SAFETY DATA SHEET
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

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

1.1. Product identifier
Product name Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel
Product number ID 13865
UFI UFI: N63P-NXQ3-U811-AEMH

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Use as an intermediate (ES01a)
Use as a fuel (ES12a, ES12b, ES12c)

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 458111
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 EC 1278/2008 (SI 2019 No. 720)
Physical hazards Flam. Liq. 3 - H226
Health hazards Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Carc. 2 - H351 STOT RE 2 - H373 Asp. Tox. 1 - H304
Environmental hazards Aquatic Chronic 2 - H411

2.2. Label elements
Hazard pictograms

Signal word Danger
Hazard statements H226 Flammable liquid and vapour.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.
H411 Toxic to aquatic life with long lasting effects.
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

Precautionary statements
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P273 Avoid release to the environment.
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P331 Do NOT induce vomiting.
- P261 Avoid breathing vapours.

Contains
- Fuels, diesel, Renewable hydrocarbons (diesel type fraction), Distillates (Fischer-Tropsch), C8-26 - branched and linear, Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin

2.3. Other hazards

Other hazards
- Evaporates slowly. 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

3.2. Mixtures

<table>
<thead>
<tr>
<th>Fuels, diesel</th>
<th>0 - 100 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 68334-30-5</td>
<td>EC number: 269-822-7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distillates (Fischer-Tropsch), C8-26 - branched and linear</th>
<th>0 - 100 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 848301-67-7</td>
<td>EC number: 481-740-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Renewable hydrocarbons (diesel type fraction)</th>
<th>0 - 80 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: —</td>
<td>Classification</td>
</tr>
<tr>
<td>Asp. Tox. 1 - H304</td>
<td>—</td>
</tr>
</tbody>
</table>

2/29
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

<table>
<thead>
<tr>
<th>Classification</th>
<th>Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin</th>
<th>0 - 10 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- Flam. Liq. 3 - H226
- Acute Tox. 4 - H332
- Skin Irrit. 2 - H315
- Carc. 2 - H351
- STOT RE 2 - H373
- Asp. Tox. 1 - H304
- Aquatic Chronic 2 - H411

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

**Composition comments**
Mixture of renewable raw material fuel, petroleum product and additives. Contains kerosine streams and straight-run and hydrocracked gas oil streams.

**Other information**
Renewable hydrocarbons (diesel type fraction):; Identity outside the EU (CAS number and name of the substance):; Alkanes, C10-C20 -branched and linear, CAS 928771-01-1., REACH registration number:
Fuels, diesel: 01-2119484664-27, Distillates (Fischer-Tropsch), C8-26 - branched and linear: 01-0000020119-75, Renewable hydrocarbons (diesel type fraction): 01-2119450077-42, Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin: 01-2120091562-55

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- **Inhalation**: Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms are severe or persist.

- **Ingestion**: Do not induce vomiting. Get medical attention immediately.

- **Skin contact**: Remove contaminated clothing immediately and wash skin 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**
Irritating to skin. May irritate eyes. Harmful by inhalation. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

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

**Notes for the doctor**
Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

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

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

#### 5.2. Special hazards arising from the substance or mixture
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

Specific hazards
Flammable liquid and vapour. Containers can burst violently or explode when heated, due to excessive pressure build-up.

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

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

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

SECTION 6: Accidental release measures

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

For 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. Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharge.

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. Contain spillage with sand, earth or other suitable non-combustible material. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air). Risk of soil and ground water contamination.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up
Immediately start clean-up of the liquid and contaminated soil. Small Spillages: Absorb spillage with sand or other inert absorbent. 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
The product contains volatile substances which may spread in the atmosphere. Avoid heat, flames and other sources of ignition. Take precautionary measures against static discharges. Use only outdoors or in a well-ventilated area. Avoid inhalation of vapours and contact with skin and eyes. Use personal protective equipment and/or local ventilation when needed. Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions
Flammable liquid storage. Store in accordance with local regulations. Store in a demarcated bunded area to prevent release to drains and/or watercourses. Only store in correctly labelled containers. Use containers made of the following materials: Mild steel. Stainless steel.

7.3. Specific end use(s)
Specific end use(s)
Not known.
### SECTION 8: Exposure controls/Personal protection

#### 8.1. Control parameters

**Ingredient comments**
The individual limit values can be applied for the hydrocarbons. Diesel fuel as total hydrocarbons; ACGIH TLV®-TWA (8h) 100 mg/m³ (IFV).

**PNEC**
Not available.

**Fuels, diesel (CAS: 68334-30-5)**

**DNEL**
- **Workers - Inhalation; Short term systemic effects:** 4300 mg/m³, (15 min), Aerosol
- **Workers - Inhalation; Long term systemic effects:** 68 mg/m³, (8h), Aerosol
- **Workers - Dermal; Long term systemic effects:** 2,9 mg/kg/day, (8h)
- **Consumer - Inhalation; Short term systemic effects:** 2600 mg/m³, (15 min), Aerosol
- **Consumer - Inhalation; Long term systemic effects:** 20 mg/m³, (24h), Aerosol
- **Consumer - Dermal; Long term systemic effects:** 1,3 mg/kg/day, (24h)

**Renewable hydrocarbons (diesel type fraction)**

**DNEL**
- **Workers - Inhalation; Long term systemic effects:** 147 mg/m³
- **Workers - Dermal; Long term systemic effects:** 42 mg/kg/day
- **Consumer - Inhalation; Long term systemic effects:** 94 mg/m³
- **Consumer - Dermal; Long term systemic effects:** 18 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. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

**Eye/face protection**
Spectacles.

**Hand protection**
Wear protective gloves. It is recommended that gloves are made of the following material: Nitrile rubber. Polyvinyl chloride (PVC). The breakthrough time for any glove material may be different for different glove manufacturers. Protective gloves according to standard EN 374. Change protective gloves regularly.

**Other skin and body protection**
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: Combination filter, type A2/P3. Filter must be changed often enough. Gas and combination filter cartridges suitable for intended use should be used.

**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

**Appearance**
Liquid.

**Colour**
Clear. Yellowish.

**Odour**
Hydrocarbons. Mild.

**Odour threshold**
-

**pH**
-
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

**Melting point**  
Cloud point ≤ 0°C

**Initial boiling point and range**  
150...370°C (EN ISO 3405)

**Flash point**  
≥ 55°C (EN ISO 2719)

**Upper/lower flammability or explosive limits**  
Lower flammable/explosive limit: 1 % Estimated value. Upper flammable/explosive limit: 6 % Estimated value.

**Vapour pressure**  
< 1 kPa @ 40°C

**Vapour density**  
-

**Relative density**  
~ 0,8...0,85 @ 15/4°C (EN ISO 12185)

**Solubility(ies)**  
The product has poor water-solubility. < 50 mg/l @ 20°C

**Partition coefficient**  
log Kow: > 3

**Auto-ignition temperature**  
~ 220°C Estimated value.

**Decomposition Temperature**  
-

**Viscosity**  
Kinematic viscosity ≤ 4,5 mm²/s @ 40°C (EN ISO 3104).

**Explosive properties**  
Not considered to be explosive.

**Oxidising properties**  
Does not meet the criteria for classification as oxidising.

9.2. Other information  
Not known.

### SECTION 10: Stability and reactivity

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

10.2. Chemical stability  
Stability  
Stable at normal ambient temperatures.

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.

10.5. Incompatible materials  
Materials to avoid  
Oxidising agents.

10.6. Hazardous decomposition products  
Hazardous decomposition products  
Does not decompose when used and stored as recommended.

### SECTION 11: Toxicological information

11.1. Information on toxicological effects  
Toxicological effects  
Harmful if inhaled.

Acute toxicity - inhalation  
ATE Inhalation (vapours mg/l)  
15.71
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

Skin corrosion/irritation
Fuels, diesel: Irritating to skin. (OECD 404) Renewable hydrocarbons (diesel type fraction): Not classified. (EC B4) The product irritates mucous membranes and may cause abdominal discomfort if swallowed. May cause respiratory irritation.

Serious eye damage/irritation
Based on available data the classification criteria are not met. (OECD 405, EC B5)

Skin sensitisation
Based on available data the classification criteria are not met. (OECD 406, EC B6)

Germ cell mutagenicity
Based on available data the classification criteria are not met. (OECD 471, EC B10, B13/14, B17)

Genotoxicity - in vitro
Based on available data the classification criteria are not met. Fuels, diesel: (OECD 475)

Genotoxicity - in vivo
Based on available data the classification criteria are not met. Fuels, diesel: Product may contain cracked gas oil streams. Contains a substance/a group of substances which may cause cancer.

Carcinogenicity
Suspected of causing cancer. Fuels, diesel: Product may contain cracked gas oil streams.

Reproductive toxicity
Based on available data the classification criteria are not met. Renewable hydrocarbons (diesel type fraction): (OECD 416)

Reproductive toxicity - development
Based on available data the classification criteria are not met. Fuels, diesel: (OECD 414)

Specific target organ toxicity - single exposure
STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure Fuels, diesel: May cause damage to organs through prolonged or repeated exposure. (OECD 410, 411, 413) Renewable hydrocarbons (diesel type fraction): Not classified. (OECD 408)

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.

Fuels, diesel

Acute toxicity - oral
Notes (oral LD50) LD50 > 5000 mg/kg, Oral, Rat (OECD 401, 420)

Acute toxicity - dermal
Notes (dermal LD50) LD50 > 4300 mg/kg, Dermal, Rabbit (OECD 434)

Acute toxicity - inhalation
Notes (inhalation LC50) LC50 3,6 - 5,4 mg/l, Inhalation, (4h), Rat (OECD 403)

ATE inhalation (vapours mg/l) 11.0
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

Distillates (Fischer-Tropsch), C8-26 - branched and linear

**Acute toxicity - oral**

Notes (oral LD₅₀)

LD₅₀ > 5000 mg/kg, Oral, Rat

**Acute toxicity - dermal**

Notes (dermal LD₅₀)

LD₅₀ > 2000 mg/kg, Dermal, Rat

**Renewable hydrocarbons (diesel type fraction)**

**Acute toxicity - oral**

Notes (oral LD₅₀)

LD₅₀ >2000 mg/kg, Oral, Rat (EC B1 tris)

**Acute toxicity - dermal**

Notes (dermal LD₅₀)

LD₅₀ > 2000 mg/kg, Dermal, Rat (EC B3)

### SECTION 12: Ecological information

#### 12.1. Toxicity

Toxic to aquatic life with long lasting effects.

**Ecological information on ingredients.**

**Fuels, diesel**

**Acute aquatic toxicity**

**Acute toxicity - fish**

LL₅₀, 96 hours: 21 mg/l, Oncorhynchus mykiss (Rainbow trout)

NOEL, 96 hours: 10 mg/l, Oncorhynchus mykiss (Rainbow trout)

WAF (OECD 203, EC C.1)

**Acute toxicity - aquatic invertebrates**

EL₅₀, 48 hours: 68 mg/l, Daphnia magna

NOEL, 48 hours: 46 mg/l, Daphnia magna

WAF (OECD 202, EC C.2)

**Acute toxicity - aquatic plants**

EbL₅₀, 72 hours: 10 mg/l, Pseudokirchneriella subcapitata

NOEL, 72 hours: 1 mg/l, Pseudokirchneriella subcapitata

WAF (OECD 201, EC C.3)

**Acute toxicity - microorganisms**

EL₅₀, 40 hours: > 1000 mg/l, Micro-organisms (wastewater sludge)

NOEL, 40 hours: 3,22 mg/l, Micro-organisms (wastewater sludge)

(QSAR)

**Chronic aquatic toxicity**

**Chronic toxicity - fish early life stage**

NOEL, 14 days: 0,08 mg/l, Oncorhynchus mykiss (Rainbow trout)

(QSAR)

**Chronic toxicity - aquatic invertebrates**

NOEL, 21 days: 0,2 mg/l, Daphnia magna

(QSAR)

**Renewable hydrocarbons (diesel type fraction)**

**Acute aquatic toxicity**

**Acute toxicity - fish**

LL₅₀, 96 hours: > 1000 mg/l,

WAF (OECD 203)

**Acute toxicity - aquatic invertebrates**

EL₅₀, 48 hours: > 100 mg/l,

WAF (OECD 202)
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

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

Acute toxicity - microorganisms
EC₅₀, 30-180 minutes: > 1000 mg/l, Micro-organisms (wastewater sludge)
(OECD 209)

Chronic aquatic toxicity
Chronic toxicity - aquatic invertebrates
NOEC, 21 days: 1 mg/l,
LOEC, 21 days: 3.2 mg/l,
WAF (OECD 211)
Sediment organisms
NOEC, 10 days: 373 mg/kg,
LOEC, 10 days: 1165 mg/kg,
LC₅₀, 10 days: 1200 mg/kg,

12.2. Persistence and degradability

Persistence and degradability
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.

Fuels, diesel

Biodegradation
Inherently biodegradable.
(OECD 301F)

Renewable hydrocarbons (diesel type fraction)

Biodegradation
Rapidly degradable
(OECD 301B).

12.3. Bioaccumulative potential

Bioaccumulative potential
Possibly bioaccumulative.

Partition coefficient
log Kow: > 3

12.4. Mobility in soil

Mobility
Evaporates slowly. The product has poor water-solubility. 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
Product causes fouling, and direct contact produces harmful effects e.g. to birds and vegetation. Adsorbed hydrocarbon residues can be harmful to sediment organisms.

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
Diesel fuel, sulphur free; Neste Pro Diesel; Neste Futura Diesel

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

Waste class
The waste code classification is to be carried out according to the European Waste Catalogue (EWC). For example: 13 07 01 fuel oil and diesel.

SECTION 14: Transport information

Sea transport notes
This cargo is considered an Energy-rich fuel and effective 1 January 2019 should be carried subject to Annex I of MARPOL, see Annex 12 of MEPC.2/Circ.24. Please also refer to MEPC.1/Circ.879 - GUIDELINES FOR THE CARRIAGE OF ENERGY-RICH FUELS AND THEIR BLENDS

14.1. UN number
UN No. (ADR/RID) 1202

14.2. UN proper shipping name
Proper shipping name (ADR/RID) UN 1202 DIESEL FUEL

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 MARINE POLLUTANT

14.6. Special precautions for user
Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Bulk (MARPOL 73/78, Annex I): Energy-rich fuels

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations
EU regulatory references for the safety data sheet:

15.2. Chemical safety assessment
A chemical safety assessment has been carried out.
## SECTION 16: Other information

### Abbreviations and acronyms used in the safety data sheet
- ACGIH = American Conference of Governmental Industrial Hygienists
- TLV = Treshold Limit Value
- TWA = Time-Weighted Average
- DNEL = Derived No-Effect Level
- PNEC = Predicted No-Effect Concentration
- WAF = Water Accommodated Fraction

### Key literature references and sources for data
- Chemical Safety Report Renewable hydrocarbons (diesel type fraction), 2016.

### Training advice
- DO NOT SIPHON PRODUCT BY MOUTH SUCTION.

### Revision comments
- Updated, sections: 2.3, 11.1, 12.6, 15.1

### Revision date
- 17/04/2023

### Supersedes date
- 22/07/2022

### SDS number
- 5634

### Hazard statements in full
- H226 Flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H332 Harmful if inhaled.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.
Exposure scenario
Use of Substance as Intermediate

Identification

Product name: Fuels, diesel
CAS number: 68334-30-5
Version number: 2020
Es reference: ES01b

1. Title of exposure scenario

Main title: Use of Substance as Intermediate
Process scope: Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Sector of use:
- SU8 Manufacture of bulk, large-scale chemicals (including petroleum products)
- SU9 Manufacture of fine chemicals

Environment

Environmental release category: ERC6a Use of intermediate
SPERC: ESVO6 SPERC 6.1a.v1

Worker

Process category:
- PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
- PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
- PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
- PROC4 Chemical production where opportunity for exposure arises
- PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
- PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
- PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- PROC15 Use as laboratory reagent.
- PROC28 Manual maintenance (cleaning and repair) of machinery

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

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 950 000 tonnes/year
Fraction of Regional tonnage used locally: 0.016
Annual site tonnage: 15 000 tonnes
Maximum daily site tonnage: 50 tonne/day

Frequency and duration of use
Use of Substance as Intermediate

Continuous release.
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

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

Emission factor - water
Release fraction to wastewater from process (initial release prior to RMM): 1.1E-04

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

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice
Common practices vary across sites, thus conservative process release estimates used.
Risk from environmental exposure is driven by freshwater sediment.

STP details
Estimated substance removal from wastewater via domestic sewage treatment: 94.6%
Removal efficiency (total): 94.6%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5.2E+04 kg/day
Assumed domestic sewage treatment plant flow (m³/day): 2000.

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

Air
Treat air emission to provide a typical removal efficiency of 80%.

Water
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 94.4 If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Prevent discharge of undissolved substance to or recover from onsite waste water.

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

Conditions and measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Product characteristics

Physical state
Liquid With potential for aerosol generation

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
Covers use at ambient temperatures. ( unless stated differently )
Use of Substance as Intermediate

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures

General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

General measures applicable to all activities Minimise exposure using measures such as contained and enclosed systems, properly designed and maintained dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure. Wear suitable coveralls to prevent exposure to the skin. Wear suitable gloves tested to EN374. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Risk management measures
Use of Substance as Intermediate

General exposures (closed systems)  
(PROC 1, PROC 2, PROC 3)  
Handle substance within a closed system.  
Sample via a closed loop or other system to avoid exposure.

General exposures (open systems)  
(PROC 4)  
Wear suitable gloves tested to EN374.  
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.  
For further specification, refer to section 8 of the SDS.

Process sampling  
(PROC 9)  
Wear suitable gloves tested to EN374.  
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.  
For further specification, refer to section 8 of the SDS.

Laboratory activities  
(PROC 15)  
No other specific measures identified.  
- Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.  
Put lids on containers immediately after use.

Bulk transfers  
(closed systems)  
(PROC 8b)  
Handle substance within a closed system.  
Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.  
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.  
For further specification, refer to section 8 of the SDS.

Bulk transfers  
(open systems)  
(PROC 8b)  
Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.  
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.  
For further specification, refer to section 8 of the SDS.

- Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.  
Ensure no splashing occurs during transfer.
Use of Substance as Intermediate

(PROC 8a, PROC 28)
Drain down and flush system prior to equipment break-in or maintenance.
Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Wear suitable coveralls to prevent exposure to the skin.
Clear spills immediately.

Storage
(PROC 1, PROC 2)
Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method
Used Petrorisk model. (Hydrocarbon Block Method)
Risk-driving RCR - air compartment driven RCR(air) ≤ 0.048
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.97

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

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

3. Exposure estimation (Health 1)

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

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. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.
# Exposure scenario

## Use as a Fuel - Industrial

### Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Fuels, diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number</td>
<td>68334-30-5</td>
</tr>
<tr>
<td>Version number</td>
<td>2020</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES12a</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.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
  - 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
  - PROC28 Manual maintenance (cleaning and repair) of machinery

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

#### Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

#### Amounts used

- Fraction of EU tonnage used in region: 0.1
- Regional use tonnage: 3 700 000 tonnes/year
- Fraction of Regional tonnage used locally: 0.4
- Annual site tonnage: 1 500 000 tonnes
- Maximum daily site tonnage: 5 000 tonne/day

#### Frequency and duration of use

- Continuous release.
- Emission days: 300 days/year

#### Other given operational conditions affecting environmental exposure

- **Emission factor - air**: Release fraction to air from process (initial release prior to RMM): 0.005
- **Emission factor - water**: Release fraction to wastewater from process (initial release prior to RMM): 1.1E-06
- **Emission factor - soil**: Release fraction to soil from process (initial release prior to RMM): 0
Use as a Fuel - Industrial

Environmental factors not influenced by risk management measures

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

**Risk management measures**

**Good practice**
Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by freshwater sediment.

**STP details**
- Estimated substance removal from wastewater via domestic sewage treatment: 94.6%
- Removal efficiency (total): 94.6%
- Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 5 200 tonne/day
- Assumed domestic sewage treatment plant flow (m³/day): 2000.

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

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

**Water**
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 94.4. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

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

**Conditions and measures related to external treatment of waste for disposal**

**Waste treatment**
Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

**Conditions and measures related to external recovery of waste**

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

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

**Product characteristics**

**Physical state**
Liquid With potential for aerosol generation

**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**
Covers use at ambient temperatures. ( unless stated differently )

**Organisational measures to prevent/limit releases, dispersion and exposure**
**Use as a Fuel - Industrial**

**Organisational measures**

General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

General measures applicable to all activities Minimise exposure using measures such as contained and enclosed systems, properly designed and maintained dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure. Wear suitable coveralls to prevent exposure to the skin. Wear suitable gloves tested to EN374. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

**Risk management measures**
Use as a Fuel - Industrial

Bulk transfers
Dedicated facility
(PROC 8b)
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Ensure no splashing occurs during transfer.

Drum/batch transfers
Dedicated facility
(PROC 8b)
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Ensure no splashing occurs during transfer.

General exposures (closed systems)
(PROC 1, PROC 2)
Handle substance within a closed system.
Sample via a closed loop or other system to avoid exposure.

Use as a fuel
(closed systems)
(PROC 16)
Handle substance within a closed system.

Equipment cleaning and maintenance
(PROC 8a, PROC 28)
Drain down and flush system prior to equipment break-in or maintenance.
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Wear suitable coveralls to prevent exposure to the skin.
Clear spills immediately.

Storage
(PROC 1, PROC 2)
Use as a Fuel - Industrial

Store substance within a closed system.

### 3. Exposure estimation (Environment 1)

<table>
<thead>
<tr>
<th>Assessment method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Petrorisk model. (Hydrocarbon Block Method)</td>
</tr>
<tr>
<td>Risk-driving RCR - air compartment driven RCR(air) ≤ 0.059</td>
</tr>
<tr>
<td>Risk-driving RCR - water compartment driven RCR(water) ≤ 0.97</td>
</tr>
</tbody>
</table>

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

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

### 3. Exposure estimation (Health 1)

<table>
<thead>
<tr>
<th>Assessment method</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated</td>
</tr>
</tbody>
</table>

### 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. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.
### Exposure scenario
Use as a Fuel - Professional

<table>
<thead>
<tr>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>CAS 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 - 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

<table>
<thead>
<tr>
<th><strong>Environmental release category</strong></th>
<th>ERC9a Widespread use of functional fluid (indoor)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPERC</strong></td>
<td>ESVOC SPERC 9.12b.v1</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>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>PROC16 Use of fuels</td>
</tr>
<tr>
<td></td>
<td>PROC28 Manual maintenance (cleaning and repair) of machinery</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th><strong>Product characteristics</strong></th>
<th>Substance is complex UVCB. Predominantly hydrophobic.</th>
</tr>
</thead>
</table>

| **Amounts used**             | Fraction of EU tonnage used in region: 0.1 |
|                             | Regional use tonnage: 6 800 000 tonnes/year |
|                             | Fraction of Regional tonnage used locally: 0.0005 |
|                             | Annual site tonnage: 3 400 tonnes |
|                             | Maximum daily site tonnage: 9.3 tonne/day |

<table>
<thead>
<tr>
<th><strong>Frequency and duration of use</strong></th>
<th>Continuous release.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emission days: 365 days/year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Other given operational conditions affecting environmental exposure</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emission factor - air</strong></td>
</tr>
<tr>
<td><strong>Emission factor - water</strong></td>
</tr>
<tr>
<td><strong>Emission factor - soil</strong></td>
</tr>
</tbody>
</table>
Use as a Fuel - Professional

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice
- Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by fresh water.

STP details
- Estimated substance removal from wastewater via domestic sewage treatment: 94.6%
- Removal efficiency (total): 94.6%
- Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 1.1E+05 kg/day
- Assumed domestic sewage treatment plant flow (m³/day): 2000.

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

Air
- Not determined.

Water
- Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 38.8. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.

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

Conditions and measures related to external treatment of waste for disposal

Waste treatment
- Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

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

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

Product characteristics

Physical state
- Liquid With potential for aerosol generation

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
- Covers use at ambient temperatures. ( unless stated differently )

Organisational measures to prevent/limit releases, dispersion and exposure
Use as a Fuel - Professional

**Organisational measures**

General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

General measures applicable to all activities Minimise exposure using measures such as contained and enclosed systems, properly designed and maintained dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure. Wear suitable coveralls to prevent exposure to the skin. Wear suitable gloves tested to EN374. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

**Risk management measures**
Use as a Fuel - Professional

Bulk transfers
Dedicated facility
(PROC 8b)
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.
- Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Ensure no splashing occurs during transfer.
- Drum/batch transfers
Dedicated facility
(PROC 8b)
Use drum pumps.
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.
- Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Ensure no splashing occurs during transfer.
- Refuelling
(PROC 8b)
Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.
For further specification, refer to section 8 of the SDS.
- Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.
Ensure no splashing occurs during transfer.
- General exposures (closed systems)
(PROC 1, PROC 2)
Handle substance within a closed system.
Sample via a closed loop or other system to avoid exposure.
- Use as a fuel
(closed systems)
(PROC 16)
Handle substance within a closed system.
- Equipment cleaning and maintenance
(PROC 8a, PROC 28)
Drain down and flush system prior to equipment break-in or maintenance.
Use as a Fuel - Professional

Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Wear suitable coveralls to prevent exposure to the skin.

Clear spills immediately.

Storage
(PROC 1, PROC 2)
Store substance within a closed system.

### 3. Exposure estimation (Environment 1)

**Assessment method**

Used Petrorisk model. (Hydrocarbon Block Method)

- Risk-driving RCR - air compartment driven RCR(air) ≤ 0.022
- Risk-driving RCR - water compartment driven RCR(water) ≤ 0.089

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

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

### 3. Exposure estimation (Health 1)

**Assessment method**

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

### 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. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.
Exposure scenario
Use as a Fuel - Consumer

Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Fuels, diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number</td>
<td>68334-30-5</td>
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<tr>
<td>Version number</td>
<td>2020</td>
</tr>
<tr>
<td>Es reference</td>
<td>ES12c</td>
</tr>
</tbody>
</table>

1. Title of exposure scenario

Main title Use as a Fuel - Consumer
Process scope Covers consumer uses in liquid fuels.
Product category PC13 Fuels.

Environment

Environmental release category ERC9a Widespread use of functional fluid (indoor)
ERC9b Widespread use of functional fluid (outdoor)
SPERC ESVOC SPERC 9.12c.v1

Non-Industrial

Product sub-category PC13_1 Liquid: automotive refuelling
CONCAWE SCED 13.3.a
PC13_4 Liquid: Garden equipment - Refuelling
CONCAWE SCED 13.4.a
PC13_6 Liquid: home space heater fuel
CONCAWE SCED 13.5.a

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

Product characteristics Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 19 000 000 tonnes/year
Fraction of Regional tonnage used locally: 0.0005
Annual site tonnage: 9 500 tonnes
Maximum daily site tonnage: 26 tonne/day

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air Release fraction to air from wide dispersive use (regional only): 0.0001
Emission factor - water Release fraction to wastewater from wide dispersive use: 0.00001
Emission factor - soil Release fraction to soil from wide dispersive use (regional only): 0.00001
Use as a Fuel - Consumer

Environmental factors not influenced by risk management measures

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

Risk management measures

STP details
- Not applicable as there is no release to wastewater.
- Estimated substance removal from wastewater via domestic sewage treatment: 94.6%
- Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: $2.3 \times 10^5$ kg/day
- Assumed domestic sewage treatment plant flow (m³/day): 2000.

Conditions and measures related to external treatment of waste for disposal

Waste treatment
- Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

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

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

Product characteristics

Physical state
- Liquid

Concentration details
- Covers concentrations up to 100 %.

Amounts used

PC13_1 Liquid: automotive refuelling
- For each use event, covers use amounts up to 44 kg.

PC13_4 Liquid: Garden equipment - Refuelling
- For each use event, covers use amounts up to 750 g.

PC13_6 Liquid: home space heater fuel
- For each use event, covers use amounts up to 3.32 kg.

Frequency and duration of use

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

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

PC13_4 Liquid: Garden equipment - Refuelling
- PC13_6 Liquid: home space heater fuel
- Covers exposure up to 0.033 hours per event.

Human factors not influenced by risk management

Potentially exposed body parts
- PC13_1 Liquid: automotive refuelling, PC13_6 Liquid: home space heater fuel:
  - Assumes that potential dermal contact is limited to palm of one hand.

PC13_4 Liquid: Garden equipment - Refuelling:
- Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands.

Other given operational conditions affecting Non-industrial exposure
Use as a Fuel - Consumer

Setting

PC13_1 Liquid: automotive refuelling: Covers outdoor use.

Other given operational conditions affecting Non-industrial exposure

General measures (skin irritants) Ensure there is no direct skin contact with product. Wash off any skin contamination immediately.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.045
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.11

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

Guidance is based on assumed operating conditions which may not be applicable to all sites, thus, scaling may be necessary to define appropriate site-specific risk management measures.

3. Exposure estimation (Health 1)

Assessment method

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

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.