SAFETY DATA SHEET
NESSOL D40

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

1.1. Product identifier

Product name
NESSOL D40

Chemical name
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

Product number
ID 10525

Internal Identification
135157, 137311.

Synonyms; trade names
Previous product name: NESSOL LIAV 200. Previous product number: 752011.

EU REACH registration number
01-2119463258-33-0003

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

Identified uses
- Manufacture of substance (ES01)
- Distribution of substance (ES01a)
- Formulation & (re)packing of substances and mixtures (ES02)
- Uses in coatings (ES03a) (ES03b) (ES03c)
- Use in cleaning agents (ES04a) (ES04b) (ES04c)
- Use in oil and gas field drilling and production operations (ES05b)
- Lubricants (ES06a) (ES06b) (ES06c)
- Metal working fluids/rolling oils (ES07a) (ES07b)
- Use as binders and release agents (ES10a) (ES10b)
- 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)
- Explosives manufacture & use (ES18b)
- Water treatment chemicals (ES21a) (ES21b) (ES21c)
- Mining chemicals (ES22a)
- Polymer processing (ES23a) (ES23b)

1.3. Details of the supplier of the safety data sheet

Supplier
Neste Oyj
Keilaranta 21, Espoo, P.O.B. 95, FIN-00095 NESTE, FINLAND
Tel. +358 10 45811
SDS@neste.com (chemical safety)

1.4. Emergency telephone number

Emergency telephone
+61 2 9186 1132, Chemwatch: International Emergency Response Phone Number

National emergency telephone number
+358 800 147 111, +358 9 471 977, Poison Information Centre

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720)

Physical hazards
Flam. Liq. 3 - H226

Health hazards
STOT SE 3 - H336 Asp. Tox. 1 - H304

Environmental hazards
Not Classified

2.2. Label elements
NESSOL D40

Hazard pictograms

Signal word
Danger

Hazard statements
H226 Flammable liquid and vapour.
H336 May cause drowsiness or dizziness.
H304 May be fatal if swallowed and enters airways.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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.
P102 Keep out of reach of children.

Supplemental label information
EUH066 Repeated exposure may cause skin dryness or cracking.

Contains
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

2.3. Other hazards
Vapours may accumulate on the floor and in low-lying areas. Vapours may form explosive mixtures with air. Evaporates slowly. Vapours may irritate throat/respiratory system. Risk of soil and ground water contamination.

This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, &lt;2% aromatics</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number</td>
<td>—</td>
</tr>
<tr>
<td>Classification</td>
<td>Flam. Liq. 3 - H226</td>
</tr>
<tr>
<td></td>
<td>STOT SE 3 - H336</td>
</tr>
<tr>
<td></td>
<td>Asp. Tox. 1 - H304</td>
</tr>
</tbody>
</table>

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

Product name
NESSOL D40

Chemical name
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

EU REACH registration number
01-2119463258-33-0003

Ingredient notes
Identity outside the EU (CAS number and name of the substance): 64742-48-9, Naphtha (petroleum), hydrotreated heavy Previous EC number: 265-150-3.

SECTION 4: First aid measures

4.1. Description of first aid measures
NESSOL D40

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.

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. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. Repeated exposure may cause skin dryness or cracking.

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
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
Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Avoid inhalation of vapours and contact with skin and eyes. Wear adequate protective equipment at all operations.

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.
NESSOL D40

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Immediately start clean-up of the liquid and contaminated soil. Contain spillage with sand, earth or other suitable non-combustible material. Large spills should be collected mechanically (remove by pumping) for disposal. Pay attention to the fire and health hazards caused by the product.

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. Use only 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

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 2020/FIN. The individual limit values can be applied for the hydrocarbons.

PNEC
Not available.

Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

DNEL
Workers - Inhalation; Long term systemic effects: 871 mg/m³
Workers - Dermal; Long term systemic effects: 208 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 185 mg/m³
Consumer - Dermal; Long term systemic effects: 125 mg/kg/day
Consumer - Oral; Long term systemic effects: 125 mg/kg/day

8.2. Exposure controls

Appropriate engineering controls
Provide adequate ventilation. Use personal protective equipment and/or local ventilation when needed. Handle in accordance with good industrial hygiene and safety practice.

Eye/face protection
Spectacles.
NESSOL D40

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 4 hours. Protection class 5. Protective gloves according to standard EN 374. Change protective gloves regularly.

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
Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Wear a respirator fitted with the following cartridge: Gas filter, type A2. Gas and combination filter cartridges suitable for intended use should be used. Filter must be changed often enough. At high concentrations a breathing apparatus must be used (self-contained or fresh air hose breathing apparatus).

Environmental exposure controls
Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Sample Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Mobile liquid.</td>
</tr>
<tr>
<td>Colour</td>
<td>Clear.</td>
</tr>
<tr>
<td>Odour</td>
<td>Hydrocarbons. Mild.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>-</td>
</tr>
<tr>
<td>pH</td>
<td>-</td>
</tr>
<tr>
<td>Melting point</td>
<td>(Melting/pour point) &lt; -15°C</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>150...200°C (EN ISO 3405)</td>
</tr>
<tr>
<td>Flash point</td>
<td>≥ 38°C (DIN 51755)</td>
</tr>
<tr>
<td>Upper/lower flammability or</td>
<td>Lower flammable/explosive limit: 0,6 % Estimated value. Upper flammable/explosive limit: 7 % Estimated value.</td>
</tr>
<tr>
<td>explosive limits</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>~ 0,3 kPa @ 20°C ~ 2,5 kPa @ 50°C</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 3 (Air = 1.0)</td>
</tr>
<tr>
<td>Relative density</td>
<td>0,74 - 0,85 @ 15°C</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>The product has poor water-solubility.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>log Kow: 2...7</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>~ 250°C Estimated value.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>-</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Kinematic viscosity &lt; 2 mm2/s @ 40°C (EN ISO 3104) Dynamic viscosity &lt; 50 mPa s @ &gt; -30°C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not considered to be explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Does not meet the criteria for classification as oxidising.</td>
</tr>
</tbody>
</table>

9.2. Other information

Other information
Surface tension 22-27 mN/m @ 25 °C

SECTION 10: Stability and reactivity
NESSOL D40

10.1. Reactivity
Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stability
Stable at normal ambient temperatures and when used as recommended.

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
Based on available data the classification criteria are not met. (OECD 404, HRIPT = Human Repeated Insult Patch Test) Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation
Based on available data the classification criteria are not met. (OECD 405).

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

Germ cell mutagenicity
Based on available data the classification criteria are not met. (OECD 471, 473, 476, 479).

Genotoxicity - in vitro
Based on available data the classification criteria are not met. (OECD 474, 478).

Carcinogenicity
Based on available data the classification criteria are not met. (OECD 453).

Reproductive toxicity
Reproductive toxicity - fertility
Based on available data the classification criteria are not met. (OECD 421, 422)

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. (OECD 408, 413, 422)

Aspiration hazard
NESSOL D40

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

General information
This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

Toxicological information on ingredients.
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

Acute toxicity - oral
Notes (oral LD₅₀) LD₅₀ > 5000 mg/kg, Oral, Rat (OECD 401, 423)

Acute toxicity - dermal
Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rabbit (OECD 402)

Acute toxicity - inhalation
Notes (inhalation LC₅₀) LC₅₀ > 4,95 mg/l, Inhalation, Rat (4h) Air. (OECD 403)

SECTION 12: Ecological information

12.1. Toxicity
Toxicity Based on available data the classification criteria are not met.

Ecological information on ingredients.
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics

Acute aquatic toxicity
Acute toxicity - fish LL₅₀, 96 hours: > 1000 mg/l,
LL₀, 96 hours: 100 mg/l,
(OECD 203)

Acute toxicity - aquatic invertebrates EL₅₀, 48 hours: > 1000 mg/l,
EL₀, 48 hours: 1000 mg/l,
(OECD 202)

Acute toxicity - aquatic plants EL₅₀, 72 hours: > 1000 mg/l, Algae
NOELR, 72 hours: 3 - 100 mg/l, Algae
(OECD 201)

Chronic aquatic toxicity
Chronic toxicity - fish early life stage NOELR, 28 days: 0,13 mg/l,
(QSAR)

Chronic toxicity - aquatic invertebrates NOELR, 21 days: 0,23 mg/l,
(QSAR)

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, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics
NESSOL D40

12.3. Bioaccumulative potential
Bioaccumulative potential No data available.
Partition coefficient log Kow: 2...7

12.4. Mobility in soil
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.
Endocrine-disrupting properties
This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

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. Product residues retained in emptied containers can be hazardous. Waste packaging should be collected for reuse or recycling.

SECTION 14: Transport information
14.1. UN number
UN No. (ADR/RID) 3295

14.2. UN proper shipping name
Proper shipping name (ADR/RID) UN 3295 HYDROCARBONS, LIQUID, N.O.S.

14.3. Transport hazard class(es)
ADR/RID class 3

14.4. Packing group
ADR/RID packing group III

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant No.

14.6. Special precautions for user
NESSOL D40

Hazard Identification Number 30
(ADR/RID)

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
Not applicable. MARPOL Annex I cargo.

SECTION 15: Regulatory information

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

National regulations
UK REACH registration number: UK-01-2791046891-0-0008.
Only Representative UK: Penman Consulting Limited 40, Aspect House, Waylands Avenue, Grove Business Park, Wantage, Oxon, OX12 9FF, United Kingdom; Telephone: 01367 718474, Email: pcltd40@penmanconsulting.com.
Location of manufacture: Neste Porvoo Refinery, Finland.

EU regulatory references for the safety data sheet:

Restrictions (SI 2020 No. 1577 Annex XVII)
Entry number: 3 (lamp oils and grill lighter fluids)

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories
Canada - DSL/NDSL
Yes
DSL

US - TSCA
Yes

Australia - AIIC
Yes

Korea - KECI
Yes

China - IECSC
Yes

Philippines – PICCS
Yes

New Zealand - NZIOC
Yes

Other
Mexico - INSQ
NESSOL D40

SECTION 16: Other information

| Revision comments | Updated, sections: 1.4, 2.3, 11, 12.6, 14.7. NOTE: Lines within the margin indicate significant changes from the previous revision. |
| Revision date | 01/01/2023 |
| Supersedes date | 09/06/2022 |
| SDS number | 5695 |
| Hazard statements in full | H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H336 May cause drowsiness or dizziness. |
Exposure scenario
Distribution of Substance - Industrial

1. Identification

**Product name**
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

**EU REACH registration number**
01-2119463258-33-0003

**Version number**
2021

**Es reference**
ES01a

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

**Main title**
Distribution of Substance - Industrial

**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.

**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

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

No exposure assessment presented for the environment.

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

No exposure assessment presented for the environment.
Distribution of Substance - Industrial

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

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

General exposures (open systems)
No other specific measures identified.

Process sampling
No other specific measures identified.

Laboratory activities
No other specific measures identified.

Bulk transfers (closed systems)
No other specific measures identified.

Bulk transfers (open systems)
No other specific measures identified.

Drum and small package filling
No other specific measures identified.

Equipment cleaning and maintenance
No other specific measures identified.

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

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)
Distribution of Substance - Industrial

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

<table>
<thead>
<tr>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>EU REACH registration number</strong></td>
</tr>
<tr>
<td><strong>Version number</strong></td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
</tr>
</tbody>
</table>

1. Title of exposure scenario

<table>
<thead>
<tr>
<th>Main title</th>
<th>Formulation &amp; (Re)packing of Substances and Mixtures - Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process scope</strong></td>
<td>Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Product characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amounts used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily amount per site: &lt;= 13.46 tonnes</td>
</tr>
<tr>
<td>Annual site tonnage: &lt;= 4040 tonnes</td>
</tr>
<tr>
<td>Fraction of EU tonnage used in region: 0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency and duration of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/95</td>
</tr>
</tbody>
</table>
Formulation & (Re)packing of Substances and Mixtures - Industrial

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.0005 %</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

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

Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

Frequency and duration of use

Covers daily exposure up to 8 hours

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Assumes a good basic standard of occupational hygiene is implemented.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

Risk management measures

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

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

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.

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.v2

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
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.
PROC14 Tabletting, compression, extrusion, pelletisation, granulation
PROC15 Use as laboratory reagent.

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

Amounts used
Daily amount per site: <= 18.66 tonnes
Annual site tonnage: <= 5600 tonnes
Fraction of EU tonnage used in region: 0.1

Frequency and duration of use
Emission days: 300 days/year
Uses in Coatings - Industrial

Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>9.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.002%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>5%</td>
</tr>
</tbody>
</table>

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

Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
<tr>
<td>Frequency and duration of use</td>
<td>Covers daily exposures up to 8 hours (unless stated differently).</td>
</tr>
</tbody>
</table>

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour Unless otherwise stated.</td>
</tr>
</tbody>
</table>

Risk management measures

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

PROC7 Industrial spraying

5 - 10 air changes per hour

Wear suitable gloves tested to EN374.

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, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

EU REACH registration number
01-2119463258-33-0003

Version number
2021

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.

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.v2

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)

Control of environmental exposure
No exposure assessment presented for the environment.

Amounts used
Daily amount per site: <=0.0063 tonnes
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure
Uses in Coatings - Professional

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>98%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>1%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>1%</td>
</tr>
</tbody>
</table>

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

#### Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

#### Frequency and duration of use

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

#### Setting

Indoor.

#### Temperature

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

#### Ventilation rate

≤ 3 air changes per hour Unless otherwise stated.

#### Risk management measures

- **PROC10** Roller application or brushing
  - 3-5
  - air changes per hour

- **PROC11** Non industrial spraying
  - Duration
  - 4 h/day
  - 5-10
  - air changes per hour
  - Wear suitable gloves tested to EN374.

- **PROC19** Manual activities involving hand contact
  - 3-5
  - air changes per hour
  - Wear suitable gloves tested to EN374.

### 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, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

EU REACH registration number
01-2119463258-33-0003

Version number
2021

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.
PC8 Biocidal products
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

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 8.3c.v2

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

Amounts used
Daily amount per site: <=1.2 kg
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure

Emission factor - air
98.5%

Emission factor - water
1%

Emission factor - soil
0.5%

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

Control of Non-industrial exposure
Uses in Coatings - Consumer

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: 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

Concentration details
PC1 Adhesives, sealants, 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 %.
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 %.

Amounts used
PC1_1 Glues, hobby use
For each use event, covers use amounts up to 9 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 80.05 g.
PC1_4 Sealants
For each use event, covers use amounts up to 75 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

21/95
Uses in Coatings - Consumer

Covers use up to 1 time(s)/day.
Covers use up to 365 days/year.
Unless otherwise stated.

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 exposure up to 6.00 hours per event.
Covers use up to 1 day(s)/year.
PC1_3 Glue from spray
Covers exposure up to 4.00 hours per event.
Covers use up to 6 days/year.
PC1_4 Sealants
Covers exposure up to 1.00 hours per event.
PC4_1 Washing car window
Covers exposure up to 0.017 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 exposure up to 0.33 hours per event.
Covers use up to 128 day(s)/year.
PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
Covers exposure up to 0.17 hours per event.
Covers use up to 128 day(s)/year.

Human factors not influenced by risk management

Potentially exposed body parts
PC1_1 Glues, hobby use , PC1_3 Glue from spray , PC1_4 Sealants : Fingertips Inhalation
PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue) : Both hands. Inhalation
PC4_1 Washing car window : Inhalation
PC4_2 Pouring into radiator : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation
PC4_3 Lock de-icer : Palm of one hand. Inhalation
PC8 Biocidal products : Inhalation

Other given operational conditions affecting Non-industrial exposure

Setting
Indoor. Unless otherwise stated.

PC4_3 Lock de-icer : Covers use in a one car garage (34 m³) under typical ventilation. PC4_2 Pouring into radiator , PC4_1 Washing car window : Outdoor.

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

Room size
PC4_3 Lock de-icer : Covers use in a one car garage (34 m³) under typical ventilation. PC4_2 Pouring into radiator , PC4_1 Washing car window : Outdoor.

Other given operational conditions affecting Non-industrial exposure
# Uses in Coatings - Consumer

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

<table>
<thead>
<tr>
<th>Product Characteristics</th>
<th>Physical state</th>
<th>Concentration details</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC9a Coatings and paints, thinners, paint removers: PC9a_1 Water-borne latex wall paint</td>
<td>Liquid</td>
<td>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 %. PC9a_3 Aerosol spray can: Covers concentrations up to 50 %. PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover): Covers concentrations up to 50 %. PC9b Fillers, putties, plasters, modelling clay: PC9b_1 Fillers and putty: Covers concentrations up to 2 %. PC9b_2 Plasters and floor equalisers: Covers concentrations up to 2 %. PC9b_3 Modelling clay: Covers concentrations up to 1 %. PC9c Finger paints: Covers concentrations up to 33 %.</td>
</tr>
</tbody>
</table>

### Amounts used

- **PC9a_1 Water-borne latex wall paint**
  - For each use event, covers use amounts up to 2 760 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 13 800 g.

- **PC9b_3 Modelling clay**
  - For each use event, covers use amounts up to 37 500 g.

- **PC9c Finger paints**
  - No specific recommendations.

### Frequency and duration of use

- No specific recommendations.
Uses in Coatings - Consumer

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

PC9a_1 Water-borne latex wall paint
Covers exposure up to 2,20 hours per event.
Covers use up to 4 day(s)/year.

PC9a_2 Solvent-rich, high-solid, water-borne paint
Covers exposure up to 2,20 hours per event.
Covers use up to 6 day(s)/year.

PC9a_3 Aerosol spray can.
Covers exposure up to 0,33 hours per event.
Covers use up to 2 day(s)/year.

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).
Covers exposure up to 2,00 hours per event.
Covers use up to 3 day(s)/year.

PC9b_1 Fillers and putty
Covers exposure up to 4,00 hours per event.
Covers use up to 12 day(s)/year.

PC9b_2 Plasters and floor equalisers
Covers exposure up to 2,00 hours per event.
Covers use up to 12 day(s)/year.

PC9b_3 Modelling clay
Covers exposure up to 8 hours per event.
Covers use up to 365 day(s)/year.

PC9c Finger paints.
Covers exposure up to 8 hours per event.
Covers use up to 365 day(s)/year.

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: Inhalation Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands.

PC9a_3 Aerosol spray can: Inhalation

PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover), PC9b_2 Plasters and floor equalisers: Both hands. Inhalation

PC9b_1 Fillers and putty: Inhalation Fingertips

PC9b_3 Modelling clay: Both hands. For each use event, assumes swallowed amount of (cm3): 1

PC9c Finger paints: Both hands. For each use event, assumes swallowed amount of (cm3): 1.35

PC9b_3 Modelling clay For each use event, assumes swallowed amount of (g): 1.0. PC9c Finger paints. For each use event, assumes swallowed amount of (g): 1.35.

Other given operational conditions affecting Non-industrial exposure

Setting
Indoor.

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

Other given operational conditions affecting Non-industrial exposure
No specific risk management measure identified beyond those operational conditions stated.
Uses in Coatings - Consumer

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

Control of Non-industrial exposure

PC15 Non-metal-surface treatment products. : 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) PC18 Ink and toners. PC23 Leather treatment products : PC23_1 Polishes, wax/cream (floor, furniture, shoes) PC23_2 Polishes, spray (furniture, shoes)

Product characteristics

Physical state

Liquid

Concentration details

PC15_1 Water-borne latex wall paint : Covers concentrations up to 1,5 %. PC15_2 Solvent rich, high solid, water-borne paint : Covers concentrations up to 27,5 %. PC15_3 Aerosol spray can , PC15_4 Removers (paint-, glue-, wall paper-, sealant remover) : Covers concentrations up to 50 %. PC18 Ink and toners. : Covers concentrations up to 10 %. PC23 Leather treatment products : Covers concentrations up to 50 %.

Amounts used

PC15_1 Water-borne latex wall paint
For each use event, covers use amounts up to 2 760 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.
PC23 Leather treatment products
For each use event, covers use amounts up to 56 g.

Frequency and duration of use

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

PC15_1 Water-borne latex wall paint
Covers exposure up to 2,20 hours per event.
Covers use up to 4 day(s)/year.
PC15_2 Solvent rich, high solid, water-borne paint
Covers exposure up to 2,20 hours per event.
Covers use up to 6 day(s)/year.
PC15_3 Aerosol spray can
Covers exposure up to 0,33 hours per event.
Covers use up to 2 day(s)/year.
PC15_4 Removers (paint-, glue-, wall paper-, sealant remover)
Covers exposure up to 2,00 hours per event.
Covers use up to 3 day(s)/year.
PC18 Ink and toners.
Covers exposure up to 2,20 hours per event.
Covers use up to 365 day(s)/year.
PC23_1 Polishes, wax/cream (floor, furniture, shoes)
Covers exposure up to 1,23 hours per event.
Covers use up to 8 day(s)/year.
PC23_2 Polishes, spray (furniture, shoes)
Covers exposure up to 0,33 hours per event.
Covers use up to 8 day(s)/year.
Uses in Coatings - Consumer

Human factors not influenced by risk management

Potentially exposed body parts
- PC15_1 Water-borne latex wall paint
- PC15_2 Solvent rich, high solid, water-borne paint
- PC23 Leather treatment products: Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation PC15_3 Aerosol spray can: Inhalation PC15_4 Removers (paint-, glue-, wall paper-, sealant remover): Both hands. Inhalation PC18 Ink and toners: Fingertips Inhalation

Other given operational conditions affecting Non-industrial exposure

Setting
Indoor. Unless otherwise stated.

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

Room size
PC15_3 Aerosol spray can: Covers use in a one car garage (34 m²) 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 4)

Control of Non-industrial exposure

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

Concentration details
PC24_1 Liquids Covers concentrations up to 100%. PC24_2 Pastes Covers concentrations up to 20%. PC24_3 Sprays Covers concentrations up to 50%. PC31 Polishes and wax blends Covers concentrations up to 50%. PC34 Textile dyes and impregnating products Covers concentrations up to 10%.

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

PC24_1 Liquids
For each use event, covers use amounts up to 2 200 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.

Frequency and duration of use
Uses in Coatings - Consumer

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

PC24_1 Liquids
Covers exposure up to 0,17 hours per event.
Covers use up to 4 day(s)/year.

PC24_2 Pastes
Covers use up to 10 day(s)/year.

PC24_3 Sprays
Covers exposure up to 0,17 hours per event.
Covers use up to 6 day(s)/year.

PC31_1 Polishes, wax/cream (floor, furniture, shoes)
Covers exposure up to 1,23 hours per event.
Covers use up to 26 day(s)/year.

PC31_2 Polishes, spray (furniture, shoes)
Covers exposure up to 0,33 hours per event.
Covers use up to 8 day(s)/year.

PC34 Textile dyes and impregnating products
Covers exposure up to 1,00 hours per event.
(frequent use over a year)

Human factors not influenced by risk management

Potentially exposed body parts
PC24_1 Liquids : Inhalation Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. PC24_2 Pastes : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. PC24_3 Sprays : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation PC31 Polishes and wax blends. : Both hands. Inhalation PC34 Textile dyes and impregnating products : Both hands.

Other given operational conditions affecting Non-industrial exposure
Setting Indoor. Unless otherwise stated.
Temperature Assumes activities are at ambient temperature (unless stated differently).
Room size 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 (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer 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 - Industrial

### Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES04a</td>
</tr>
</tbody>
</table>

### 1. Title of exposure scenario

<table>
<thead>
<tr>
<th>Main title</th>
<th>Use in Cleaning Agents - Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process scope</td>
<td>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.</td>
</tr>
</tbody>
</table>

### Environment

<table>
<thead>
<tr>
<th>Environmental release category</th>
<th>ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPERC</td>
<td>ESVOC SPERC 4.4a.v3</td>
</tr>
</tbody>
</table>

### Worker

<table>
<thead>
<tr>
<th>Process category</th>
<th>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td></td>
<td>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</td>
</tr>
<tr>
<td></td>
<td>PROC4 Chemical production where opportunity for exposure arises</td>
</tr>
<tr>
<td></td>
<td>PROC7 Industrial spraying</td>
</tr>
<tr>
<td></td>
<td>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC10 Roller application or brushing</td>
</tr>
<tr>
<td></td>
<td>PROC13 Treatment of articles by dipping and pouring.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Amounts used</th>
<th>Daily amount per site: &lt;= 5 tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual amount per site: &lt;= 100 tonnes</td>
</tr>
<tr>
<td></td>
<td>Fraction of EU tonnage used in region: 0.1</td>
</tr>
<tr>
<td>Frequency and duration of use</td>
<td>Emission days: 20 days/year</td>
</tr>
<tr>
<td>Other given operational conditions affecting environmental exposure</td>
<td>Emission factor - air 29.4%</td>
</tr>
<tr>
<td></td>
<td>Emission factor - water 1E-5%</td>
</tr>
</tbody>
</table>
Use in Cleaning Agents - Industrial

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

Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

Frequency and duration of use

Covers daily exposure up to 8 hours

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour Unless otherwise stated.</td>
</tr>
</tbody>
</table>

Risk management measures

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

PROC7 Industrial spraying

≤ 5-10 air changes per hour

Wear suitable gloves tested to EN374.

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**

<table>
<thead>
<tr>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>EU REACH registration number</strong></td>
</tr>
<tr>
<td><strong>Version number</strong></td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
</tr>
</tbody>
</table>

#### 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).

#### 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 8.4a.v3

#### 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)

**Amounts used**
- Daily amount per site: <= 2.7E-4 tonnes
- Fraction of EU tonnage used in region: 0.1

**Other given operational conditions affecting environmental exposure**

<table>
<thead>
<tr>
<th><strong>Emission factor</strong></th>
<th><strong>Value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>4%</td>
</tr>
<tr>
<td>Water</td>
<td>0.0004%</td>
</tr>
<tr>
<td>Soil</td>
<td>2E-5%</td>
</tr>
</tbody>
</table>

#### 2. Conditions of use affecting exposure (Workers - Health 1)
Use in Cleaning Agents - Professional

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.

Ventilation rate  
≤ 3 air changes per hour Unless otherwise stated.

Risk management measures

PROC10 Roller application or brushing  
3-5 air changes per hour

PROC11 Non industrial spraying  
Duration <=4 h/day  
5-10 air changes per hour  
Wear suitable gloves tested to EN374.

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

<table>
<thead>
<tr>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>EU REACH registration number</strong></td>
</tr>
<tr>
<td><strong>Version number</strong></td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
</tr>
</tbody>
</table>

#### 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. |

<table>
<thead>
<tr>
<th>Product category</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC3 Air care products.</td>
</tr>
<tr>
<td>PC4 Anti-freeze and de-icing products.</td>
</tr>
<tr>
<td>PC8 Biocidal products</td>
</tr>
<tr>
<td>PC9a Coatings and paints, thinners, paint removers.</td>
</tr>
<tr>
<td>PC9b Fillers, putties, plasters, modelling clay.</td>
</tr>
<tr>
<td>PC9c Finger paints.</td>
</tr>
<tr>
<td>PC24 Lubricants, greases and release products.</td>
</tr>
<tr>
<td>PC35 Washing and cleaning products</td>
</tr>
<tr>
<td>PC38 Welding and soldering products, flux products</td>
</tr>
</tbody>
</table>

#### Environment

<table>
<thead>
<tr>
<th>Environmental release category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)</td>
</tr>
<tr>
<td>ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPERC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESVOC SPERC 8.4c.v2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Amounts used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily amount per site: &lt;=7.2E-5 tonnes</td>
</tr>
<tr>
<td>Fraction of EU tonnage used in region: 0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other given operational conditions affecting environmental exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - air</td>
</tr>
<tr>
<td>Emission factor - water</td>
</tr>
<tr>
<td>Emission factor - soil</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Control of Non-Industrial exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC3 Air care products. : PC3_1 Air care, instant action (aerosol sprays) PC3_2 Air care, continuous action (solid and liquid)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
</tr>
</tbody>
</table>
Use in Cleaning Agents - Consumer

**Concentration details**

PC3_1 Air care, instant action (aerosol sprays) : Covers concentrations up to 50 %. PC3_2 Air care, continuous action (solid and liquid) : Covers concentrations up to 10 %.

**Amounts used**

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

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

**Frequency and duration of use**

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_2 Air care, continuous action (solid and liquid)
Covers use up to 1 time(s)/day.
Covers exposure up to 8.00 hours per event.

**Human factors not influenced by risk management**

**Potentially exposed body parts**

PC3_1 Air care, instant action (aerosol sprays) : Inhalation
PC3_2 Air care, continuous action (solid and liquid) : Fingertips

**Other given operational conditions affecting Non-industrial exposure**

**Setting** Indoor.

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

**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**

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 : 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

**Concentration details**

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 %.

**Amounts used**
Use in Cleaning Agents - Consumer

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.

PC4_1 Washing car window
Covers exposure up to 0.017 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 exposure up to 2.2 hours per event.
Covers use up to 128 day(s)/year.

PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
Covers exposure up to 0.17 hours per event.
Covers use up to 128 day(s)/year.

Human factors not influenced by risk management
Potentially exposed body parts
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), PC8_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
Inhalation PC4_2 Pouring into radiator: Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation PC4_3 Lock de-icer: Palm of one hand. Inhalation:

Other given operational conditions affecting Non-industrial exposure
Setting
Indoor. Unless otherwise stated.

PC4 Anti-freeze and de-icing products, PC4_2 Pouring into radiator, PC4_3 Lock de-icer
Covers use in a one car garage (34 m²) under typical ventilation.

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

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)
Use in Cleaning Agents - Consumer

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.

Product characteristics

Physical state

Liquid

Concentration details

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 %, PC9a_3 Aerosol spray can : Covers concentrations up to 50 %, PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover) : Covers concentrations up to 50 %, PC9b_1 Fillers and putty : Covers concentrations up to 2 %, PC9b_2 Plasters and floor equalisers : Covers concentrations up to 2 %, PC9b_3 Modelling clay : Covers concentrations up to 1 %, PC9c Finger paints : Covers concentrations up to 33 %.

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 13800 g.

Frequency and duration of use
Use in Cleaning Agents - Consumer

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

- PC9a_1 Water-borne latex wall paint
Covers exposure up to 2,20 hours per event.
Covers use up to 4 day(s)/year.

- PC9a_2 Solvent-rich, high-solid, water-borne paint
Covers exposure up to 2,20 hours per event.
Covers use up to 6 day(s)/year.

- PC9a_3 Aerosol spray can.
Covers exposure up to 0,33 hours per event.
Covers use up to 2 day(s)/year.

- PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover).
Covers exposure up to 2,00 hours per event.
Covers use up to 3 day(s)/year.

- PC9b_1 Fillers and putty
Covers exposure up to 4,00 hours per event.
Covers use up to 12 day(s)/year.

- PC9b_2 Plasters and floor equalisers
Covers exposure up to 2,00 hours per event.
Covers use up to 12 day(s)/year.

- PC9b_3 Modelling clay
Covers exposure up to 8 hours per event.
Covers use up to 365 day(s)/year.

- PC9c Finger paints.
Covers exposure up to 8 hours per event.
Covers use up to 365 day(s)/year.

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 : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation PC9a_3 Aerosol spray can : Inhalation PC9a_4 Removers (paint-, glue-, wallpaper-, sealant-remover). : Both hands. Inhalation PC9b_1 Fillers and putty : Fingertips Inhalation PC9b_2 Plasters and floor equalisers : Both hands. Inhalation PC9b_3 Modelling clay , PC9c Finger paints. : Both hands. |

PC9b_3 Modelling clay For each use event, assumes swallowed amount of (cm3): 1. PC9c Finger paints. For each use event, assumes swallowed amount of (cm3): 1,35.

Other given operational conditions affecting Non-industrial exposure

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

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 4)

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
Use in Cleaning Agents - Consumer

Physical state

- Liquid

Concentration details

- PC24_1 Liquids Covers concentrations up to 100 %. PC24_2 Pastes 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 %. PC38 Welding and soldering products, flux products Covers concentrations up to 20 %.

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

Amounts used

- PC24_1 Liquids
  For each use event, covers use amounts up to 2200 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.
- PC24_1 Liquids
  Covers exposure up to 0,17 hours per event.
  Covers use up to 4 day(s)/year.
- PC24_2 Pastes
  Covers use up to 10 day(s)/year.
- PC24_3 Sprays
  Covers exposure up to 0,17 hours per event.
  Covers use up to 6 day(s)/year.
- PC35_1 Laundry and dish washing products
  Covers exposure up to 0,50 hours per event.
  Covers use up to 365 day(s)/year.
- PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners)
  Covers exposure up to 0,33 hours per event.
  Covers use up to 128 day(s)/year.
- PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)
  Covers exposure up to 0,17 hours per event.
  Covers use up to 128 day(s)/year.
- PC38 Welding and soldering products, flux products
  Covers exposure up to 1,00 hours per event.
  Covers use up to 365 day(s)/year.

Human factors not influenced by risk management

37/95
Use in Cleaning Agents - Consumer

**Potentially exposed body parts**
- **PC24_1 Liquids**: Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation
- **PC24_2 Pastes**: Both hands. Inhalation
- **PC24_3 Sprays**: Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation
- **PC35_1 Laundry and dish washing products**: Both hands. Inhalation
- **PC35_2 Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, carpet cleaners, metal cleaners)**: Both hands. Inhalation
- **PC35_3 Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)**: Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation
- **PC38 Welding and soldering products, flux products**: Inhalation

**Other given operational conditions affecting Non-industrial exposure**
- **Setting**: Indoor. Unless otherwise stated.
- **Temperature**: Assumes activities are at ambient temperature (unless stated differently).
- **Room size**: 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 (Health 1)

**Assessment method**
The ECETOC TRA tool has been used to estimate consumer 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 - Industrial

### Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES06a</td>
</tr>
</tbody>
</table>

### 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.

### Environment

- **Environmental release category**: ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- **Environment**
  - ERC7 Use of functional fluid at industrial site
- **SPERC**: ESVOC SPERC 4.6a.v2
- **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)

- **Control of environmental exposure**
- **Environmental release category**: ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- **Amounts used**
  - Daily amount per site: <= 0.11 tonnes
  - Annual amount per site: <= 2.2 tonnes
  - Fraction of EU tonnage used in region: 0.1
- **Frequency and duration of use**
Lubricants - Industrial

Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>0.15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.0001%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

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

Control of environmental exposure

Environmental release category  ERC7 Use of functional fluid at industrial site

Amounts used

Daily amount per site: <= 0.11 tonnes
Annual site tonnage: <= 2.2 tonnes
Fraction of EU tonnage used in region: 10%

Frequency and duration of use

Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>0.15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.0001%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>Not applicable - no direct release to soil.</td>
</tr>
</tbody>
</table>

Environmental factors not influenced by risk management measures

Dilution  Receiving surface water flow: >= 18400 m³/day

Risk management measures

STP type  Aerobic biological treatment

STP details  Assumed domestic sewage treatment plant flow (m³/day): >= 2000

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 exposure up to 8 hours

Other given operational conditions affecting workers exposure

Setting  Indoor.

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

Ventilation rate  <= 3 air changes per hour Unless otherwise stated.

Risk management measures
Lubricants - Industrial

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

PROC7 Industrial spraying
5-10 air changes per hour
Wear suitable gloves tested to EN374.

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

1. Title of exposure scenario
Main title: Lubricants - Professional
Process scope: Covers the use of formulated lubricants within closed or contained systems, including incidental exposures during material transfers, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

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)
- ERC9a Widespread use of functional fluid (indoor)
- ERC9b Widespread use of functional fluid (outdoor)

SPERC: ESVOC SPERC 8.6c.v2

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)
- PROC10 Roller application or brushing
- PROC11 Non industrial spraying
- 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
- PROC20 Use of functional fluids in small devices

2. Conditions of use affecting exposure (Industrial - Environment 1)
Amounts used:
- Daily amount per site: <= 3.01E6 tonnes
- Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure
Lubricants - Professional

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>5%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>5%</td>
</tr>
</tbody>
</table>

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: Indoor.
- Temperature: Assumes use at not more than 20°C above ambient temperature, unless stated differently.
- Ventilation rate: ≤ 3 air changes per hour Unless otherwise stated.

Risk management measures

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

PROC11 Non industrial spraying
Covers daily exposure up to 4 hours
5-10 air changes per hour
Wear suitable gloves tested to EN374.

PROC17 Lubrication at high energy conditions in metal working operations
PROC18 General greasing/lubrication at high kinetic energy conditions
5-10 air changes per hour

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, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%
EU REACH registration number  01-2119463258-33-0003
Version number  2021
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.

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)
ERC9a Widespread use of functional fluid (indoor)
ERC9b Widespread use of functional fluid (outdoor)
SPERC  ESVOC SPERC 8.6.e.v2

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

Control of environmental exposure (Non-industrial)

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)

Amounts used  Daily amount per site: <=2.7E-6 tonnes
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure

Emission factor - air  15%
Emission factor - water  5%
Emission factor - soil  5%

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

Control of environmental exposure (Non-industrial)

Environmental release category  ERC9a Widespread use of functional fluid (indoor)
ERC9b Widespread use of functional fluid (outdoor)
Lubricants - Consumer

Amounts used
Daily amount for wide dispersive uses: <=2.7E-6 tonnes
Fraction of EU tonnage used in region: 10%

Other given operational conditions affecting environmental exposure
Emission factor - air 15%
Emission factor - water 5%
Emission factor - soil 5%

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

Product characteristics
Physical state Liquid
Concentration details Covers concentrations up to 30 %.

Amounts used
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.

Frequency and duration of use
Covers use up to 1 time(s)/day.
PC1_1 Glues, hobby use
Covers exposure up to 4.00 hours per event.
Covers use up to 365 days/year.
PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue)
Covers exposure up to 6.00 hours per event.
Covers use up to 1 day(s)/year.
PC1_3 Glue from spray
Covers exposure up to 4.00 hours per event.
Covers use up to 6 days/year.
PC1_4 Sealants
Covers exposure up to 1.00 hours per event.
Covers use up to 365 days/year.

Human factors not influenced by risk management
Potentially exposed body parts PC1_1 Glues, hobby use, PC1_3 Glue from spray, PC1_4 Sealants: Fingertips Inhalation
PC1_2 Glues DIY-use (carpet glue, tile glue, wood parquet glue): Both hands. Inhalation

Other given operational conditions affecting Non-industrial exposure
Setting Indoor.
Temperature Assumes activities are at ambient temperature (unless stated differently).
Lubricants - Consumer

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

Product characteristics

Physical state

Liquid

Concentration details

PC24_1 Liquids Covers concentrations up to 100 %. PC24_2 Pastes Covers concentrations up to 20 %. PC24_3 Sprays Covers concentrations up to 50 %.

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.

Frequency and duration of use

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

PC24_1 Liquids
Covers exposure up to 0,17 hours per event.
Covers use up to 4 days/year.

PC24_2 Pastes
Covers use up to 10 days/year.

PC24_3 Sprays
Covers exposure up to 0,17 hours per event.
Covers use up to 6 days/year.

Human factors not influenced by risk management

Potentially exposed body parts

PC24_1 Liquids , PC24_3 Sprays : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands. Inhalation PC24_2 Pastes : Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands.

Other given operational conditions affecting Non-industrial exposure

Setting

Indoor. Unless otherwise stated.

Temperature

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

Room size

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.

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

Control of Non-industrial exposure

PC31 Polishes and wax blends. : PC31_1 Polishes, wax/cream (floor, furniture, shoes)
PC31_2 Polishes, spray (furniture, shoes)

Product characteristics

46/95
Lubricants - Consumer

Physical state  Liquid
Concentration details  Covers concentrations up to 50 %.

Amounts used

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.

PC31_1 Polishes, wax/cream (floor, furniture, shoes)
Covers exposure up to 1,23 hours per event.
Covers use up to 26 days/year.
PC31_2 Polishes, spray (furniture, shoes)
Covers exposure up to 0,33 hours per event.
Covers use up to 8 days/year.

Human factors not influenced by risk management

Potentially exposed body parts  Both hands. Inhalation

Other given operational conditions affecting Non-industrial exposure

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

Other given operational conditions affecting Non-industrial exposure

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

3. Exposure estimation (Health 1)

Assessment method  The ECETOC TRA tool has been used to estimate consumer 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 Metal Working Fluids/Rolling Oils - Industrial

Identification

Product name
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

EU REACH registration number
01-2119463258-33-0003

Version number
2021

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.

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.v3

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
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

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

Amounts used

Daily amount per site: <= 11.85 tonnes
Annual site tonnage: <=237 tonnes
Fraction of EU tonnage used in region: 0.1

Frequency and duration of use

Emission days: 20 days/year

Other given operational conditions affecting environmental exposure
# Use in Metal Working Fluids/Rolling Oils - Industrial

## Emission factors

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>1.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.0001%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>Not applicable - no direct release to soil.</td>
</tr>
</tbody>
</table>

## 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 exposure up to 8 hours

### Other given operational conditions affecting workers exposure

- **Setting**: Indoor.
- **Temperature**: Assumes use at not more than 20°C above ambient temperature, unless stated differently.
- **Ventilation rate**: ≤ 3 air changes per hour Unless otherwise stated.

### Risk management measures

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

- PROC7 Industrial spraying
  - 5-10 air changes per hour
  - Wear suitable gloves tested to EN374.

## 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 Metal Working Fluids/Rolling Oils - Professional

Identification

Product name Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%
EU REACH registration number 01-2119463258-33-0003
Version number 2017
Es reference ES07b

1. Title of exposure scenario

Main title Use in Metal Working Fluids/Rolling Oils - Professional
Process scope Covers the use in formulated MWFs, including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/reject articles and disposal of waste oils.

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 8.7c.v2

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
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
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.
PROC17 Lubrication at high energy conditions in metal working operations

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

Amounts used
Daily amount per site: <= 1.6E-4 tonnes
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure

Emission factor - air 15%
Emission factor - water 5%
## Use in Metal Working Fluids/Rolling Oils - Professional

### Emission factor - soil

5%

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

#### Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

#### Frequency and duration of use

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

#### Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour Unless otherwise stated.</td>
</tr>
</tbody>
</table>

#### Risk management measures

- **PROC10 Roller application or brushing**
  - 3-5 air changes per hour
- **PROC11 Non industrial spraying**
  - **Duration**
    - <=4 h/day
  - 5-10 air changes per hour
  - Wear suitable gloves tested to EN374.
- **PROC17 Lubrication at high energy conditions in metal working operations**
  - 5-10 air changes per hour

### 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</td>
</tr>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2017</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES10a</td>
</tr>
</tbody>
</table>

## 1. Title of exposure scenario

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main title</td>
<td>Use as Release Agents or Binders - Industrial</td>
</tr>
<tr>
<td>Process scope</td>
<td>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.</td>
</tr>
</tbody>
</table>

## Environment

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental release category</td>
<td>ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)</td>
</tr>
<tr>
<td>SPERC</td>
<td>ESVOC SPERC 4.10a.v3</td>
</tr>
</tbody>
</table>

## Worker

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process category</td>
<td>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td></td>
<td>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td></td>
<td>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</td>
</tr>
<tr>
<td></td>
<td>PROC4 Chemical production where opportunity for exposure arises</td>
</tr>
<tr>
<td></td>
<td>PROC6 Calendering operations.</td>
</tr>
<tr>
<td></td>
<td>PROC7 Industrial spraying</td>
</tr>
<tr>
<td></td>
<td>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC10 Roller application or brushing</td>
</tr>
<tr>
<td></td>
<td>PROC13 Treatment of articles by dipping and pouring.</td>
</tr>
<tr>
<td></td>
<td>PROC14 Tabletting, compression, extrusion, pelletisation, granulation</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amounts used</td>
<td>Daily amount per site: &lt;= 11.85 tonnes</td>
</tr>
<tr>
<td></td>
<td>Annual amount per site: &lt;= 237 tonnes</td>
</tr>
<tr>
<td></td>
<td>Fraction of EU tonnage used in region: 0.1</td>
</tr>
<tr>
<td>Frequency and duration of use</td>
<td>Emission days: 20 days/year</td>
</tr>
</tbody>
</table>

Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - air</td>
<td>19.6 %</td>
</tr>
<tr>
<td>Emission factor - water</td>
<td>0.005 %</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>Not applicable - no direct release to soil.</td>
</tr>
</tbody>
</table>
Use as Release Agents or Binders - Industrial

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 exposure up to 8 hours

Other given operational conditions affecting workers exposure

Setting
Indoor.

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

Ventilation rate
<= 3 air changes per hour Unless otherwise stated.

Risk management measures
No specific risk management measure identified beyond those operational conditions stated. Unless otherwise stated.

PROC7 Industrial spraying
5-10 air changes per hour
Wear suitable gloves tested to EN374.

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**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES10b</td>
</tr>
</tbody>
</table>

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.

**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.v2

**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 Tabletting, compression, extrusion, pelletisation, granulation

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

- **Amounts used**: Daily amount per site: \( \leq 1.4 \times 10^{-4} \)  
  Fraction of EU tonnage used in region: 0.1

**Other given operational conditions affecting environmental exposure**

- **Emission factor - air**: 90%
- **Emission factor - water**: 2.5%
- **Emission factor - soil**: 2.5%

2. **Conditions of use affecting exposure (Workers - Health 1)**
Use as Release Agents or Binders - Professional

**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**
Indoor.

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

**Ventilation rate**
≤ 3 air changes per hour Unless otherwise stated.

**Risk management measures**

PROC10 Roller application or brushing
3-5 air changes per hour

PROC11 Non industrial spraying
Duration
4 h/day
5-10 air changes per hour
Wear suitable gloves tested to EN374.

### 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 - Industrial

<table>
<thead>
<tr>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>EU REACH registration number</strong></td>
</tr>
<tr>
<td><strong>Version number</strong></td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
</tr>
</tbody>
</table>

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. |

Environment

| Environmental release category | ERC7 Use of functional fluid at industrial site |
| **SPERC** | ESVOC SPERC 7.12a.v3 |

Worker

<table>
<thead>
<tr>
<th>Process category</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</td>
</tr>
<tr>
<td>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</td>
</tr>
<tr>
<td>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</td>
</tr>
<tr>
<td>PROC16 Use of fuels</td>
</tr>
</tbody>
</table>

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

Control of environmental exposure

No exposure assessment presented for the environment.

Amounts used

- Daily amount per site: <= 0.1 tonnes
- Annual amount per site: <= 2 tonnes
- Fraction of EU tonnage used in region: 0.1

Frequency and duration of use

- Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

- **Emission factor - air**: 0.025%
- **Emission factor - water**: 0.001%
- **Emission factor - soil**: Not applicable - no direct release to soil.
# Use as a Fuel - Industrial

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

### 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 exposure up to 8 hours

### Setting
- Indoor.

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

### Ventilation rate
- ≤ 3 air changes per hour

### Risk management measures
- No specific risk management measure identified beyond those operational conditions stated.

## 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

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES12b</td>
</tr>
</tbody>
</table>

### 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.

### Environment

- **Environmental release category**
  - ERC9a Widespread use of functional fluid (indoor)
  - ERC9b Widespread use of functional fluid (outdoor)
- **SPERC**: ESVOC SPERC 9.12b.v3

### 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)

- **Amounts used**
  - Daily amount per site: <= 2.7E-6 tonnes
  - Fraction of EU tonnage used in region: 0.1

- **Other given operational conditions affecting environmental exposure**
  - Emission factor - air: 0.5%
  - Emission factor - water: 0.0001%
  - Emission factor - soil: 0.025%

### 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).
Use as a Fuel - Professional

**Frequency and duration of use**
Covers daily exposures up to 8 hours (unless stated differently).

**Other given operational conditions affecting workers exposure**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

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

### 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

1. Title of exposure scenario
   Main title: Use as a Fuel - Consumer
   Process scope: Covers consumer uses in liquid fuels.
   Product category: PC13 Fuels.

2. Conditions of use affecting exposure (Non-Industrial - Environment 1)
   Amounts used:
   Daily amount per site: \( \leq 2.7 \times 10^{-6} \) tonnes
   Fraction of EU tonnage used in region: 0.1
   Other given operational conditions affecting environmental exposure:
   Emission factor - air: 0.01%
   Emission factor - water: 2\( \times 10^{-5} \%
   Emission factor - soil: 0.005%

2. Conditions of use affecting exposure (Non-Industrial - Health 1)
   Product characteristics:
   Physical state: Liquid
   Concentration details: Covers percentage substance in the product up to 100% (unless stated differently).
   Amounts used:
   PC13_1 Liquid: automotive refuelling
   For each use event, covers use amounts up to 37.5 kg.
   PC13_2 Liquid: scooter refuelling
   For each use event, covers use amounts up to 3.75 kg.
   PC13_3 Liquid: garden equipment - use
   For each use event, covers use amounts up to 750 g.
   PC13_4 Liquid: Garden equipment - Refuelling
   For each use event, covers use amounts up to 750 g.
   PC13_5 Liquid: lamp oil
   For each use event, covers use amounts up to 100 g.
   PC13_6 Liquid: home space heater fuel
   For each use event, covers use amounts up to 3000 g.
Use as a Fuel - Consumer

Frequency and duration of use

Covers use up to 1 time(s)/day.
Covers use up to 52 days/year.
Unless otherwise stated.

PC13_1 Liquid: automotive refuelling
Covers exposure up to 0.05 hours per event.

PC13_2 Liquid: scooter refuelling
Covers exposure up to 0.033 hours per event.

PC13_3 Liquid: garden equipment - use
Covers exposure up to 2.00 hours per event.
(frequent use over a year)

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

PC13_5 Liquid: lamp oil
Covers exposure up to 0.013 hours per event.

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

Human factors not influenced by risk management

Potentially exposed body parts
Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands.
Unless otherwise stated.

PC13_2 Liquid: scooter refuelling , PC13_3 Liquid: garden equipment - use : Dermal exposure is considered to be not relevant.

PC13_6 Liquid: home space heater fuel , PC13_5 Liquid: lamp oil : Palm of one hand.

Other given operational conditions affecting Non-industrial exposure

Setting
Covers outdoor use. Unless otherwise stated.

PC13_6 Liquid: home space heater fuel , PC13_5 Liquid: lamp oil : Indoor use.

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

Other given operational conditions affecting Non-industrial exposure
No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Health 1)

Assessment method
The ECETOC TRA tool has been used to estimate consumer 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 as a Fuel - Consumer

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

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES13a</td>
</tr>
</tbody>
</table>

### 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.

### Environment

- **Environmental release category**: ERC7 Use of functional fluid at industrial site
- **SPERC**: ESVOC SPERC 7.13a.v2

### 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)

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

#### Amounts used

- Daily amount per site: <=0.5 tonnes  
- Annual amount per site: <= 10 tonnes  
- Fraction of EU tonnage used in region: 0.1

#### Frequency and duration of use

- Emission days: 20 days/year

#### Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>0.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.0001%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

### 2. Conditions of use affecting exposure (Workers - Health 1)
Use as Functional Fluids - Industrial

**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 exposure up to 8 hours

**Other operational conditions affecting worker exposure**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

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

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 Functional Fluids - Professional

Identification

Product name
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

EU REACH registration number
01-2119463258-33-0003

Version number
2021

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.

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)

Amounts used
Daily amount per site: <= 1.4E-5 tonnes
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure

Emission factor - air
5%

Emission factor - water
5%

Emission factor - soil
5%

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

Product characteristics

Physical state
Liquid

Vapour pressure
Vapour pressure < 0.5 kPa at STP.
Use as Functional Fluids - Professional

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

Frequency and duration of use
Covers daily exposure up to 8 hours.

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

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

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 Functional Fluids - Consumer**

## Identification

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU REACH registration number</strong></td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td><strong>Version number</strong></td>
<td>2021</td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
<td>ES13c</td>
</tr>
</tbody>
</table>

## 1. Title of exposure scenario

<table>
<thead>
<tr>
<th><strong>Main title</strong></th>
<th>Use as Functional Fluids - Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process scope</strong></td>
<td>Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.</td>
</tr>
</tbody>
</table>
| **Product category** | PC16 Heat transfer fluids.  
PC17 Hydraulic fluids. |

## Environment

| **Environmental release category** | ERC9a Widespread use of functional fluid (indoor)  
ERC9b Widespread use of functional fluid (outdoor) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPERC</strong></td>
<td>ESVOC SPERC 9.13c.v2</td>
</tr>
</tbody>
</table>

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

### Amounts used

- Daily amount per site: \( \leq 1.4 \times 10^{-5}\) tonnes  
- Fraction of EU tonnage used in region: 0.1

### Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th><strong>Emission factor - air</strong></th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emission factor - water</strong></td>
<td>5%</td>
</tr>
<tr>
<td><strong>Emission factor - soil</strong></td>
<td>5%</td>
</tr>
</tbody>
</table>

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

### Control of Non-industrial exposure

- PC16 Heat transfer fluids. PC17 Hydraulic fluids.

### Product characteristics

<table>
<thead>
<tr>
<th><strong>Physical state</strong></th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concentration details</strong></td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

### Amounts used

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

### Frequency and duration of use

- Covers exposure up to 0.17 hours per event.  
- Covers use up to 1 time(s)/day.  
- Covers use up to 4 days/year.

### Human factors not influenced by risk management

67/95
Use as Functional Fluids - Consumer

Potentially exposed body parts
- Hand
- Palm of one hand.
- Palm of both hands.

Other given operational conditions affecting Non-industrial exposure

Setting
Covers use in a one car garage (34 m³) under typical ventilation.

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

Other given operational conditions affecting Non-industrial exposure
No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Health 1)

Assessment method
The ECETOC TRA tool has been used to estimate consumer 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 Road and Construction Applications - Professional

<table>
<thead>
<tr>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>EU REACH registration number</strong></td>
</tr>
<tr>
<td><strong>Version number</strong></td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
</tr>
</tbody>
</table>

## 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. |

## Environment

| Environmental release category | ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |
| SPERC | SPERC 8.15.v2 |

<table>
<thead>
<tr>
<th>Worker Process category</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</td>
</tr>
<tr>
<td>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</td>
</tr>
<tr>
<td>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</td>
</tr>
<tr>
<td>PROC10 Roller application or brushing</td>
</tr>
<tr>
<td>PROC11 Non industrial spraying</td>
</tr>
<tr>
<td>PROC13 Treatment of articles by dipping and pouring.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Control of environmental exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental release category</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amounts used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily amount per site: &lt;=5.5E-6 tonnes</td>
</tr>
<tr>
<td>Fraction of EU tonnage used in region: 0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other given operational conditions affecting environmental exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - air</td>
</tr>
<tr>
<td>Emission factor - water</td>
</tr>
<tr>
<td>Emission factor - soil</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Control of environmental exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental release category</td>
</tr>
</tbody>
</table>

69/95
Use in Road and Construction Applications - Professional

**Amounts used**
- Daily amount per site: <=5.5E-6 tonnes
- Annual amount used in the EU: 10%

**Other given operational conditions affecting environmental exposure**
- Emission factor - air: 94%
- Emission factor - water: 1%
- Emission factor - soil: 4%

**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: Indoor.
- Temperature: Assumes use at not more than 20°C above ambient temperature, unless stated differently.
- Ventilation rate: ≤ 3 air changes per hour Unless otherwise stated.

**Risk management measures**
- PROC10 Roller application or brushing
  - 3-5 air changes per hour
- PROC11 Non industrial spraying
  - Duration: <=4 h/day
  - 5-10 air changes per hour
  - Wear suitable gloves tested to EN374.

**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

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU REACH registration number</strong></td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td><strong>Version number</strong></td>
<td>2021</td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
<td>ES16c</td>
</tr>
</tbody>
</table>

### 1. Title of exposure scenario

<table>
<thead>
<tr>
<th><strong>Main title</strong></th>
<th>Other Consumer Uses - Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process scope</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Product category</strong></td>
<td>PC28 Perfumes, fragrances. PC39 Cosmetics, personal care.</td>
</tr>
</tbody>
</table>

### 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) |

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

#### Amounts used

- Daily amount per site: <=2.3E-6 tonnes
- Fraction of EU tonnage used in region: 0.1

#### Other given operational conditions affecting environmental exposure

| **Emission factor - air** | 95% |
| **Emission factor - water** | 2.5% |
| **Emission factor - soil** | 2.5% |

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

#### Control of Non-industrial exposure

PC28 Perfumes, fragrances.

#### Product characteristics

- **Physical state**: Liquid
- **Concentration details**: Covers concentrations up to 100 %.

#### Amounts used

- For each use event, covers use amounts up to 0.61 g.

#### Frequency and duration of use

- Covers exposure up to 5.333 hours per event.
- Covers use up to 1 time(s)/day.
Other Consumer Uses - Consumer

**Other given operational conditions affecting Non-industrial exposure**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
</table>

**Exposure route** Inhalation

<table>
<thead>
<tr>
<th>2. Conditions of use affecting exposure (Non-Industrial - Health 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of Non-industrial exposure</td>
</tr>
<tr>
<td>PC39 Cosmetics, personal care.</td>
</tr>
</tbody>
</table>

**Product characteristics**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Concentration details</th>
<th>Covers concentrations up to 100 %.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Frequency and duration of use</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Covers use up to 1 time(s)/day.</th>
</tr>
</thead>
</table>

**Other given operational conditions affecting Non-industrial exposure**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Inhalation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>3. Exposure estimation (Environment 1)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Assessment method</th>
<th>Used Petrorisk model.</th>
</tr>
</thead>
</table>
# Exposure scenario

## Use in Laboratories - Industrial

### Identification

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU REACH registration number</strong></td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td><strong>Version number</strong></td>
<td>2021</td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
<td>ES17a</td>
</tr>
</tbody>
</table>

### 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.

### Environment

**Environmental release category**

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)

**Amounts used**

Daily amount per site: <= 0.0005 tonnes  
Annual amount per site: <= 0.01 tonnes  
Fraction of EU tonnage used in region: 0.1

**Frequency and duration of use**

Emission days: 20 days/year

**Other given operational conditions affecting environmental exposure**

- **Emission factor - air**: 2.5%
- **Emission factor - water**: 2%
- **Emission factor - soil**: 0.01%

### 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 exposure up to 8 hours

**Other given operational conditions affecting workers exposure**

**Setting**: Indoor.
### Use in Laboratories - Industrial

<table>
<thead>
<tr>
<th><strong>Temperature</strong></th>
<th>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ventilation rate</strong></td>
<td>≤ 3 air changes per hour</td>
</tr>
<tr>
<td><strong>Risk management measures</strong></td>
<td>No specific risk management measure identified beyond those operational conditions stated.</td>
</tr>
</tbody>
</table>

#### 3. Exposure estimation (Environment 1)

| **Assessment method** | Used Petrorisk model. |

#### 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, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

EU REACH registration number: 01-2119463258-33-0003

Version number: 2021

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.

Environment

Environmental release category: ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

SPERC: ESVOC SPERC 8.17.v2

Worker

Process category: PROC10 Roller application or brushing
PROC15 Use as laboratory reagent.

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

Amounts used

Daily amount per site: <=1.4E-8 tonnes
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure

Emission factor - air: 50%
Emission factor - water: 50%
Emission factor - soil: Not applicable - no direct release to soil.

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 exposure up to 8hours

Other given operational conditions affecting workers exposure

Setting: Indoor.

Temperature: Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Use in Laboratories - Professional

Risk management measures

PROC10 Roller application or brushing
3-5 air changes per hour

PROC15 Use as laboratory reagent.
≤ 3 air changes per hour

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

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES23a</td>
</tr>
</tbody>
</table>

### 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.

### 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.v2

### 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
  - 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 Tabletting, compression, extrusion, pelletisation, granulation

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

#### Amounts used

- Daily amount per site: \( \leq 14.5 \text{ tonnes} \)
- Annual site tonnage: \( \leq 1450 \text{ tonnes} \)
- Fraction of EU tonnage used in region: 0.1

#### Frequency and duration of use

- Emission days: 100 days/year

#### Other given operational conditions affecting environmental exposure

- Emission factor - air: 5%
Use in Polymer Processing - Industrial

<table>
<thead>
<tr>
<th>Emission factor - water</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - soil</td>
<td>0.001%</td>
</tr>
</tbody>
</table>

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 exposure up to 8 hours

**Other given operational conditions affecting workers exposure**
- **Setting**: Indoor.
- **Temperature**: Assumes use at not more than 20°C above ambient temperature, unless stated differently.
- **Ventilation rate**: ≤ 3 air changes per hour
- **Risk management measures**: No specific risk management measure identified beyond those operational conditions stated.

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 - Professional

### Identification
- **Product name**: Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%
- **EU REACH registration number**: 01-2119463258-33-0003
- **Version number**: 2021
- **Es reference**: ES23b

### 1. Title of exposure scenario
- **Main title**: Use in Polymer Processing - Professional
- **Process scope**: Processing of formulated polymers, including material transfers, moulding and forming activities, material reworks and associated maintenance.

### 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 8.21b.v1 ESVOC SPERC 8.21b.v2

### 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
  - 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
  - PROC14 Tabletting, compression, extrusion, pelletisation, granulation

### 2. Conditions of use affecting exposure (Industrial - Environment 1)
- **Amounts used**
  - Daily amount per site: <= 0.0018 tonnes
  - Fraction of EU tonnage used in region: 0.1
- **Other given operational conditions affecting environmental exposure**
  - **Emission factor - air**: 98%
  - **Emission factor - water**: 1%
  - **Emission factor - soil**: 1%

### 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).
Use in Polymer Processing - Professional

**Frequency and duration of use**
Covers daily exposures up to 8 hours (unless stated differently).

**Other given operational conditions affecting workers exposure**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

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

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 Water Treatment Chemicals - Industrial**

### Identification

<table>
<thead>
<tr>
<th><strong>Product name</strong></th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EU REACH registration number</strong></td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td><strong>Version number</strong></td>
<td>2021</td>
</tr>
<tr>
<td><strong>Es reference</strong></td>
<td>ES21a</td>
</tr>
</tbody>
</table>

### 1. Title of exposure scenario

<table>
<thead>
<tr>
<th><strong>Main title</strong></th>
<th>Use in Water Treatment Chemicals - Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process scope</strong></td>
<td>Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.</td>
</tr>
</tbody>
</table>

### Environment

<table>
<thead>
<tr>
<th><strong>Environmental release category</strong></th>
<th>ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPERC</strong></td>
<td>ESVOC SPERC 3.22a.v3</td>
</tr>
</tbody>
</table>

### Worker

<table>
<thead>
<tr>
<th><strong>Process category</strong></th>
<th>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td></td>
<td>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</td>
</tr>
<tr>
<td></td>
<td>PROC4 Chemical production where opportunity for exposure arises</td>
</tr>
<tr>
<td></td>
<td>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC13 Treatment of articles by dipping and pouring.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th><strong>Amounts used</strong></th>
<th>Daily amount per site: &lt;= 0.1 tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual site tonnage: &lt;= 30 tonnes</td>
</tr>
<tr>
<td></td>
<td>Fraction of EU tonnage used in region: 0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Frequency and duration of use</strong></th>
<th>Emission days: 300 days/year</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Emission factor - air</strong></th>
<th>0.03%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emission factor - water</strong></td>
<td>1.23%</td>
</tr>
<tr>
<td><strong>Emission factor - soil</strong></td>
<td>Not applicable - no direct release to soil.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th><strong>Product characteristics</strong></th>
<th></th>
</tr>
</thead>
</table>
### Use in Water Treatment Chemicals - Industrial

#### 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).
- Covers daily exposure up to 8 hours.

#### Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

#### Risk management measures
- No specific risk management measure identified beyond those operational conditions stated.

### 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
Manufacture of Substance - Industrial

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).

2. Conditions of use affecting exposure (Industrial - Environment 1)
Amounts used
Daily amount per site: <= 57.66 tonnes
Annual amount per site: <= 1.73E4 tonnes
Fraction of EU tonnage used in region: 0.1

Frequency and duration of use
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure
Emission factor - air 0.1%
Emission factor - water 0.001%
Emission factor - soil 0.01%
2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

Frequency and duration of use

Covers daily exposure up to 8 hours

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
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</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
</tbody>
</table>

Risk management measures

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

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 Water Treatment Chemicals - Professional

Identification
Product name: Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%
EU REACH registration number: 01-2119463258-33-0003
Version number: 2021
Es reference: ES21b

1. Title of exposure scenario
Main title: Use in Water Treatment Chemicals - Professional
Process scope: Covers the use of the substance for the treatment of water in open and closed systems.
Environment
Environmental release category: ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
SPERC: ESVOC SPERC 8.22b.v2

Worker
Process category:
PROC1 Chemical production or refinery in closed process without likelihood of 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
PROC13 Treatment of articles by dipping and pouring.

2. Conditions of use affecting exposure (Industrial - Environment 1)
Amounts used
Daily amount per site: <= 1.8E-4 tonnes
Fraction of EU tonnage used in region: 0.1

Other given operational conditions affecting environmental exposure
Emission factor - air: 1%
Emission factor - water: 99%
Emission factor - soil: Not applicable - no direct release to soil.

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).
Use in Water Treatment Chemicals - Professional

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour</td>
</tr>
<tr>
<td>Risk management measures</td>
<td>No specific risk management measure identified beyond those operational conditions stated.</td>
</tr>
</tbody>
</table>

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
Distribution of Substance - Industrial

Identification

Product name
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics < 2%

EU REACH registration number
01-2119463258-33-0003

Version number
2021

Es reference
ES01a

1. Title of exposure scenario

Main title
Distribution of Substance - Industrial

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.

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

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.

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

Control of environmental exposure
No exposure assessment presented for the environment.

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

Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

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

General exposures (open systems)
No other specific measures identified.

Process sampling
No other specific measures identified.

Laboratory activities
No other specific measures identified.

Bulk transfers (closed systems)
No other specific measures identified.

Bulk transfers (open systems)
No other specific measures identified.

Drum and small package filling
No other specific measures identified.

Equipment cleaning and maintenance
No other specific measures identified.

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

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)
Distribution of Substance - Industrial

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

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES02</td>
</tr>
</tbody>
</table>

### 1. Title of exposure scenario

<table>
<thead>
<tr>
<th>Main title</th>
<th>Formulation &amp; (Re)packing of Substances and Mixtures - Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process scope</td>
<td>Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.</td>
</tr>
</tbody>
</table>

### Environment

<table>
<thead>
<tr>
<th>Environmental release category</th>
<th>ERC2 Formulation into mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPERC</td>
<td>ESVOC SPERC 2.2.v2</td>
</tr>
</tbody>
</table>

### Worker

<table>
<thead>
<tr>
<th>Process category</th>
<th>PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions</td>
</tr>
<tr>
<td></td>
<td>PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</td>
</tr>
<tr>
<td></td>
<td>PROC4 Chemical production where opportunity for exposure arises</td>
</tr>
<tr>
<td></td>
<td>PROC5 Mixing or blending in batch processes</td>
</tr>
<tr>
<td></td>
<td>PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)</td>
</tr>
<tr>
<td></td>
<td>PROC14 Tabletting, compression, extrusion, pelletisation, granulation</td>
</tr>
<tr>
<td></td>
<td>PROC15 Use as laboratory reagent.</td>
</tr>
</tbody>
</table>

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

#### Product characteristics

- **Physical state**: Liquid
- **Vapour pressure**: Vapour pressure < 0.5 kPa at STP.

#### Amounts used

- Daily amount per site: <= 13.46 tonnes
- Annual site tonnage: <= 4040 tonnes
- Fraction of EU tonnage used in region: 0.1

#### Frequency and duration of use
Formulation & (Re)packing of Substances and Mixtures - Industrial

Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

- Emission factor - air: 1%
- Emission factor - water: 0.0005%
- Emission factor - soil: 0.01%

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 exposure up to 8 hours

Other given operational conditions affecting workers exposure

- Setting: Assumed a good basic standard of occupational hygiene is implemented.
- Temperature: Assumes use at not more than 20°C above ambient temperature, unless stated differently.
- Ventilation rate: ≤ 3 air changes per hour

Risk management measures

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

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 Water Treatment Chemicals - Consumer

Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES21c</td>
</tr>
</tbody>
</table>

1. Title of exposure scenario

| Main title                      | Use in Water Treatment Chemicals - Consumer                          |
| Process scope                   | Covers the use of the substance for the treatment of water in open and closed systems. |
| Product category                | PC36 Water softeners. PC37 Water treatment chemicals.                 |

Environment

| Environmental release category | ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) |
| SPERC                          | ESVOC SPERC 8.22c.v2                                                  |

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

| Amounts used                    | Daily amount per site: <= 1.4E-5 tonnes                               |
|                                 | Fraction of EU tonnage used in region: 0.1                           |
| Other given operational conditions affecting environmental exposure |                                                                                  |
| Emission factor - air           | 1%                                                                   |
| Emission factor - water         | 99%                                                                  |
| Emission factor - soil          | Not applicable - no direct release to soil.                          |

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

Control of Non-industrial exposure

PC36 Water softeners. PC37 Water treatment chemicals.

Product characteristics

| Physical state                  | Liquid                                                               |
| Concentration details           | Covers concentrations up to 100 %                                    |
| Frequency and duration of use   | Covers use up to 1 time(s)/day.                                     |
|                                 | (frequent use over a year)                                          |

Human factors not influenced by risk management

Potentially exposed body parts

| Inhalation                      |                                                                                  |

Other given operational conditions affecting Non-industrial exposure

|                                                                                  |                                                                                  |
Use in Water Treatment Chemicals - Consumer

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
</table>

Other given operational conditions affecting Non-industrial exposure
No specific risk management measure identified beyond those operational conditions stated.

3. Exposure estimation (Health 1)

Assessment method
The ECETOC TRA tool has been used to estimate consumer 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

<table>
<thead>
<tr>
<th>Product name</th>
<th>Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, aromatics &lt; 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU REACH registration number</td>
<td>01-2119463258-33-0003</td>
</tr>
<tr>
<td>Version number</td>
<td>2021</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES03a</td>
</tr>
</tbody>
</table>

## 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.

## 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.v2

## 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

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.

PROC14 Tabletting, compression, extrusion, pelletisation, granulation

PROC15 Use as laboratory reagent.

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

### Amounts used

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily amount per site</td>
<td>&lt;= 18.66 tonnes</td>
</tr>
<tr>
<td>Annual site tonnage</td>
<td>&lt;= 5600 tonnes</td>
</tr>
<tr>
<td>Fraction of EU tonnage used in region</td>
<td>0.1</td>
</tr>
</tbody>
</table>

### Frequency and duration of use

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission days</td>
<td>300 days/year</td>
</tr>
</tbody>
</table>
Uses in Coatings - Industrial

Other given operational conditions affecting environmental exposure

<table>
<thead>
<tr>
<th>Emission factor - air</th>
<th>9.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission factor - water</td>
<td>0.002%</td>
</tr>
<tr>
<td>Emission factor - soil</td>
<td>5%</td>
</tr>
</tbody>
</table>

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

Product characteristics

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>Vapour pressure &lt; 0.5 kPa at STP.</td>
</tr>
<tr>
<td>Concentration details</td>
<td>Covers percentage substance in the product up to 100% (unless stated differently).</td>
</tr>
</tbody>
</table>

Frequency and duration of use

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

Other given operational conditions affecting workers exposure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Indoor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Assumes use at not more than 20°C above ambient temperature, unless stated differently.</td>
</tr>
<tr>
<td>Ventilation rate</td>
<td>≤ 3 air changes per hour Unless otherwise stated.</td>
</tr>
</tbody>
</table>

Risk management measures

- No specific risk management measure identified beyond those operational conditions stated. Unless otherwise stated.
- PROC7 Industrial spraying
  - 5 - 10 air changes per hour
  - Wear suitable gloves tested to EN374.

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.