 400 tonnes
 Maximum daily site tonnage: 20 tonnes

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.98
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 7.0E-04
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 62 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 90%.
Water Risk from environmental exposure is driven by freshwater sediment. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 88.2. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Uses in Coatings - Industrial

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Uses in Coatings - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems)

No other specific measures identified.

General exposures (closed systems)

With sample collection

Use in contained systems

No other specific measures identified.

Film formation - force drying, stoving and other technologies

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Mixing operations

(closed systems)

General exposures (closed systems)

No other specific measures identified.

Film formation - air drying

No other specific measures identified.

Preparation of material for application

Mixing operations

(open systems)

No other specific measures identified.

Spraying (automatic/robotic)

No other specific measures identified.

Manual spraying

No other specific measures identified.

Material transfers

No other specific measures identified.

Roller, spreader, flow application

No other specific measures identified.

Dipping, immersion and pouring

No other specific measures identified.

Laboratory activities

No other specific measures identified.

Material transfers

Drum/batch transfers

Transfer from/pouring from containers

Uses in Coatings - Industrial

No other specific measures identified.

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Production of preparations or articles by tableting, compression, extrusion, pelletisation
No other specific measures identified.

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Equipment cleaning and maintenance
No other specific measures identified.

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Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Uses in Coatings - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES03b

1. Title of exposure scenario

Main title	Uses in Coatings - Professional
Process scope	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.
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.3b.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. PROC15 Use as laboratory reagent. PROC19 Manual activities involving hand contact

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Uses in Coatings - Professional

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 300 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 0.15 tonnes
 Maximum daily site tonnage: 0.41 kg

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.98
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.01

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2%
 Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 1.5 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Uses in Coatings - Professional

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Uses in Coatings - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems)

Handle substance within a closed system.

Filling/preparation of equipment from drums or containers.

Use in contained systems

Handle substance within a closed system.

General exposures (closed systems)

Use in contained systems

Handle substance within a closed system.

Preparation of material for application

Use in contained batch processes

No other specific measures identified.

Film formation - air drying

Indoor/outdoor use.

No other specific measures identified.

Preparation of material for application

Indoor.

No other specific measures identified.

Material transfers

Drum/batch transfers

No other specific measures identified.

Material transfers

Drum/batch transfers

Dedicated facility

No other specific measures identified.

Roller, spreader, flow application

Outdoor.

No other specific measures identified.

Manual spraying

Indoor/outdoor use.

No other specific measures identified.

Dipping, immersion and pouring

Indoor/outdoor use.

No other specific measures identified.

Laboratory activities

No other specific measures identified.

Uses in Coatings - Professional

Hand application - fingerpaints, pastels, adhesives
Indoor/outdoor use.
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Uses in Coatings - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES03c

1. Title of exposure scenario

Main title	Uses in Coatings - Consumer
Process scope	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.
Product category	PC1 Adhesives, sealants. PC4 Anti-freeze and de-icing products. PC8a Excipient only 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 treatment products PC24 Lubricants, greases and release products. PC31 Polishes and wax blends. PC34 Textile dyes and impregnating products
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.3c.v1
<u>Non-industrial</u>	

Uses in Coatings - Consumer

Product sub-category	PC1_1 Glues, hobby use
	PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)
	PC1_3 Glue from spray
	PC1_4 Sealants
	PC4_1 Washing car window
	PC4_2 Pouring into radiator
	PC4_3 Lock de-icer
	PC8_1 Laundry and dish-washing products
	PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
	PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
	PC9a_1 Water-borne latex wall paint
	PC9a_2 Solvent-rich, high-solid, water-borne paint
	PC9a_3 Aerosol spray can
	PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)
	PC9b_1 Fillers and putty
	PC9b_2 Plasters and floor equalisers
	PC9b_3 Modelling clay
	PC15_1 Water-borne latex wall paint
	PC15_2 Solvent rich, high solid, water-borne paint
	PC15_3 Aerosol spray can
	PC15_4 Removers (paint-, glue-, wall paper-, sealant remover)
	PC23_1 Polishes, wax/cream (floor, furniture, shoes)
	PC23_2 Polishes, spray (furniture, shoes)
	PC24_1 Liquids
	PC24_2 Pastes
	PC24_3 Sprays
	PC31_1 Polishes, wax/cream (floor, furniture, shoes)
	PC31_2 Polishes, spray (furniture, shoes)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 80 tonnes/year
 Fraction of Regional tonnage used locally: 5.0E-04
 Annual site tonnage: 4.0E-02 tonnes
 Maximum daily site tonnage: 0.11 kg/day

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.985
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.005

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Uses in Coatings - Consumer

Risk management measures

STP details

Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 510 kg/day
 Assumed domestic sewage treatment plant flow (m³/day):
 2000

Conditions and measures related to external treatment of waste for disposal

Waste treatment

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method

External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

PC1 Adhesives, sealants. PC1_1 Glues, hobby use PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) PC1_3 Glue from spray PC1_4 Sealants PC4 Anti-freeze and de-icing products. PC4_1 Washing car window PC4_2 Pouring into radiator PC4_3 Lock de-icer PC8 Biocidal products PC8a Excipient only PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Product characteristics

Physical state

Liquid

Vapour pressure

Liquid, vapour pressure > 10 Pa (STP)

Concentration details

PC1 Adhesives, sealants. : Covers concentrations up to 30 %. PC4_1 Washing car window : Covers concentrations up to 1 %. PC4_2 Pouring into radiator : Covers concentrations up to 10 %. PC4_3 Lock de-icer : Covers concentrations up to 50 %. PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) : Covers concentrations up to 5 %. PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Covers concentrations up to 15 %.

PC1_1 Glues, hobby use : Avoid using at a product concentration greater than 3%. . PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) : Avoid using at a product concentration greater than 3.3%. . PC1_3 Glue from spray PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Avoid using at a product concentration greater than 11%. . PC1_4 Sealants PC4_2 Pouring into radiator : Avoid using at a product concentration greater than 2.5%. . PC4_3 Lock de-icer : Avoid using at a product concentration greater than 45%. . PC8_1 Laundry and dish-washing products : Avoid using at a product concentration greater than 3.5%.

Amounts used

Uses in Coatings - Consumer

PC1_1 Glues, hobby use

For each use event, covers use amounts up to 9 g.

For each use event, avoid using a product amount of greater than 5 g.

PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)

For each use event, covers use amounts up to 6390 g.

PC1_3 Glue from spray

For each use event, covers use amounts up to 85.05 g.

PC1_4 Sealants

For each use event, covers use amounts up to 75 g.

For each use event, avoid using a product amount of greater than 25 g.

PC4_1 Washing car window

For each use event, covers use amounts up to 0.5 g.

PC4_2 Pouring into radiator

For each use event, covers use amounts up to 2000 g.

PC4_3 Lock de-icer

For each use event, covers use amounts up to 4 g.

PC8_1 Laundry and dish-washing products

For each use event, covers use amounts up to 15 g.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

For each use event, covers use amounts up to 27 g.

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

For each use event, covers use amounts up to 35 g.

Frequency and duration of use

Covers use up to 1 time(s)/day.

Covers use up to 365 days/year.

Unless otherwise stated.

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PC1_1 Glues, hobby use

Covers exposure up to 4.00 hours per event.

PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Covers use up to 1 days/year.

Covers exposure up to 6.00 hours per event.

PC1_3 Glue from spray

Covers use up to 6 days/year.

Covers exposure up to 4.00 hours per event.

PC1_4 Sealants

Covers exposure up to 1.00 hours per event.

PC4_1 Washing car window

Covers exposure up to 0.02 hours per event.

PC4_2 Pouring into radiator

Covers exposure up to 0.17 hours per event.

PC4_3 Lock de-icer

Covers exposure up to 0.25 hours per event.

PC8_1 Laundry and dish-washing products

Covers exposure up to 0.50 hours per event.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Covers use up to 128 days/year.

Covers exposure up to 0.33 hours per event.

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Covers use up to 128 days/year.

Covers exposure up to 0.17 hours per event.

Uses in Coatings - Consumer

Human factors not influenced by risk management

Potentially exposed body parts	PC1_1 Glues, hobby use PC1_3 Glue from spray PC1_4 Sealants : Covers skin contact area up to 35.73 cm ² . . PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) : Covers skin contact area up to 110.00 cm ² . . PC4_2 Pouring into radiator PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Covers skin contact area up to 428.00 cm ² . . PC4_3 Lock de-icer : Covers skin contact area up to 214.40 cm ² . . PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) PC4_1 Washing car window PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) : Covers skin contact area up to 857.50 cm ² . PC9b_3 Modelling clay : For each use event, assumes swallowed amount of (g): 1 g . PC9c Finger paints : For each use event, assumes swallowed amount of (g): 1.35 g .
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Other given operational conditions affecting Non-industrial exposure

Setting	PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) . PC1_4 Sealants . PC9a_1 Water-borne latex wall paint . PC9a_2 Solvent-rich, high-solid, water-borne paint . PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b_2 Plasters and floor equalisers . PC15_1 Water-borne latex wall paint . PC15_2 Solvent rich, high solid, water-borne paint . PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) : Avoid using when windows closed.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PC1 Adhesives, sealants. PC8 Biocidal products : Covers use in room size of 20 m ³ . . PC4 Anti-freeze and de-icing products. : Covers use in room size of 34 m ³ .
Ventilation rate	PC1 Adhesives, sealants. PC8 Biocidal products : Covers use under typical household ventilation. . PC4 Anti-freeze and de-icing products. : Covers use in a one car garage (34 m ³) under typical ventilation. PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) PC1_4 Sealants : Avoid using when windows closed.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

2. Conditions of use affecting exposure (Non-industrial - Health 2)

Control of Non-industrial exposure

PC9a Coatings and paints, thinners, paint removers. PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_3 Aerosol spray can. PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b Fillers, putties, plasters, modelling clay. PC9b_1 Fillers and putty PC9b_2 Plasters and floor equalisers PC9b_3 Modelling clay PC9c Finger paints. PC15 Non-metal-surface treatment products. PC15_1 Water-borne latex wall paint PC15_3 Aerosol spray can PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) PC18 Ink and toners.

Product characteristics

Physical state	Liquid
Vapour pressure	Liquid, vapour pressure > 10 Pa (STP)

Uses in Coatings - Consumer

Concentration details

PC9b_3 Modelling clay : Covers concentrations up to 1 %. PC9a_1 Water-borne latex wall paint PC15_1 Water-borne latex wall paint : Covers concentrations up to 1,5 %. PC9b_1 Fillers and putty PC9b_2 Plasters and floor equalisers : Covers concentrations up to 2 %. PC18 Ink and toners. : Covers concentrations up to 10 %. PC9a_2 Solvent-rich, high-solid, water-borne paint PC15_2 Solvent rich, high solid, water-borne paint : Covers concentrations up to 27,5 %. PC9a_3 Aerosol spray can. PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9c Finger paints. PC15_3 Aerosol spray can PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) : Covers concentrations up to 50 %.

PC9a_1 Water-borne latex wall paint Avoid using at a product concentration greater than 1,5%. PC9a_2 Solvent-rich, high-solid, water-borne paint Avoid using at a product concentration greater than 5%. PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). Avoid using at a product concentration greater than 14%. PC9b_2 Plasters and floor equalisers Avoid using at a product concentration greater than 1,8%. PC9b_3 Modelling clay Avoid using at a product concentration greater than 0,027%. PC9c Finger paints. Avoid using at a product concentration greater than 0,025%. PC15_1 Water-borne latex wall paint Avoid using at a product concentration greater than 1,5%. PC15_2 Solvent rich, high solid, water-borne paint Avoid using at a product concentration greater than 5%. PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) Avoid using at a product concentration greater than 14%. PC18 Ink and toners. Avoid using at a product concentration greater than 0,45%.

Amounts used

PC9a_1 Water-borne latex wall paint
For each use event, covers use amounts up to 2760 g.

PC9a_2 Solvent-rich, high-solid, water-borne paint
For each use event, covers use amounts up to 744 g.

PC9a_3 Aerosol spray can.
For each use event, covers use amounts up to 215 g.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).
For each use event, covers use amounts up to 491 g.

PC9b_1 Fillers and putty
For each use event, covers use amounts up to 85 g.

PC9b_2 Plasters and floor equalisers
For each use event, covers use amounts up to 13,8 kg.
For each use event, avoid using a product amount of greater than 900 g.

PC9b_3 Modelling clay
For each use event, avoid swallowing amounts more than 1 g.

PC9c Finger paints.
For each use event, avoid swallowing amounts more than 1,35 g.

PC15_1 Water-borne latex wall paint
For each use event, covers use amounts up to 2760 g.

PC15_2 Solvent rich, high solid, water-borne paint
For each use event, covers use amounts up to 744 g.

PC15_3 Aerosol spray can
For each use event, covers use amounts up to 215 g.

PC15_4 Removers (paint-, glue-, wall paper-, sealant remover)
For each use event, covers use amounts up to 491 g.

PC18 Ink and toners.
For each use event, covers use amounts up to 40 g.

Frequency and duration of use

Uses in Coatings - Consumer

Covers use up to 1 time(s)/day.
Unless otherwise stated.

PC9a_1 Water-borne latex wall paint

Covers use up to 4 days/year.

Covers exposure up to 2,20 hours per event.

PC9a_2 Solvent-rich, high-solid, water-borne paint

Covers use up to 6 days/year.

Covers exposure up to 2,20 hours per event.

PC9a_3 Aerosol spray can.

Covers use up to 2 days/year.

Covers exposure up to 0,33 hours per event.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).

Covers use up to 3 days/year.

Covers exposure up to 2,00 hours per event.

PC9b_1 Fillers and putty

Covers use up to 12 days/year.

Covers exposure up to 4,00 hours per event.

PC9b_2 Plasters and floor equalisers

Covers use up to 12 days/year.

Covers exposure up to 2,00 hours per event.

PC9b_3 Modelling clay

Covers use up to 365 days/year.

Covers exposure up to 6 hours per event.

PC9c Finger paints.

Covers use up to 365 days/year.

Covers exposure up to 6 hours per event.

PC15_1 Water-borne latex wall paint

Covers use up to 4 days/year.

Covers exposure up to 2,20 hours per event.

PC15_2 Solvent rich, high solid, water-borne paint

Covers use up to 6 days/year.

Covers exposure up to 2,20 hours per event.

PC15_3 Aerosol spray can

Covers use up to 2 days/year.

Covers exposure up to 0,33 hours per event.

PC15_4 Removers (paint-, glue-, wall paper-, sealant remover)

Covers use up to 3 days/year.

Covers exposure up to 2,00 hours per event.

PC18 Ink and toners.

Covers use up to 365 days/year.

Covers exposure up to 2,20 hours per event.

Human factors not influenced by risk management

Potentially exposed body parts

PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint
PC15_1 Water-borne latex wall paint PC15_2 Solvent rich, high solid, water-borne paint :
Covers skin contact area up to 428,75 cm². . PC9a_4 Removers (paint-, glue-, wallpaper-,
sealant-remover). PC9b_2 Plasters and floor equalisers PC9a_3 Aerosol spray can PC15_4
Removers (paint-, glue-, wall paper-, sealant remover) PC15_3 Aerosol spray can : Covers
skin contact area up to 857,50 cm². . PC9b_1 Fillers and putty : Covers skin contact area up
to 35,75 cm². . PC9b_3 Modelling clay PC9c Finger paints. : Covers skin contact area up to
254,40 cm². . PC18 Ink and toners. : Covers skin contact area up to 71,40 cm².

PC9b_3 Modelling clay : For each use event, assumes swallowed amount of (g): . 1 g PC9c
Finger paints. : For each use event, assumes swallowed amount of (g): 1,35 g

Uses in Coatings - Consumer

Other given operational conditions affecting Non-industrial exposure

Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b Fillers, putties, plasters, modelling clay. PC9c Finger paints. PC15_1 Water-borne latex wall paint PC15_2 Solvent rich, high solid, water-borne paint PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) PC18 Ink and toners. : Covers use in room size of 20 m ³ . . PC9a_3 Aerosol spray can. PC15_3 Aerosol spray can : Covers use in room size of 34 m ³ .
Ventilation rate	PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b Fillers, putties, plasters, modelling clay. PC9c Finger paints. PC15_1 Water-borne latex wall paint PC15_2 Solvent rich, high solid, water-borne paint PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) PC18 Ink and toners. : Covers use under typical household ventilation. . PC9a_3 Aerosol spray can. PC15_3 Aerosol spray can : Covers use in a one car garage (34 m ³) under typical ventilation. PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b_2 Plasters and floor equalisers PC15_1 Water-borne latex wall paint PC15_2 Solvent rich, high solid, water-borne paint PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) : Avoid using when windows closed.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

2. Conditions of use affecting exposure (Non-industrial - Health 3)

Control of Non-industrial exposure

PC23 Leather treatment products PC23_1 Polishes, wax/cream (floor, furniture, shoes) PC23_2 Polishes, spray (furniture, shoes) PC24 Lubricants, greases and release products. PC24_1 Liquids PC24_2 Pastes PC24_3 Sprays PC31 Polishes and wax blends. PC31_1 Polishes, wax/cream (floor, furniture, shoes) PC31_2 Polishes, spray (furniture, shoes) PC34 Textile dyes and impregnating products

Product characteristics

Physical state	Liquid
Vapour pressure	Liquid, vapour pressure > 10 Pa (STP)
Concentration details	PC24_1 Liquids : Covers concentrations up to 100 %. . PC23 Leather treatment products PC24_3 Sprays PC31 Polishes and wax blends. : Covers concentrations up to 50 %. . PC24_2 Pastes : Covers concentrations up to 20 %. . PC34 Textile dyes and impregnating products : Covers concentrations up to 10 %. PC23_1 Polishes, wax/cream (floor, furniture, shoes) Avoid using at a product concentration greater than 6%. PC31_1 Polishes, wax/cream (floor, furniture, shoes) Avoid using at a product concentration greater than 2,4%. PC34 Textile dyes and impregnating products Avoid using at a product concentration greater than 1,1%.

Amounts used

Uses in Coatings - Consumer

PC23_1 Polishes, wax/cream (floor, furniture, shoes)

For each use event, covers use amounts up to 56 g.

PC23_2 Polishes, spray (furniture, shoes)

For each use event, covers use amounts up to 56 g.

PC24_1 Liquids

For each use event, covers use amounts up to 2200 g.

PC24_2 Pastes

For each use event, covers use amounts up to 34 g.

PC24_3 Sprays

For each use event, covers use amounts up to 73 g.

PC31_1 Polishes, wax/cream (floor, furniture, shoes)

For each use event, covers use amounts up to 142 g.

PC31_2 Polishes, spray (furniture, shoes)

For each use event, covers use amounts up to 35 g.

PC34 Textile dyes and impregnating products

For each use event, covers use amounts up to 115 g.

PC34 Textile dyes and impregnating products : For each use event, avoid using a product amount of greater than 45 g.

Frequency and duration of use

Covers use up to 1 time(s)/day.

Unless otherwise stated.

PC23_1 Polishes, wax/cream (floor, furniture, shoes)

Covers use up to 29 days/year.

Covers exposure up to 1,23 hours per event.

PC23_2 Polishes, spray (furniture, shoes)

Covers use up to 8 days/year.

Covers exposure up to 0,33 hours per event.

PC24_1 Liquids

Covers use up to 4 days/year.

Covers exposure up to 0,17 hours per event.

PC24_2 Pastes

Covers use up to 10 days/year.

Covers exposure up to 4,00 hours per event.

PC24_3 Sprays

Covers use up to 6 days/year.

Covers exposure up to 0,17 hours per event.

PC31_1 Polishes, wax/cream (floor, furniture, shoes)

Covers use up to 29 days/year.

Covers exposure up to 1,23 hours per event.

PC31_2 Polishes, spray (furniture, shoes)

Covers use up to 8 days/year.

Covers exposure up to 0,33 hours per event.

PC34 Textile dyes and impregnating products

Covers use up to 365 days/year.

Covers exposure up to 1,00 hours per event.

Human factors not influenced by risk management

Potentially exposed body parts

PC23 Leather treatment products PC31 Polishes and wax blends. : Covers skin contact area up to 430,00 cm². . PC24_1 Liquids PC24_2 Pastes : Covers skin contact area up to 468,00 cm². . PC24_3 Sprays : Covers skin contact area up to 428,75 cm². . PC34 Textile dyes and impregnating products : Covers skin contact area up to 857,50 cm².

Other given operational conditions affecting Non-industrial exposure

Uses in Coatings - Consumer

Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PC23 Leather treatment products PC24_2 Pastes PC24_3 Sprays PC31 Polishes and wax blends. PC34 Textile dyes and impregnating products : Covers use in room size of 20 m ³ . . PC24_1 Liquids : Covers use in room size of 34 m ³ .
Ventilation rate	PC23 Leather treatment products PC24_2 Pastes PC24_3 Sprays PC31 Polishes and wax blends. PC34 Textile dyes and impregnating products : Covers use under typical household ventilation. . PC24_1 Liquids : Covers use in a one car garage (34 m ³) under typical ventilation. PC34 Textile dyes and impregnating products : Avoid using in room size less than 34 m ³ .

3. Exposure estimation (Environment 1)

Assessment method	Used Petrorisk model. (Hydrocarbon Block Method)
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4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method	The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.
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4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Cleaning Agents - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES04a

1. Title of exposure scenario

Main title	Use in Cleaning Agents - Industrial
Process scope	Covers the use as a component of cleaning products, including transfer from storage, 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), related equipment cleaning and maintenance.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.4a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 74 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 74 tonnes
 Maximum daily site tonnage: 3.7 tonnes

Frequency and duration of use

Use in Cleaning Agents - Industrial

Continuous release.
Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 1.0
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-06
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 4600 tonne/day
Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 70%.
Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.
Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Use in Cleaning Agents - Industrial

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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Bulk transfers

No other specific measures identified.

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Automated process with (semi) closed systems

Use in contained systems

No other specific measures identified.

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Automated process with (semi) closed systems

Drum/batch transfers

No other specific measures identified.

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Application of cleaning products in closed systems

No other specific measures identified.

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Filling/preparation of equipment from drums or containers.

No other specific measures identified.

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Use in contained batch processes

No other specific measures identified.

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Degreasing small objects in cleaning station

No other specific measures identified.

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Cleaning with low-pressure washers

No other specific measures identified.

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Cleaning with high-pressure washers

No other specific measures identified.

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Manual

Surface cleaning

No other specific measures identified.

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Storage

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Use in Cleaning Agents - Industrial

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Cleaning Agents - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES04b

1. Title of exposure scenario

Main title	Use in Cleaning Agents - Professional
Process scope	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).
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.4b.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 23 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 1.2E-02 tonnes
Maximum daily site tonnage: 3.2E-02 kg

Frequency and duration of use

Use in Cleaning Agents - Professional

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.02
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 1.0E-06
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 170 kg/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0 . If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Use in Cleaning Agents - Professional

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use in Cleaning Agents - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

.
Filling/preparation of equipment from drums or containers.
No other specific measures identified.

.
Automated process with (semi) closed systems
Use in contained systems
No other specific measures identified.

.
Automated process with (semi) closed systems
Drum/batch transfers
Use in contained systems
No other specific measures identified.

.
Semi-automated process (e.g. semi-automatic application of floor care and maintenance products)
No other specific measures identified.

.
Manual
Surface cleaning
Dipping, immersion and pouring
No other specific measures identified.

.
Cleaning with low-pressure washers
Rolling, brushing
No spraying
No other specific measures identified.

.
Cleaning with high-pressure washers
Spraying
Indoor/outdoor use.
No other specific measures identified.

.
Manual
Surface cleaning
Spraying
No other specific measures identified.

.
Ad hoc manual application via trigger sprays, dipping, etc.
Rolling, brushing
No other specific measures identified.

.
Application of cleaning products in closed systems
Outdoor.
No other specific measures identified.

.
Cleaning of medical devices
No other specific measures identified.

Use in Cleaning Agents - Professional

Storage

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Cleaning Agents - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES04c

1. Title of exposure scenario

Main title	Use in Cleaning Agents - Consumer
Process scope	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.
Product category	PC3 Air care products. PC4 Anti-freeze and de-icing products. PC8a Excipient only PC9a Coatings and paints, thinners, paint removers. PC9b Fillers, putties, plasters, modelling clay. PC9c Finger paints. PC24 Lubricants, greases and release products. PC35 Washing and cleaning products PC38 Welding and soldering products, flux products
Main sector	SU21 Consumer uses
Environment	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.4c.v1
Non-industrial	

Use in Cleaning Agents - Consumer

Product sub-category	PC3_1 Air care, instant action (aerosol sprays)
	PC3_n Air care, instant action (aerosol sprays) - pesticidal - excipient only
	PC3_2 Air care, continuous action (solid and liquid)
	PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only
	PC4_1 Washing car window
	PC4_2 Pouring into radiator
	PC4_3 Lock de-icer
	PC8_1 Laundry and dish-washing products
	PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
	PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
	PC9a_1 Water-borne latex wall paint
	PC9a_2 Solvent-rich, high-solid, water-borne paint
	PC9a_3 Aerosol spray can
	PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)
	PC9b_1 Fillers and putty
	PC9b_2 Plasters and floor equalisers
	PC9b_3 Modelling clay
	PC24_1 Liquids
	PC24_2 Pastes
	PC24_3 Sprays
	PC35_1 Laundry and dish washing products
	PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners)
	PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 13 tonnes/year
 Fraction of Regional tonnage used locally: 5.0E-04
 Annual site tonnage: 6.5E-03 tonnes
 Maximum daily site tonnage: 1.8E-02 kg/day

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

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

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Use in Cleaning Agents - Consumer

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 88 kg/day
 Assumed domestic sewage treatment plant flow (m³/day):
 2000

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

PC3 Air care products. PC3_1 Air care, instant action (aerosol sprays) PC3_2 Air care, continuous action (solid and liquid) PC4 Anti-freeze and de-icing products. PC4_1 Washing car window PC4_2 Pouring into radiator PC4_3 Lock de-icer PC8 Biocidal products PC8a Excipient only PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC9a Coatings and paints, thinners, paint removers. PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_3 Aerosol spray can. PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b Fillers, putties, plasters, modelling clay. PC9b_1 Fillers and putty PC9b_2 Plasters and floor equalisers PC9b_3 Modelling clay PC9c Finger paints.

Product characteristics

Physical state Liquid

Vapour pressure Liquid, vapour pressure > 10 Pa (STP)

Concentration details PC3_1 Air care, instant action (aerosol sprays) PC3_n Air care, instant action (aerosol sprays) - pesticidal - excipient only PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only PC4_3 Lock de-icer PC9a_3 Aerosol spray can PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) PC9c Finger paints : Covers concentrations up to 50 % . . PC3_2 Air care, continuous action (solid and liquid) PC4_2 Pouring into radiator : Covers concentrations up to 10 % . . PC4_1 Washing car window PC9b_3 Modelling clay : Covers concentrations up to 1 % . . PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) : Covers concentrations up to 5 % . . PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Covers concentrations up to 15 % . . PC9a_1 Water-borne latex wall paint : Covers concentrations up to 1.5 % . . PC9a_2 Solvent-rich, high-solid, water-borne paint : Covers concentrations up to 27.5 % . . PC9b_1 Fillers and putty PC9b_2 Plasters and floor equalisers : Covers concentrations up to 2 % .

Use in Cleaning Agents - Consumer

PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only : Avoid using at a product concentration greater than 25%. PC4_2 Pouring into radiator : Avoid using at a product concentration greater than 2.5%. PC4_3 Lock de-icer : Avoid using at a product concentration greater than 45%. PC8_1 Laundry and dish-washing products : Avoid using at a product concentration greater than 3.5%. PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Avoid using at a product concentration greater than 11%. PC9a_1 Water-borne latex wall paint : Avoid using at a product concentration greater than 1.5%. PC9a_2 Solvent-rich, high-solid, water-borne paint . PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) : Avoid using at a product concentration greater than 14%. PC9b_2 Plasters and floor equalisers : Avoid using at a product concentration greater than 1.8%. PC9b_3 Modelling clay : Avoid using at a product concentration greater than 0.027%. PC9c Finger paints : Avoid using at a product concentration greater than 0.025%.

Amounts used

PC3_1 Air care, instant action (aerosol sprays)
For each use event, covers use amounts up to 0.1 g.

PC3_n Air care, instant action (aerosol sprays) - pesticidal - excipient only
For each use event, covers use amounts up to 0.5 g.

PC3_2 Air care, continuous action (solid and liquid)
For each use event, covers use amounts up to 0.48 g.

PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only
For each use event, covers use amounts up to 0.48 g.

PC4_1 Washing car window
For each use event, covers use amounts up to 0.5 g.

PC4_2 Pouring into radiator
For each use event, covers use amounts up to 2000 g.

PC4_3 Lock de-icer
For each use event, covers use amounts up to 4 g.

PC8_1 Laundry and dish-washing products
For each use event, covers use amounts up to 15 g.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)
For each use event, covers use amounts up to 27 g.

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
For each use event, covers use amounts up to 35 g.

PC9a_1 Water-borne latex wall paint
For each use event, covers use amounts up to 2760 g.

PC9a_2 Solvent-rich, high-solid, water-borne paint
For each use event, covers use amounts up to 744 g.

PC9a_3 Aerosol spray can
For each use event, covers use amounts up to 215 g.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)
For each use event, covers use amounts up to 491 g.

PC9b_1 Fillers and putty
For each use event, covers use amounts up to 85 g.

PC9b_2 Plasters and floor equalisers
For each use event, covers use amounts up to 13.8 kg.
For each use event, avoid using a product amount of greater than 900 g.

PC9b_3 Modelling clay
For each use event, covers use amounts up to 13800 g.

PC9c Finger paints.
For each use event, covers use amounts up to 13800 g.

Frequency and duration of use

Use in Cleaning Agents - Consumer

Covers use up to 1 time(s)/day.

Covers use up to 365 days/year.

Unless otherwise stated.

PC3_1 Air care, instant action (aerosol sprays)

Covers use up to 4 time(s)/day.

Covers exposure up to 0.25 hours per event.

PC3_n Air care, instant action (aerosol sprays) - pesticidal - excipient only

Covers use up to 4 time(s)/day.

Covers exposure up to 0.25 hours per event.

PC3_2 Air care, continuous action (solid and liquid)

Covers exposure up to 8.00 hours per event.

PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only

Covers exposure up to 8.00 hours per event.

PC4_1 Washing car window

Covers exposure up to 0.02 hours per event.

PC4_2 Pouring into radiator

Covers exposure up to 0.17 hours per event.

PC4_3 Lock de-icer

Covers exposure up to 0.25 hours per event.

PC8_1 Laundry and dish-washing products

Covers exposure up to 0.50 hours per event.

PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Covers use up to 128 days/year.

Covers exposure up to 0.33 hours per event.

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Covers use up to 128 days/year.

Covers exposure up to 0.17 hours per event.

PC9a_1 Water-borne latex wall paint

Covers use up to 4 days/year.

Covers exposure up to 2.20 hours per event.

PC9a_2 Solvent-rich, high-solid, water-borne paint

Covers use up to 6 days/year.

Covers exposure up to 2.20 hours per event.

PC9a_3 Aerosol spray can

Covers use up to 2 days/year.

Covers exposure up to 0.33 hours per event.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover)

Covers use up to 3 days/year.

Covers exposure up to 2.00 hours per event.

PC9b_1 Fillers and putty

Covers use up to 12 days/year.

Covers exposure up to 4.00 hour per event.

PC9b_2 Plasters and floor equalisers

Covers use up to 12 days/year.

Covers exposure up to 2.00 hours per event.

PC9b_3 Modelling clay

Covers exposure up to 8 hours per event.

PC9c Finger paints

Covers exposure up to 8 hours per event.

Human factors not influenced by risk management

Use in Cleaning Agents - Consumer

Potentially exposed body parts	<p>PC3_2 Air care, continuous action (solid and liquid) PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only : Covers skin contact area up to 35.70 cm². . PC4_2 Pouring into radiator PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Covers skin contact area up to 428.00 cm². . PC4_3 Lock de-icer : Covers skin contact area up to 214.40 cm². . PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) PC9b_2 Plasters and floor equalisers : Covers skin contact area up to 857.50 cm². . PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint : Covers skin contact area up to 428.75 cm². . PC9b_1 Fillers and putty : Covers skin contact area up to 35.73 cm². . PC9b_3 Modelling clay PC9c Finger paints : Covers skin contact area up to 254.40 cm².</p> <p>PC9b_3 Modelling clay : For each use event, assumes swallowed amount of (g): 1 g . PC9c Finger paints : For each use event, assumes swallowed amount of (g): 1.35 g .</p>
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Other given operational conditions affecting Non-industrial exposure

Setting	PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). PC9b_2 Plasters and floor equalisers : Avoid using when windows closed.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PC3_1 Air care, instant action (aerosol sprays) PC3_n Air care, instant action (aerosol sprays) - pesticidal - excipient only PC3_2 Air care, continuous action (solid and liquid) PC3_n Air care, continuous action (solid and liquid) - pesticidal - excipient only PC8_1 Laundry and dish-washing products PC8_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners) PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC9a_1 Water-borne latex wall paint PC9a_2 Solvent-rich, high-solid, water-borne paint PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) PC9b_1 Fillers and putty PC9b_2 Plasters and floor equalisers PC24_3 Sprays : Covers use in room size of 20 m ³ . PC4_1 Washing car window . PC4_2 Pouring into radiator . PC4_3 Lock de-icer PC9a_3 Aerosol spray can : Covers use in room size of 34 m ³ .
Ventilation rate	Covers use under typical household ventilation. Unless otherwise stated. . PC4_1 Washing car window PC4_2 Pouring into radiator PC4_3 Lock de-icer PC9a_3 Aerosol spray can : Covers use in a one car garage (34 m ³) under typical ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

2. Conditions of use affecting exposure (Non-industrial - Health 2)

Control of Non-industrial exposure

PC24 Lubricants, greases and release products. PC24_1 Liquids PC24_2 Pastes PC24_3 Sprays PC35 Washing and cleaning products PC35_1 Laundry and dish washing products PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners) PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) PC38 Welding and soldering products, flux products

Product characteristics

Physical state	Liquid
Vapour pressure	Liquid, vapour pressure > 10 Pa (STP)

Use in Cleaning Agents - Consumer

Concentration details

PC24_1 Liquids Covers concentrations up to 100 % . PC24_2 Pastes PC38 Welding and soldering products, flux products Covers concentrations up to 20 % . PC24_3 Sprays Covers concentrations up to 50 % . PC35_1 Laundry and dish washing products PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners) Covers concentrations up to 5 % . PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) Covers concentrations up to 15 %.

PC35_1 Laundry and dish washing products Avoid using at a product concentration greater than 3,5%. PC38 Welding and soldering products, flux products Avoid using at a product concentration greater than 5%. PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) Avoid using at a product concentration greater than 11%.

Amounts used

PC24_1 Liquids

For each use event, covers use amounts up to 2200 g.

PC24_2 Pastes

For each use event, covers use amounts up to 34 g.

PC24_3 Sprays

For each use event, covers use amounts up to 73 g.

PC35_1 Laundry and dish washing products

For each use event, covers use amounts up to 15 g.

PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners)

For each use event, covers use amounts up to 27 g.

PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

For each use event, covers use amounts up to 35 g.

PC38 Welding and soldering products, flux products

For each use event, covers use amounts up to 12 g.

Frequency and duration of use

Covers use up to 1 time(s)/day.

Unless otherwise stated.

.

PC24_1 Liquids

Covers use up to 4 days/year.

Covers exposure up to 0,17 hours per event.

PC24_2 Pastes

Covers use up to 10 days/year.

Covers exposure up to 4,00 hours per event.

PC24_3 Sprays

Covers use up to 10 days/year.

Covers exposure up to 0,17 hours per event.

PC35_1 Laundry and dish washing products

Covers use up to 365 days/year.

Covers exposure up to 0,50 hours per event.

PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners)

Covers use up to 128 days/year.

Covers exposure up to 0,33 hours per event.

PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Covers use up to 128 days/year.

Covers exposure up to 0,17 hours per event.

PC38 Welding and soldering products, flux products

Covers use up to 365 days/year.

Covers exposure up to 1,00 hours per event.

Use in Cleaning Agents - Consumer

Human factors not influenced by risk management

Potentially exposed body parts PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners) : Covers skin contact area up to 428,00 cm². . PC24_3 Sprays : Covers skin contact area up to 428,75 cm². . PC24_1 Liquids PC24_2 Pastes : Covers skin contact area up to 468,00 cm². . PC35_1 Laundry and dish washing products PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners) PC38 Welding and soldering products, flux products : Covers skin contact area up to 857,50 cm².

Other given operational conditions affecting Non-industrial exposure

Temperature Assumes activities are at ambient temperature (unless stated differently).

Room size PC24_2 Pastes PC24_3 Sprays PC35 Washing and cleaning products PC38 Welding and soldering products, flux products : Covers use in room size of 20 m³. . PC24_1 Liquids : Covers use in room size of 34 m³.

Ventilation rate PC24_2 Pastes PC24_3 Sprays PC35 Washing and cleaning products PC38 Welding and soldering products, flux products : Covers use under typical household ventilation. . PC24_1 Liquids : Covers use in a one car garage (34 m³) under typical ventilation.

PC38 Welding and soldering products, flux products : Avoid using when windows closed.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario Lubricants - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES06a

1. Title of exposure scenario

Main title	Lubricants - Industrial
Process scope	Covers the use of formulated lubricants in closed and open systems, including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 4.6a.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC17 Lubrication at high energy conditions in metal working operations PROC18 General greasing/lubrication at high kinetic energy conditions

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 7.5 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 7.5 tonnes
Maximum daily site tonnage: 380 kg

Lubricants - Industrial

Frequency and duration of use

Continuous release.
Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 1.0E-02
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-05
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-03

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 1400 tonne/day
Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 70%.
Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.
Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Lubricants - Industrial

Setting

Assumes a good basic standard of occupational hygiene is implemented.

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Lubricants - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems)

Handle substance within a closed system.

General exposures (open systems)

No other specific measures identified.

Bulk transfers

No other specific measures identified.

Filling/preparation of equipment from drums or containers.

No other specific measures identified.

Initial factory fill of equipment

No other specific measures identified.

Operation and lubrication of high energy open equipment

No other specific measures identified.

Manual

Application

Rolling, brushing

No other specific measures identified.

Treatment by dipping and pouring

No other specific measures identified.

Spraying

No other specific measures identified.

Maintenance (of larger plant items) and machine set up

No other specific measures identified.

Maintenance (of larger plant items) and machine set up

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Maintenance of small items

No other specific measures identified.

Remanufacture of reject articles

No other specific measures identified.

Storage

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Lubricants - Industrial

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Lubricants - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES06b

1. Title of exposure scenario

Main title	Lubricants - Professional
Process scope	Covers the use of formulated lubricants in closed and open systems, including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.
Main sector	SU22 Professional uses
Environment	
Environmental release category	<p>Low environmental release:</p> <p>ERC9a Widespread use of functional fluid (indoor)</p> <p>ERC9b Widespread use of functional fluid (outdoor)</p> <p>High environmental release:</p> <p>ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)</p> <p>ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)</p>
SPERC	ESVOC SPERC 9.6b.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC11 Non industrial spraying</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC17 Lubrication at high energy conditions in metal working operations</p> <p>PROC18 General greasing/lubrication at high kinetic energy conditions</p> <p>PROC20 Use of functional fluids in small devices</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Low environmental release: ERC 9a, 9b

Lubricants - Professional

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 3.8 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 1.9E-03 tonnes
 Maximum daily site tonnage: 365 kg

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.01

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP type Municipal STP.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 27 kg/day
 Assumed domestic sewage treatment plant flow (m³/day):
 2000

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

Air Treat air emission to provide a typical removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

Lubricants - Professional

2. Conditions of use affecting exposure (Industrial - Environment 2)

Control of environmental exposure

High environmental release: ERC 8a, 8d

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 3.8 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 1.9E-03 tonnes
 Maximum daily site tonnage: 5.1E-03 kg

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.4
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.05
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.05

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via on-site sewage treatment: 96,2%
 Removal efficiency (total): 96.2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 26 kg/day
 Assumed domestic sewage treatment plant flow (m³/day):
 2000

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

Air Treat air emission to provide the required removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%) : ≥ 0.0 . If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%) : ≥ 0.0 . Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Lubricants - Professional

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Lubricants - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems)

No other specific measures identified.

Operation of equipment containing engine oils and similar

No other specific measures identified.

General exposures (open systems)

No other specific measures identified.

Bulk transfers

No other specific measures identified.

Filling/preparation of equipment from drums or containers.

Dedicated facility

No other specific measures identified.

Filling/preparation of equipment from drums or containers.

Non-dedicated facility

No other specific measures identified.

Operation and lubrication of high energy open equipment

Indoor/outdoor use.

No other specific measures identified.

Maintenance (of larger plant items) and machine set up

No other specific measures identified.

Maintenance (of larger plant items) and machine set up

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Maintenance of small items

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Engine lubricant service

No other specific measures identified.

Manual

Application

Rolling, brushing

No other specific measures identified.

Spraying

No other specific measures identified.

Lubricants - Professional

Treatment by dipping and pouring
Allow time for product to drain from workpiece.

Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario Lubricants - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES06c

1. Title of exposure scenario

Main title	Lubricants - Consumer
Process scope	Covers the consumer use of formulated lubricants in closed and open systems, including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.
Product category	PC1 Adhesives, sealants. PC24 Lubricants, greases and release products. PC31 Polishes and wax blends.
Main sector	SU21 Consumer uses
Environment	
Environmental release category	Low environmental release: ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor) High environmental release: ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 9.6d.v1
Non-industrial	
Product sub-category	PC1_1 Glues, hobby use PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) PC1_3 Glue from spray PC1_4 Sealants PC24_1 Liquids PC24_2 Pastes PC24_3 Sprays PC31_1 Polishes, wax/cream (floor, furniture, shoes) PC31_2 Polishes, spray (furniture, shoes)

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

Low environmental release: ERC 9a, 9b

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Lubricants - Consumer

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 3.8 tonnes/year
 Fraction of Regional tonnage used locally: 5.0E-04
 Annual site tonnage: 1.9E-03 tonnes
 Maximum daily site tonnage: 5.1E-03 kg/day

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.01

Environmental factors not influenced by risk management measures

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

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 27 kg/day
 Assumed domestic sewage treatment plant flow (m³/day):
 2000

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Non-industrial - Environment 2)

Control of environmental exposure (Non-industrial)

High environmental release: ERC 8a, 8d

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 3.8 tonnes/year
 Fraction of Regional tonnage used locally: 5.0E-04
 Annual site tonnage: 1.9E-03 tonnes
 Maximum daily site tonnage: 5.1E-03 kg/day

Frequency and duration of use

Continuous release.
 Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Lubricants - Consumer

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.4
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.05
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.05

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Maximum allowable site tonnage (M _{safe}), based on release following total wastewater treatment removal: 26 kg/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000
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Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Liquid, vapour pressure > 10 Pa (STP)
Concentration details	PC1_1 Glues, hobby use PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) PC1_3 Glue from spray PC1_4 Sealants : Covers concentrations up to 30 %. PC24_1 Liquids : Covers concentrations up to 100 %. PC24_2 Pastes : Concentration of substance in product: 20% PC24_3 Sprays PC31_1 Polishes, wax/cream (floor, furniture, shoes) PC31_2 Polishes, spray (furniture, shoes) : Covers concentrations up to 50 %. PC1_1 Glues, hobby use : Avoid using at a product concentration greater than 3%. PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) : Avoid using at a product concentration greater than 3.3%. PC1_3 Glue from spray : Avoid using at a product concentration greater than 11%. PC1_4 Sealants : Avoid using at a product concentration greater than 2.5%. PC31_1 Polishes, wax/cream (floor, furniture, shoes) : Avoid using at a product concentration greater than 2.4%.

Amounts used

Lubricants - Consumer

PC1_1 Glues, hobby use

For each use event, covers use amounts up to 9 g.

For each use event, avoid using a product amount of greater than 5 g.

PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)

For each use event, covers use amounts up to 6390 g.

PC1_3 Glue from spray

For each use event, covers use amounts up to 85.05 g.

PC1_4 Sealants

For each use event, covers use amounts up to 75 g.

For each use event, avoid using a product amount of greater than 25 g.

PC24_1 Liquids

For each use event, covers use amounts up to 2200 g.

PC24_2 Pastes

For each use event, covers use amounts up to 34 g.

PC24_3 Sprays

For each use event, covers use amounts up to 73 g.

PC31_1 Polishes, wax/cream (floor, furniture, shoes)

For each use event, covers use amounts up to 142 g.

PC31_2 Polishes, spray (furniture, shoes)

For each use event, covers use amounts up to 35 g.

Frequency and duration of use

Covers use up to 1 time(s)/day.

Unless otherwise stated.

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PC1_1 Glues, hobby use

Covers use up to 365 days/year.

Covers exposure up to 4.00 hours per event.

PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Covers use up to 1 days/year.

Covers exposure up to 6.00 hours per event.

PC1_3 Glue from spray

Covers use up to 6 days/year.

Covers exposure up to 4.00 hours per event.

PC1_4 Sealants

Covers use up to 365 days/year.

Covers exposure up to 1.00 hours per event.

PC24_1 Liquids

Covers use up to 4 days/year.

Covers exposure up to 0.17 hours per event.

PC24_2 Pastes

Covers use up to 10 days/year.

Covers exposure up to 4.00 hours per event.

PC24_3 Sprays

Covers use up to 6 days/year.

Covers exposure up to 0.17 hours per event.

PC31_1 Polishes, wax/cream (floor, furniture, shoes)

Covers use up to 29 days/year.

Covers exposure up to 1.23 hours per event.

PC31_2 Polishes, spray (furniture, shoes)

Covers use up to 8 days/year.

Covers exposure up to 0.33 hours per event.

Human factors not influenced by risk management

Lubricants - Consumer

Potentially exposed body parts PC1_1 Glues, hobby use . PC1_3 Glue from spray . PC1_4 Sealants : Covers skin contact area up to 35.73 cm². PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) : Covers skin contact area up to 110.00 cm². PC24_1 Liquids . PC24_2 Pastes : Covers skin contact area up to 468.00 cm². PC24_3 Sprays : Covers skin contact area up to 428.75 cm². PC31_1 Polishes, wax/cream (floor, furniture, shoes) . PC31_2 Polishes, spray (furniture, shoes) : Covers skin contact area up to 430.00 cm².

Other given operational conditions affecting Non-industrial exposure

Setting PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) . PC1_4 Sealants : Avoid using when windows closed.

Temperature Assumes activities are at ambient temperature (unless stated differently).

Room size PC1_1 Glues, hobby use . PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) . PC1_3 Glue from spray . PC1_4 Sealants . PC24_3 Sprays . PC31_1 Polishes, wax/cream (floor, furniture, shoes) . PC31_2 Polishes, spray (furniture, shoes) : Covers use in room size of 20 m³. PC24_1 Liquids : Covers use in room size of 34 m³.

Ventilation rate Covers use under typical household ventilation. Unless otherwise stated. PC24_1 Liquids : Covers use in a one car garage (34 m³) under typical ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Metal Working Fluids/Rolling Oils - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES07a

1. Title of exposure scenario

Main title	Use in Metal Working Fluids/Rolling Oils - Industrial
Process scope	Covers the use in formulated MWFs/rolling oils, including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.7a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC7 Industrial spraying</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC17 Lubrication at high energy conditions in metal working operations</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Use in Metal Working Fluids/Rolling Oils - Industrial

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 10 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 10 tonnes
 Maximum daily site tonnage: 500 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 2.0E-02
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-05
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 1400 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 70%.
Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Use in Metal Working Fluids/Rolling Oils - Industrial

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use in Metal Working Fluids/Rolling Oils - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

General exposures (closed systems)

No other specific measures identified.

General exposures (open systems)

No other specific measures identified.

Bulk transfers

No other specific measures identified.

Filling/preparation of equipment from drums or containers.

No other specific measures identified.

Process sampling

No other specific measures identified.

Metal machining operations

No other specific measures identified.

Treatment by dipping and pouring

No other specific measures identified.

Spraying

No other specific measures identified.

Manual

Application

Rolling, brushing

No other specific measures identified.

Automated metal rolling/forming

Use in contained systems

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Semi-automated metal rolling/forming

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Semi-automated metal rolling/forming

No other specific measures identified.

Equipment cleaning and maintenance

Dedicated facility

No other specific measures identified.

Equipment cleaning and maintenance

Use in Metal Working Fluids/Rolling Oils - Industrial

Non-dedicated facility
No other specific measures identified.

Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as a Blowing Agent - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES09a

1. Title of exposure scenario

Main title	Use as a Blowing Agent - Industrial
Process scope	Use as a blowing agent for rigid and flexible foams, including material transfers, mixing and injection, curing, cutting, storage and packing
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.9.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC12 Use of blow agents in manufacture of foam.</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 40 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 40 tonnes
 Maximum daily site tonnage: 2000 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

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

Use as a Blowing Agent - Industrial

Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-05

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

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 1400 tonne/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of 0%.

Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use as a Blowing Agent - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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Bulk transfers

No other specific measures identified.

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Mixing operations

(closed systems)

No other specific measures identified.

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Extrusion and expansion of polymer mass

No other specific measures identified.

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Cutting and shaving

No other specific measures identified.

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Collection and re-processing of shavings, cuttings, etc.

No other specific measures identified.

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Product packaging

No other specific measures identified.

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Storage

No other specific measures identified.

.

Mixing operations

(closed systems)

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

.

Intermediate polymer storage

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

.

Centrifuging, including discharging

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

.

Drying and storage

No other specific measures identified.

.

Semi-bulk packaging

No other specific measures identified.

.

Treatment by heating

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

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Article formation in mould

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

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Use as a Blowing Agent - Industrial

Cutting by heated wire

Manual

No other specific measures identified.

.

Drum and small package filling

Filling/preparation of equipment from drums or containers.

No other specific measures identified.

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Foaming

No other specific measures identified.

.

Compression

No other specific measures identified.

.

Cutting by heated wire

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as Release Agents or Binders - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES10a

1. Title of exposure scenario

Main title	Use as Release Agents or Binders - Industrial
Process scope	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.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.10a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC6 Calendering operations.</p> <p>PROC7 Industrial spraying</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC10 Roller application or brushing</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 14 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 14 tonnes
 Maximum daily site tonnage: 710 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Use as Release Agents or Binders - Industrial

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 1.0
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 3.0E-06
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Removal efficiency (total): 96,2% Maximum allowable site tonnage (M _{safe}), based on release following total wastewater treatment removal: 3000 tonne/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000

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

Air	Treat air emission to provide a typical removal efficiency of 80%.
Water	Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

Use as Release Agents or Binders - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Material transfers

Transfer via enclosed lines.

Drum/batch transfers

No other specific measures identified.

Mixing operations

(closed systems)

No other specific measures identified.

Mixing operations

(open systems)

No other specific measures identified.

Mould forming

No other specific measures identified.

Casting operations

(open systems)

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

Aerosol generation due to elevated process temperature

No other specific measures identified.

Spraying

Machine

No other specific measures identified.

Manual

Application

Rolling, brushing

No other specific measures identified.

Manual spraying

No other specific measures identified.

Storage

Store substance within a closed system.

Dipping, immersion and pouring

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Use as Release Agents or Binders - Industrial

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as Release Agents or Binders - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES10b

1. Title of exposure scenario

Main title	Use as Release Agents or Binders - Professional
Process scope	Covers the use as binders and release agents, including material transfers, mixing, application by spraying, brushing and handling of waste.
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.10b.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC6 Calendering operations. PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC14 Tableting, compression, extrusion, pelletisation, granulation

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 7.0 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 3.5E-03 tonnes
Maximum daily site tonnage: 9.6E-03 kg

Frequency and duration of use

Use as Release Agents or Binders - Professional

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

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

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 49 kg/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0 . If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Use as Release Agents or Binders - Professional

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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Material transfers

(closed systems)

No other specific measures identified.

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Drum/batch transfers

No other specific measures identified.

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Mixing operations

(closed systems)

No other specific measures identified.

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Mixing operations

(open systems)

No other specific measures identified.

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Mould forming

No other specific measures identified.

.

Casting operations

(open systems)

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

Aerosol generation due to elevated process temperature

No other specific measures identified.

.

Spraying

Machine

No other specific measures identified.

.

Manual

Application

Rolling, brushing

No other specific measures identified.

.

Manual spraying

No other specific measures identified.

.

Storage

No other specific measures identified.

.

Drum/batch transfers

Non-dedicated facility

No other specific measures identified.

Use as Release Agents or Binders - Professional

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Agrochemicals - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES11a

1. Title of exposure scenario

Main title	Use in Agrochemicals - Professional
Process scope	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging, including equipment clean-downs and disposal.
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.11a.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 70 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 0.14 tonnes
Maximum daily site tonnage: 0.38 kg

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Use in Agrochemicals - Professional

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.9
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.09

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Removal efficiency (total): 96,2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 1400 kg/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000

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

Air	Treat air emission to provide a typical removal efficiency of N/A%.
Water	Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

Use in Agrochemicals - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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Transfer from/pouring from containers
No other specific measures identified.

.
Mixing operations
No other specific measures identified.

.
Spraying/fogging by manual application
No other specific measures identified.

.
Spraying/fogging by machine application
No other specific measures identified.

.
Ad hoc manual application via trigger sprays, dipping, etc.
No other specific measures identified.

.
Equipment cleaning and maintenance
No other specific measures identified.

.
Storage
No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

Use in Agrochemicals - Professional

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

Exposure scenario

Use in Agrochemicals - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES11b

1. Title of exposure scenario

Main title	Use in Agrochemicals - Consumer
Process scope	Covers the consumer use in agrochemicals in liquid and solid forms.
Product category	PC12 Lawn and garden preparations (- fertilizers). PC27 Plant protection products.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.11b.v1
<u>Non-industrial</u>	
Product sub-category	PC12_1 Lawn and garden preparations

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 13 tonnes/year
Fraction of Regional tonnage used locally: 5.0E-04
Annual site tonnage: 2.7E-02 tonnes
Maximum daily site tonnage: 7.3E-02 kg/day

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.9
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.09

Environmental factors not influenced by risk management measures

Use in Agrochemicals - Consumer

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

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 350 kg/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Liquid, vapour pressure > 10 Pa (STP)

Concentration details Covers concentrations up to 50 %. Unless otherwise stated.

PC12_1 Lawn and garden preparations . PC27 Plant protection products. : Avoid using at a product concentration greater than 0.3%.

Amounts used

PC12_1 Lawn and garden preparations
For each use event, covers use amounts up to 0.3 g.

PC27 Plant protection products.
For each use event, covers use amounts up to 0.3 g.

Frequency and duration of use

Covers use up to 365 days/year.
Covers use up to 1 time(s)/day.
Covers exposure up to 4.00 hours per event.
Unless otherwise stated.

Human factors not influenced by risk management

Potentially exposed body parts Covers skin contact area up to 857.50 cm².

Other given operational conditions affecting Non-industrial exposure

Temperature Assumes activities are at ambient temperature (unless stated differently).

Room size Covers use in room size of 20 m³.

Ventilation rate Covers use under typical household ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

Use in Agrochemicals - Consumer

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as a Fuel - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES12a

1. Title of exposure scenario

Main title	Use as a Fuel - Industrial
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 7.12a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC16 Use of fuels</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 10 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 10 tonnes
 Maximum daily site tonnage: 500 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 5.0E-02

Use as a Fuel - Industrial

Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 1.0E-05

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

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 1700 tonne/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of 95%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery method This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use as a Fuel - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

.
Bulk transfers
Dedicated facility
No other specific measures identified.

.
Drum/batch transfers
No other specific measures identified.

.
General exposures (closed systems)
Handle substance within a closed system.

.
Use as a fuel
Handle substance within a closed system.

.
Equipment cleaning and maintenance
No other specific measures identified.

.
Storage
Store substance within a closed system.
Transfer via enclosed lines.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as a Fuel - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES12b

1. Title of exposure scenario

Main title	Use as a Fuel - Professional
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.12b.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 7.5 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 3.8E-03 tonnes
Maximum daily site tonnage: 0.01 kg

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 1.0E-02

Use as a Fuel - Professional

Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 1.0E-05

Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-05

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 53 kg/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery method This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use as a Fuel - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers

Handle substance within a closed system.
Clear transfer lines prior to de-coupling.

Drum/batch transfers

No other specific measures identified.

Refuelling

No other specific measures identified.

General exposures (closed systems)

Handle substance within a closed system.

Use as a fuel

Handle substance within a closed system.

Equipment cleaning and maintenance

No other specific measures identified.

Storage

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as a Fuel - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES12c

1. Title of exposure scenario

Main title	Use as a Fuel - Consumer
Process scope	Covers consumer uses in liquid fuels.
Product category	PC13 Fuels.
Main sector	SU21 Consumer uses
Environment	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.12c.v1
Non-industrial	
Product sub-category	PC13_1 Liquid: automotive refuelling PC13_2 Liquid: scooter refuelling PC13_3 Liquid: garden equipment - use PC13_4 Liquid: Garden equipment - Refuelling PC13_5 Liquid: lamp oil PC13_6 Liquid: home space heater fuel

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 7.5 tonnes/year
Fraction of Regional tonnage used locally: 5.0E-04
Annual site tonnage: 3.8E-03 tonnes
Maximum daily site tonnage: 0.01 kg/day

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 1.0E-02
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 1.0E-05
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 1.0E-05

Environmental factors not influenced by risk management measures

Use as a Fuel - Consumer

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

Risk management measures

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 53 kg/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

Conditions and measures related to external treatment of waste for disposal

Waste treatment Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.

Conditions and measures related to external recovery of waste

Recovery method This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Liquid, vapour pressure > 10 Pa (STP)

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers use up to 1 time(s)/day.
Unless otherwise stated.

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PC13_1 Liquid: automotive refuelling
Covers use up to 52 days/year.
Covers exposure up to 0.05 hours per event.

PC13_2 Liquid: scooter refuelling
Covers use up to 52 days/year.
Covers exposure up to 0.03 hours per event.

PC13_3 Liquid: garden equipment - use
Covers use up to 26 days/year.
Covers exposure up to 2.00 hours per event.

PC13_4 Liquid: Garden equipment - Refuelling
Covers use up to 26 days/year.
Covers exposure up to 0.03 hours per event.

PC13_5 Liquid: lamp oil
Covers use up to 52 days/year.
Covers exposure up to 0.01 hours per event.

PC13_6 Liquid: home space heater fuel
Covers use up to 365 days/year.
Covers exposure up to 0.03 hours per event.

Human factors not influenced by risk management

Potentially exposed body parts PC13_1 Liquid: automotive refuelling . PC13_2 Liquid: scooter refuelling . PC13_5 Liquid: lamp oil . PC13_6 Liquid: home space heater fuel : Covers skin contact area up to 210.00 cm². PC13_4 Liquid: Garden equipment - Refuelling : Covers skin contact area up to 420.00 cm².

Other given operational conditions affecting Non-industrial exposure

Use as a Fuel - Consumer

Setting	PC13_1 Liquid: automotive refuelling . PC13_2 Liquid: scooter refuelling . PC13_3 Liquid: garden equipment - use : Covers outdoor use.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PC13_1 Liquid: automotive refuelling . PC13_2 Liquid: scooter refuelling . PC13_3 Liquid: garden equipment - use : Covers use in room size of 100 m ³ . PC13_4 Liquid: Garden equipment - Refuelling : Covers use in room size of 34 m ³ . PC13_5 Liquid: lamp oil . PC13_6 Liquid: home space heater fuel : Covers use in room size of 20 m ³ .
Ventilation rate	PC13_4 Liquid: Garden equipment - Refuelling : Covers use in a one car garage (34 m ³) under typical ventilation. PC13_5 Liquid: lamp oil . PC13_6 Liquid: home space heater fuel : Covers use under typical household ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as Functional Fluids - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES13a

1. Title of exposure scenario

Main title	Use as Functional Fluids - Industrial
Process scope	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment, including maintenance and related material transfers.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 7.13a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 110 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 10 tonnes
 Maximum daily site tonnage: 500 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.01

Use as Functional Fluids - Industrial

Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-05

Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.001

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 1400 tonne/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of 0%.

Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use as Functional Fluids - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers

(closed systems)

No other specific measures identified.

Drum/batch transfers

No other specific measures identified.

Filling of articles/equipment

(closed systems)

No other specific measures identified.

Filling/preparation of equipment from drums or containers.

No other specific measures identified.

General exposures (closed systems)

No other specific measures identified.

General exposures (open systems)

No other specific measures identified.

General exposures (open systems)

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Remanufacture of reject articles

No other specific measures identified.

Equipment cleaning and maintenance

No other specific measures identified.

Storage

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Use as Functional Fluids - Industrial

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as Functional Fluids - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES13b

1. Title of exposure scenario

Main title	Use as Functional Fluids - Professional
Process scope	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment, including maintenance and related material transfers.
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.13b.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC20 Use of functional fluids in small devices

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 10 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 5.1E-03 tonnes
Maximum daily site tonnage: 1.4E-02 kg

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Use as Functional Fluids - Professional

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.05
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.025
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.025

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Removal efficiency (total): 96,2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 70 kg/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000

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

Air	Treat air emission to provide a typical removal efficiency of N/A%.
Water	Risk from environmental exposure is driven by fresh water. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

Use as Functional Fluids - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Drum/batch transfers

No other specific measures identified.

Transfer from/pouring from containers

No other specific measures identified.

Filling/preparation of equipment from drums or containers.

No other specific measures identified.

General exposures (closed systems)

Handle substance within a closed system.

General exposures (closed systems)

No other specific measures identified.

Operation of equipment containing engine oils and similar

No other specific measures identified.

Operation of equipment containing engine oils and similar

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Remanufacture of reject articles

No other specific measures identified.

Equipment maintenance

No other specific measures identified.

Storage

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Use as Functional Fluids - Professional

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use as Functional Fluids - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES13c

1. Title of exposure scenario

Main title	Use as Functional Fluids - Consumer
Process scope	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.
Product category	PC16 Heat transfer fluids. PC17 Hydraulic fluids.
Main sector	SU21 Consumer uses
Environment	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.13c.v1

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 10 tonnes/year
Fraction of Regional tonnage used locally: 5.0E-04
Annual site tonnage: 5.0E-03 tonnes
Maximum daily site tonnage: 1.4E-02 kg/day

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.05
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.025
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.025

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Use as Functional Fluids - Consumer

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 69 kg/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000
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Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Liquid, vapour pressure > 10 Pa (STP)
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Amounts used

For each use event, covers use amounts up to 2200 g.
Unless otherwise stated.

Frequency and duration of use

Covers use up to 4 days/year.
Covers use up to 1 time(s)/day.
Covers exposure up to 0.17 hours per event.
Unless otherwise stated.

Human factors not influenced by risk management

Potentially exposed body parts	Covers skin contact area up to 468.00 cm ² .
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Other given operational conditions affecting Non-industrial exposure

Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	Covers use in room size of 34 m ³ .
Ventilation rate	Covers use in a one car garage (34 m ³) under typical ventilation.

Other given operational conditions affecting Non-industrial exposure

No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Environment 1)

Assessment method	Used Petrorisk model. (Hydrocarbon Block Method)
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4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Use as Functional Fluids - Consumer

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Road and Construction Applications - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES15b

1. Title of exposure scenario

Main title	Use in Road and Construction Applications - Professional
Process scope	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.
Main sector	SU22 Professional uses
Environment	
Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
SPERC	ESVOC SPERC 8.15.v1
Worker	
Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 4.5 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 2.3E-03 tonnes
Maximum daily site tonnage: 6.2E-03 kg

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.95
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.01

Use in Road and Construction Applications - Professional

Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 0.04

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.

STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
Removal efficiency (total): 96,2%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 32 kg/day
Assumed domestic sewage treatment plant flow (m³/day):
2000

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

Air Treat air emission to provide a typical removal efficiency of N/A%.

Water Risk from environmental exposure is driven by fresh water. No wastewater treatment required.
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0 . If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.

Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Vapour pressure Vapour pressure < 0.5 kPa at STP.

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use in Road and Construction Applications - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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Drum/batch transfers

Non-dedicated facility

No other specific measures identified.

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Drum/batch transfers

Dedicated facility

No other specific measures identified.

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Drum/batch transfers

Dedicated facility

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

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Manual

Application

Brush or roller

No other specific measures identified.

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Spraying/fogging by machine application

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

Ensure operation is undertaken outdoors.

Limit the substance content in the mixture to 50%.

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Spraying/fogging by machine application

No other specific measures identified.

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Dipping, immersion and pouring

No other specific measures identified.

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Equipment cleaning and maintenance

No other specific measures identified.

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Drum and small package filling

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

Use in Road and Construction Applications - Professional

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Other Consumer Uses - Consumer

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES16c

1. Title of exposure scenario

Main title	Other Consumer Uses - Consumer
Process scope	Consumer uses e.g. 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.
Product category	PC28 Perfumes, fragrances. PC39 Cosmetics, personal care.
Main sector	SU21 Consumer uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC	ESVOC SPERC 8.16.v1

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 5.0 tonnes/year
Fraction of Regional tonnage used locally: 5.0E-04
Annual site tonnage: 2.5E-03 tonnes
Maximum daily site tonnage: 6.8E-03 kg

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

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

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Other Consumer Uses - Consumer

Risk management measures

STP details

Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 35 kg/day
 Assumed domestic sewage treatment plant flow (m³/day):
 2000

Conditions and measures related to external treatment of waste for disposal

Waste treatment

External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method

External recovery and recycling of waste should comply with applicable local and/or national regulations.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method

Not applicable.

4. Guidance to check compliance with the exposure scenario (Health 1)

Not applicable.

Exposure scenario

Use in Laboratories - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES17a

1. Title of exposure scenario

Main title	Use in Laboratories - Industrial
Process scope	Use of the substance within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC2 Formulation into mixture ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Worker	
Process category	PROC10 Roller application or brushing PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 0.8 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 0.8 tonnes
Maximum daily site tonnage: 40 kg

Frequency and duration of use

Continuous release.
Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.025
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.02
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 1.0E-04

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used.
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Use in Laboratories - Industrial

STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Removal efficiency (total): 96,2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 2200 kg/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000
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Technical onsite conditions and measures to reduce or limit discharges to air, water and soil

Air	Treat air emission to provide a typical removal efficiency of 0%.
Water	Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

General measures (skin irritants)
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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Laboratory activities
No other specific measures identified.

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Cleaning
No other specific measures identified.

Use in Laboratories - Industrial

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination.

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Laboratories - Professional

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES17b

1. Title of exposure scenario

Main title	Use in Laboratories - Professional
Process scope	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.
Main sector	SU22 Professional uses
<u>Environment</u>	
Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
SPERC	ESVOC SPERC 8.17.v1
<u>Worker</u>	
Process category	PROC10 Roller application or brushing PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

Use in Laboratories - Professional

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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Laboratory activities

No other specific measures identified.

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Cleaning

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Rubber Production and Processing - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES19a

1. Title of exposure scenario

Main title	Rubber Production and Processing - Industrial
Process scope	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC1 Manufacture of the substance ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
SPERC	ESVOC SPERC 4.19.v1
Worker	
Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC6 Calendering operations. PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent. PROC21 Low energy manipulation and handling of substances bound in/on materials or articles

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Rubber Production and Processing - Industrial

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 5.0 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 5.0 tonnes
 Maximum daily site tonnage: 250 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.01
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 3.0E-04
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-04

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2%
 Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 140 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 0%.
Water Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0 If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.

Rubber Production and Processing - Industrial

Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting Assumes a good basic standard of occupational hygiene is implemented.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Rubber Production and Processing - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Material transfers

(closed systems)

No other specific measures identified.

Material transfers

No other specific measures identified.

Bulk weighing

No other specific measures identified.

Small scale weighing

No other specific measures identified.

Additive premixing

No other specific measures identified.

Calendering (including Banburys)

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Pressing uncured rubber blanks

No other specific measures identified.

Tyre build up

No other specific measures identified.

Vulcanisation

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Vulcanisation

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

Manual

No other specific measures identified.

Cooling cured articles

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

Production of articles by dipping and pouring

No other specific measures identified.

Finishing operations

No other specific measures identified.

Laboratory activities

Rubber Production and Processing - Industrial

No other specific measures identified.

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Equipment maintenance

No other specific measures identified.

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Storage

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Polymer Processing - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES21a

1. Title of exposure scenario

Main title	Use in Polymer Processing - Industrial
Process scope	Processing of formulated polymers, including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers etc.), moulding, curing and forming activities, material reworks, storage and associated maintenance.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.21a.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC6 Calendering operations.</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p> <p>PROC13 Treatment of articles by dipping and pouring.</p> <p>PROC14 Tableting, compression, extrusion, pelletisation, granulation</p> <p>PROC21 Low energy manipulation and handling of substances bound in/on materials or articles</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Use in Polymer Processing - Industrial

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 260 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 260 tonnes
 Maximum daily site tonnage: 13 tonnes

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.5
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0
Emission factor - soil Release fraction to soil from process (initial release prior to RMM): 1.0E-05

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96,2%
 Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 14,000 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide a typical removal efficiency of 80%.
Water No wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0.0 If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 0,0 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Risk from environmental exposure is driven by soil. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid
Vapour pressure Vapour pressure 0.5 - 10 kPa at STP.
Concentration details Covers percentage substance in the product up to 100% (unless stated differently).

Use in Polymer Processing - Industrial

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

Setting

Assumes a good basic standard of occupational hygiene is implemented.

Temperature

Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Risk management measures

Use in Polymer Processing - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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Bulk transfers (closed systems)

No other specific measures identified.

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Bulk transfers

No other specific measures identified.

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Bulk weighing

No other specific measures identified.

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Bulk weighing

Handle substance within a closed system.

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Small scale weighing

No other specific measures identified.

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Additive premixing

No other specific measures identified.

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Additive premixing

Mixing operations

(open systems)

No other specific measures identified.

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Bulk transfers

No other specific measures identified.

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Calendering (including Banburys)

Operation is carried out at elevated temperature (> 20°C above ambient temperature).

No other specific measures identified.

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Production of articles by dipping and pouring

No other specific measures identified.

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Extrusion and masterbatching

No other specific measures identified.

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Injection moulding of articles

No other specific measures identified.

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Finishing operations

No other specific measures identified.

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Equipment maintenance

No other specific measures identified.

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Storage

Store substance within a closed system.

Use in Polymer Processing - Industrial

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Use in Mining Operations - Industrial

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES23a

1. Title of exposure scenario

Main title	Use in Mining Operations - Industrial
Process scope	Covers the use of the substance in extraction processes at mining operations, including material transfers, winning and separation activities and substance recovery and disposal.
Main sector	SU3 Industrial uses
Environment	
Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
SPERC	ESVOC SPERC 4.23.v1
Worker	
Process category	<p>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</p> <p>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4 Chemical production where opportunity for exposure arises</p> <p>PROC5 Mixing or blending in batch processes</p> <p>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</p> <p>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</p> <p>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</p>

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 40 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 40 tonnes
 Maximum daily site tonnage: 2000 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Use in Mining Operations - Industrial

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.25
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.50
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.05

Environmental factors not influenced by risk management measures

Dilution	Local freshwater dilution factor: 10 Local marine water dilution factor: 100
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Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 96.2% Removal efficiency (total): 99,8% Maximum allowable site tonnage (M _{safe}), based on release following total wastewater treatment removal: 2000 kg/day Assumed domestic sewage treatment plant flow (m ³ /day): 2000

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

Air	Treat air emission to provide a typical removal efficiency of 80%.
Water	Risk from environmental exposure is driven by freshwater sediment. Onsite wastewater treatment required. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 99.8. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%): 95,6 Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

Use in Mining Operations - Industrial

General measures (skin irritants)

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers

No other specific measures identified.

Drum/batch transfers

No other specific measures identified.

Pouring from small containers

No other specific measures identified.

General exposures (closed systems)

No other specific measures identified.

General exposures (open systems)

No other specific measures identified.

Phase separation

(closed systems)

No other specific measures identified.

Ion exchange processes

(closed systems)

No other specific measures identified.

Process sampling

No other specific measures identified.

Mixing operations

(closed systems)

No other specific measures identified.

Equipment cleaning and maintenance

No other specific measures identified.

Storage

No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)

4. Guidance to check compliance with the exposure scenario (Environment 1)

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

Use in Mining Operations - Industrial

3. Exposure estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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

Exposure scenario

Aineen jakelu - Teollinen käyttö

Identification

Product name	Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
REACH registration number	01-2119475515-33-0007
Version number	2012
Es reference	ES01a

1. Title of exposure scenario

Main title	Aineen jakelu - Teollinen käyttö
Process scope	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.
Main sector	SU3 Industrial uses
Sector of use	SU8 Manufacture of bulk, large-scale chemicals (including petroleum products) SU9 Manufacture of fine chemicals

Environment

Environmental release category	ERC1 Manufacture of the substance ERC2 Formulation into mixture ERC3 Formulation into solid matrix ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC5 Use at industrial site leading to inclusion into/onto article ERC6a Use of intermediate ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article) ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 1.1b.v1 (with modifications)

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Aineen jakelu - Teollinen käyttö

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
 Regional use tonnage: 490 tonnes/year
 Fraction of Regional tonnage used locally: 1
 Annual site tonnage: 0.99 tonnes
 Maximum daily site tonnage: 49 kg

Frequency and duration of use

Continuous release.
 Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from process (initial release prior to RMM): 0.001
Emission factor - water Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Emission factor - soil Release fraction to soil from process (regional): 0.00001

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice Common practices vary across sites, thus conservative process release estimates used.
Technical measures Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent environmental discharge consistent with regulatory requirements. Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases.
STP details Estimated substance removal from wastewater via domestic sewage treatment: 96.2%
 Removal efficiency (total): 96.2%
 Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 240 tonne/day
 Assumed domestic sewage treatment plant flow (m³/day): 2000

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

Air Treat air emission to provide the required removal efficiency of 90%.
Water Risk from environmental exposure is driven by fresh water. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 0%. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method External recovery and recycling of waste should comply with applicable local and/or national regulations.

Aineen jakelu - Teollinen käyttö

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	Vapour pressure 0.5 - 10 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

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

Risk management measures

General measures (skin irritants)
 Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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General exposures (closed systems)
 No other specific measures identified.

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General exposures (open systems)
 No other specific measures identified.

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Process sampling
 No other specific measures identified.

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Laboratory activities
 No other specific measures identified.

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Bulk transfers
 No other specific measures identified.

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Drum and small package filling
 No other specific measures identified.

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Equipment cleaning and maintenance
 No other specific measures identified.

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Storage
 No other specific measures identified.

3. Exposure estimation (Environment 1)

Assessment method	Used Petrorisk model. (Hydrocarbon Block Method)
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4. Guidance to check compliance with the exposure scenario (Environment 1)

Aineen jakelu - Teollinen käyttö

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. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>).

3. Exposure estimation (Health 1)

Assessment method

Used ECETOC TRA model.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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