

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier**

Trade name Paraffinic Diesel PD100

Company product code PD100

REACH registration number See section 3.2.

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

The uses of the chemical Distribution of Substance  
Use as a fuel

See section 16 for PROC/SU/ERC-codes for identified uses.

**1.3 Details of the supplier of the safety data sheet**

**Manufacturer, importer, other undertaking**

Street address North European Oil Trade Oy  
Urho Kekkonen katu 5C  
Postcode and post office FI-00100 Helsinki  
Post-office box P.O. Box 55  
Postcode and post office 00088 S-RYHMÄ  
Telephone number +358 10 402 7001  
E-mail address tuotelaatu@neot.fi  
Finnish Business ID (Y code) 1801056-5

**1.4 Emergency telephone number**

General emergency telephone number 112

Poison Information centre (in Finland), open 24 h daily  
PL 340 (Haartmaninkatu 4)  
00029 HUS  
(09) 471977 or (09) 4711

**SECTION 2: HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**1272/2008 (CLP)**

Asp. Tox. 1, H304  
EUH 066

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**2.2 Label elements**

1272/2008 (CLP)

GHS08



Signal word: **DANGER**

Contains: Renewable hydrocarbons (diesel type fraction); Distillates, C8-26 branched and linear

**Hazard statements**

H304 May be fatal if swallowed and enters airways.

**Precautionary statements**

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P331 Do NOT induce vomiting.

**2.3 Other hazards**

Oil mist may irritate eyes and the respiratory tract. Risk of soil and groundwater contamination.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**3.2 Hazardous ingredients**

Name of the ingredient	CAS-number	EC-number	REACH-registration number	Concentration	Classification
Renewable hydrocarbons, diesel type fraction	-	618-882-6 / 700-571-2	01-2119450077-42-XXXX / 01-2120043692-58-XXXX	0-100 %	Asp. Tox. 1, H304; EUH066
Distillates (Fischer-Tropsch), C8-26 branched and linear	848301-67-7	481-740-5	01-0000020119-75	0-100 %	Asp. Tox. 1, H304; EUH066

**3.3 Other information**

Mixture of renewable raw material diesel, petroleum product and additives.

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6): Identity outside the EU (CAS-number and name of the ingredient): Alkanes, C10-20, branched and linear, CAS 928771-01-1.

**SECTION 4: FIRST AID MEASURES****4.1 Description of first aid measures****Inhalation:**

If oil mist has been inhaled, remove victim to fresh air and obtain medical attention (risk of chemical pneumonitis).

**Skin contact:**

Remove contaminated clothing, preferably after several minutes in safety shower (evaporation of liquid may cause fire hazard). Wash the skin with plenty of water and soap. If skin irritation persists, consult a physician.

**Eye contact:**

Rinse immediately with plenty of water, also under the eyelids. Continue irrigation for at least 15 minutes while moving eyes to extreme positions. If irritation, blurred vision or other symptoms persist, consult a physician (risk of corneal injury).

**Ingestion:**

DO NOT INDUCE VOMITING. If vomiting occurs, help to keep the victim's head down so that aspiration into the lungs will not occur. Obtain medical assistance immediately (risk of aspiration into the lungs and fatal chemical pneumonia especially if nausea or irritation occurs).

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

Oil mist may irritate respiratory organs and cause fatal chemical pneumonia. The following signs and symptoms may appear and be either acute or delayed: fever, shortness of breath, chest pain, difficulty in breathing, coughing etc. Oil mist may irritate eyes.

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

Treat symptomatically. May cause fatal chemical pneumonia.

**SECTION 5: FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing agents**

Dry chemical or foam. Sand or earth are suitable in small fires. Heavy foam and water mist only for professional firefighters.

**Unsuitable extinguishing agents**

Do not use high pressure water jets for fire extinction.

**5.2 Special hazards arising from the substance or mixture**

Flammable liquid and vapour. Explosion risk due to pressure increase if product containers or tanks are subjected to fire.

Toxic or harmful gases may be formed (complex mixtures of airborne particles, gases (smoke), carbon monoxide, oxides of sulfur, organic and inorganic compounds). Carbon dioxide may be formed by incomplete burning. The product floats in water and may ignite there.

**5.3 Advice for firefighters**

Use full protective clothing and a self-contained breathing apparatus. Cool product containers and tanks near the fire with water spray from a sufficiently safe distance. Prevent entry of extinguishing media into waterways.

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

Evacuate people upwind from the spill area. Keep unnecessary and unprotected personnel from entering. Remove all ignition sources. Stop the leak if it can be done safely. Ensure effective ventilation at the leak site. The fumes are heavier than air, and may spread along ground.

Avoid contact with skin and breathing of oil mist. Use appropriate personal protection. Take precautionary measures (e.g. earthing) against static discharges.

**6.2 Environmental precautions**

Prevent spill from spreading and entry into sewers, soil and waterways. Liquid product must be contained before it contaminates sewers, soil and waterways. If the product contaminates soil, watercourses or drainage systems, inform the local authorities.

**6.3 Methods and material for containment and cleaning up**

Immediately start clean-up of the liquid product and contaminated soil. The liquid is to be collected by pumping; small volumes can be absorbed with inert materials (e.g. sand, diatomaceous earth, commercial absorbent) and collected in tightly closable containers for proper disposal. Pay attention to the fire and health hazards caused by the product. If possible, extensive leaks into water bodies should be limited by floating booms or other mechanical means. Use of dispersants should be co-ordinated with an expert; where appropriate, local authorities must approve their use.

**6.4 Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Keep away from all sources of heat or ignition. Take precautionary measures (e.g. earthing) against static discharges. Concentrations in air must be kept below any lower explosive limits.

Only use in closed systems or ensure adequate ventilation (use process enclosures or local exhaust ventilation if necessary). Avoid evaporation of the product during handling and transfers. Avoid inhalation of vapours and contact with skin, eyes or clothing. Wear appropriate personal protective equipment. Wash hands after handling the product. Do not eat, drink or smoke during handling. During tank operations follow special instructions (risk of oxygen displacement, ethers and hydrocarbons).

**7.2 Conditions for safe storage, including any incompatibilities**

Store in containers and areas suitable for the storage of combustible liquids. Small product batches are stored in tightly sealed containers impermeable to hydrocarbons. Recommended container materials or coatings: mild steel, stainless steel Do not store in unmarked containers or vessels. Store away from all sources of heat or ignition and food and drink.

Use appropriate protective structures, such as collecting pools, loading/unloading station surfacing and sewerage systems to prevent leakage into the environment.

**7.3 Specific end use(s)**

None reported.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**National occupational exposure limit values**

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

Oil mist\* 5 mg/m<sup>3</sup> (8 h) – HTP 2014/FIN**Other limit values**

Individual limit values can be applied for hydrocarbons.

\*Occupational exposure monitoring method: SFS-EN 689, NIOSH Method 5026

**DNEL**Workers:Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6 / 700-571-2), Inhalation, chronic: 147 mg/m<sup>3</sup> /day, and skin, chronic: 42 mg/kg bw /day (Long term exposure, systematic effects).General population exposed via the environment:Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6 / 700-571-2), Inhalation, chronic: 94 mg/m<sup>3</sup> , and skin, chronic: 18 mg/kg bw / day (Long term exposure, systematic effects).**PNEC**

Not determined (poorly soluble in water)

---

**8.2 Exposure controls**

---

**Appropriate engineering controls**

Handle the product in closed systems or provide sufficient ventilation. Use process enclosures or local exhaust ventilation and personal protection if necessary. Handle with proper personal and process safety. In confined space works use special controls (risk of low oxygen level and hydrocarbons).

**Eye/face protection**

Use tight-fitting safety goggles if splashing may occur or aerosol is formed. Use a face shield if necessary.

**Skin protection**

Wear appropriate antistatic protective clothing to prevent skin contact. If splashes may occur, wear chemical resistant gloves, shoes and apron.

**Hand protection**

Wear appropriate chemical-resistant, impervious protective gloves, e.g. of nitrile rubber, neoprene, PVC or Viton™. Protection index: 6 (breakthrough time > 480 min, EN374). Change protective gloves regularly in order to avoid penetration problems.

**Respiratory protection**

Filter device/Half mask/combined organic gas and vapour and particle filter (type A2-P3).

The use of filter devices should be limited to max. 2 hrs per day. Filter devices must not be used when oxygen levels are low (< 19 vol.-%). The filter has a limited lifetime and must be changed sufficiently often. If significant amounts of mist or vapour form, use supplied-air respirator. Use respiratory protection according to EN140 and EN141.

**Environmental exposure controls**

Prevent entry into sewers or the environment. Precautions must be taken against leakages by constructing collecting pools and sewerage systems as well as by surfacing the loading and unloading stations.

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

<b>Appearance</b>	Clear or yellowish, bright liquid.
<b>Odour</b>	Mild scent of hydrocarbons.
<b>Odour threshold</b>	Unknown.
<b>pH</b>	Not applicable.
<b>Melting point/freezing point</b>	Cloud point
<b>Initial boiling point and boiling range</b>	127 – 343 °C
<b>Flash point</b>	> 60 °C
<b>Evaporation rate</b>	Unknown.
<b>Flammability (solid, gas)</b>	Unknown.
<b>Upper/lower flammability or explosive limits</b>	Unknown.
<b>Vapour pressure</b>	< 1 kPa (38 °C, estimated)
<b>Vapour density</b>	Unknown.
<b>Relative density</b>	0.8 - 0.85 (water = 1)
<b>Solubility(ies)</b>	Slightly soluble in water
<b>Partition coefficient: n-octanol/water</b>	log K <sub>ow</sub> ≥ 6
<b>Auto-ignition temperature</b>	ca. 200-220 °C (estimated)
<b>Decomposition temperature</b>	Unknown.
<b>Viscosity</b>	2.6 - 5.5 mm <sup>2</sup> /s (40 °C)
<b>Explosive properties</b>	Not classified as explosive.
<b>Oxidising properties</b>	Not classified as oxidising.

**9.2 Other information**

None reported.

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity**

Not reactive under normal use and storage conditions.

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

---

**10.2 Chemical stability**

---

Chemically stable under normal storage conditions.

---

**10.3 Possibility of hazardous reactions**

---

None known.

---

**10.4 Conditions to avoid**

---

Keep away from heat and ignition sources.

---

**10.5 Incompatible materials**

---

Oxidising agents.

---

**10.6 Hazardous decomposition products**

---

None known.

---

**SECTION 11: TOXICOLOGICAL INFORMATION**

---

**11.1 Information on toxicological effects**

---

**Acute toxicity**

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

LD50, oral, rat &gt; 5,000 mg/kg

LD50, dermal, rabbit &gt; 2,000 mg/kg

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6 / 700-571-2):

LD50 (oral, rat) &gt; 2000 mg/kg (EC B1 tris)

LD50 (dermal, rat) &gt; 2000 mg/kg (EC B3)

**Skin corrosion/irritation**

Prolonged or repeated contact may cause dryness or irritation of the skin. Vapours and mist may irritate the eyes and respiratory tract.

**Respiratory or skin sensitisation**

The product is not classified as a respiratory or skin sensitiser.

**Germ cell mutagenicity, carcinogenicity and reproductive toxicity**

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6 / 700-571-2):

No mutagenic effects were observed in in vitro studies (EC B10, B13/14, B17).

The product is not classified as a reproductive toxicant (OECD 416).

**STOT-single exposure**

The product is not classified as toxic to specific target organs.

**STOT-repeated exposure**

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6 / 700-571-2):

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

No known effects (OECD 408)

**Aspiration hazard**

The product may be fatal if swallowed and enters airways. May cause fatal chemical pneumonia.

**Other information**

Ingestion may cause irritation of the gastrointestinal tract.

**SECTION 12: ECOLOGICAL INFORMATION****12.1 Toxicity****Acute toxicity**

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

Fish: LL50/96 h &gt;100 mg/l

Daphnia: EL50/48 h &gt;100 mg/l

Algae: EbL/72 h &gt;100 mg/l

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6 / 700-571-2):

Fish: LL50/96 h &gt; 1000 mg/L (WAF) (OECD 203)

Daphnia: EL50/ 48 h &gt; 100 mg/L (WAF) (OECD 202)

Algae: EL50/72 h &gt; 100 mg/L (WAF) (OECD 201)

**Long term toxicity**

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

NOEL, fish: &gt; 100 mg/l (14 days)

NOEL, shellfish: &gt;10 - &lt;100 mg/l (21 days)

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6):

Daphnia: NOEC/21 d = 1 mg/L; LOEC/21 d = 3.2 mg/L; WAF (OECD 211)

sediment: NOEC/10 d = 373 mg/kg; LOEC/10 d = 1165 mg/kg; LC50/10 d = 1200 mg/kg (OSPAR

Protocols, Part A: Sediment Bioassay, 2005)

**Toxicity to micro-organisms**

Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6):

EC50/30 min &gt; 1000 mg/L; EC50/3 h &gt; 1000 mg/L (OECD 209).

**12.2 Persistence and degradability****Biodegradability**

Readily biodegradable. (Fuels, diesel: OECD 301F, Renewable hydrocarbons (diesel type fraction, EC-no: 618-882-6/ 700-571-2): OECD 301B)

**Chemical degradability**

Unknown.

**12.3 Bioaccumulative potential**The product may be bioaccumulative (log  $K_{ow}$  > 3).**12.4 Mobility in soil**



**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

The product is slightly water-soluble and evaporates slowly from water and soil surfaces. May leach through soil and pollute groundwater.

**12.5 Results of PBT and vPvB assessment**

The product does not contain components considered persistent, bioaccumulative or toxic (PBT).  
The product does not contain components considered very persistent or very bioaccumulative (vPvB).

**12.6 Other adverse effects**

The product may stick to organisms and be lethally harmful.  
The product forms a film on the water surface, which can affect the oxygen balance and damage the organisms.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

Hazardous waste. Dispose of in accordance with local and national regulation. When handling waste, observe the hazards and take all necessary precautionary measures. Observe also labelling and information requirements.

**13.2 Waste from residues/unused products**

Empty containers may contain flammable remnants of product. Dispose of empty containers for recovery, recycling or waste.

**SECTION 14: TRANSPORT INFORMATION**

**14.1 UN-number**

1202

**14.2 UN proper shipping name**

DIESEL FUEL

**14.3 Transport hazard class(es)**

3

**14.4 Packing group**

III

**14.5 Environmental hazards**

Marine Pollutant

**14.6 Special precautions for user**

No special precautions.

**14.7 Transport in bulk according to MARPOL73/78 and the IBC Code**

Bulk (MARPOL 73/78, Annex I): Energy-rich fuels

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

**SECTION 15: REGULATORY INFORMATION**

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

**MATERIAL SAFETY DATA SHEET**

Parafinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

MSDS compiled according to Regulations (EC) No 1907/2006 REACH and amendment (EU) No 453/2010.

**15.2 Chemical safety assessment**

Chemical safety assessment has been performed for the ingredients.

**SECTION 16: OTHER INFORMATION****16.1 Changes to the previous version**

Section 14 Transport information

**16.2 Glossary of abbreviations**

CLP: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006  
HTP: Concentrations known to be hazardous  
DNEL: Derived no-effect level  
EL50: Effective level 50 % (median effective level): loading rate of the substance which kills or immobilizes 50 % of exposed organisms  
LL50: Lethal level 50 % (median lethal level): loading rate of the substance which kills 50 % of the exposed organisms

**16.3 References**

ECHA: database of registered substances  
Concentrations known to be harmful, HTP-values 2016 (Finland)

**16.5 List of relevant R and H phrases**

H304            May be fatal if swallowed and enters airways.  
EUH066        Repeated exposure may cause skin dryness or cracking

**16.7 Restrictions on use**

Identified uses, list of Exposure scenarios:

1. Distribution of Substance (renewable diesel) - Industrial
2. Formulation of renewable diesel: Fuel blends – Industrial
3. (Re-)packing of renewable diesel– Industrial
4. Use as a Fuel of renewable diesel – Professional
5. Use as a Fuel of renewable diesel – Consumer
6. Distribution of Substance (Tisleet (Fischer- Tropsch) C8-26 – branched and linear) – Industrial
7. Use as a fuel (Tisleet (Fischer- Tropsch) C8-26 – branched and linear) - Industrial

DO NOT TRY TO SUCK DIESEL OIL USING YOUR MOUTH.

**16.8 Further information**

NEOT Oy, Tuotelaatu, +358 10 402 7001, [tuotelaatu@neot.fi](mailto:tuotelaatu@neot.fi)

**MATERIAL SAFETY DATA SHEET**  
Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

# ANNEX EXTENDED MATERIAL SAFETY DATA SHEET

## Exposure scenarios 1 – 7

### AS1: Distribution of Substance (renewable diesel) - Industrial

#### 1. Title

Use of descriptor	Sector(s) of Use: SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)
	Process Categories: PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 3: Use in closed batch process (synthesis or formulation) PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC 15: Use as laboratory reagent
	Environmental Release Categories (ERC): ERC 1: Manufacture of substances
Processes, Tasks and Activities Covered	Loading (including marine vessel/barge, rail/road car and IBC loading) of substance, including its distribution and associated laboratory activities.

#### 2. Operational conditions and risk management measures

##### 2.1. Control of worker exposure

<b>Product characteristics</b>
Physical form of product: Liquid, vapour pressure < 0,5 kPa [OC3]. Kinematic viscosity < 20,5 mm <sup>2</sup> /s @ 40 °C. Vapour pressure (kPa): 87,1 Pa
Concentration of substance in product
Covers percentage substance in the product up to 100% (unless stated differently) [G13].
Frequency and duration of use
Covers daily exposures up to 8 hours (unless stated differently) [G2].
Other operational conditions affecting worker exposure

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

Assumes activities are at ambient temperature (unless stated differently) [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1].
<b>Risk Management Measures</b>

General exposures (closed systems) [CS15] Material transfer in closed lines
Outdoor [OC9].
Process sampling [CS2]
Wear suitable gloves tested to EN374 [PPE15]. Outdoor [OC9].
Laboratory activities [CS36]
Handle in a fume cupboard or under extract ventilation [E83]. Wear suitable gloves tested to EN374 [PPE15].
Bulk transfers [CS14] (closed systems) [CS107]
Wear suitable gloves tested to EN374 [PPE15]. Use vapour recovery units when necessary [A7]. Outdoor [OC9].
Equipment cleaning and maintenance [CS39]
Drain down system prior to equipment break-in or maintenance [E65]. Wear suitable gloves tested to EN374
Storage [CS67]
Transfer via enclosed lines [E52]. Store substance within a closed system [E84]. Outdoor [OC9].

**2.2. Control of environmental exposure**

<b>Product characteristics</b>
Renewable diesel is a readily biodegradable, slightly water soluble liquid of low volatility. Water solubility is 1.4E-3 mg/l at 25°C (Petrorisk); the vapour pressure is 5.1 Pa (Petrorisk); log Kow is 8.4. Not toxic to environment.
<b>Amounts used</b>
Regional tonnage: 800 ktonnes per year
Max site tonnage: 40 tonnes per year
<b>Frequency and duration of use</b>
Emission days per year: 300
<b>Environmental factors not influenced by risk management</b>
Local freshwater dilution fraction: 10 Local marine dilution fraction: 100
<b>Other Operational Conditions of use affecting environmental exposure</b>
Release fraction to air from process: 1.0E-5 Release fraction to (waste)water from process: 1.0E-7 Release fraction to soil from process (regional): 1.0E-5
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>
TCR8: Treat air emissions to provide a typical removal efficiency of 90%. TCR13: Provide onsite wastewater removal efficiency of ≥ 92.5%.
<b>Organizational measures to prevent / limit release from site</b>

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

OMS2: Do not apply industrial sludge to natural soils. OMS3: Sludge should be incinerated, contained or reclaimed.
<b>Conditions and measures related to municipal sewage treatment plant</b>
Not applicable.
<b>Conditions and measures related to external treatment of waste for disposal</b>
ETW3: Dispose of waste in accordance with environmental legislation.
<b>Conditions and measures related to external recovery of waste</b>
ETW1: Dispose of waste in accordance with environmental legislation.
<b>Other environmental control measures additional to above</b>
ENV3: Bund storage facilities to prevent soil and water pollution in the event of spillage.

### 3. Exposure estimation

#### 3.1 Health

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.2.

#### 3.2 Environment

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.

### 4. Guidance to check compliance with the exposure scenario

#### 4.1 Health

Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.2 for details of efficiencies and OC.

#### 4.2 Environment

Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.

**MATERIAL SAFETY DATA SHEET**  
Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

# AS2: Formulation of renewable diesel: fuel blends - Industrial

## 1. Title

Use of descriptor	Sector(s) of Use: SU 10: Formulation [mixing] of preparations and/or repackaging (excluding alloys)
	Process Categories PROC: PROC 2: Use in closed, continuous process with occasional controlled exposure PROC 3: Use in closed batch process (synthesis or formulation) PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC 15: Use as laboratory reagent Product Categories PC: NA
	Environmental Release Categories (ERC): ERC 2: Formulation of preparations*7
Processes, Tasks and Activities Covered	Formulation of the substance and its mixtures in closed batch or continuous operations, including storage, materials transfers, mixing, maintenance and associated laboratory activities.

## 2. Operational conditions and risk management measures

### 2.1. Control of worker exposure

<b>Product characteristics</b>
<b>Physical form of product:</b> Liquid, vapour pressure < 0,5 kPa [OC3]. Kinematic viscosity < 20,5 mm <sup>2</sup> /s @ 40 °C. <b>Vapour pressure (Pa):</b> 87,1 Pa
<b>Concentration of substance in product</b>
Covers percentage substance in the product up to 100% (unless stated differently) [G13].
<b>Amount used</b>
Not applicable.
<b>Frequency and duration of use</b>
Covers daily exposures up to 8 hours (unless stated differently) [G2].
<b>Human factors not influenced by risk management</b>
Not applicable.
<b>Other operational conditions affecting worker exposure</b>
Assumes activities are at ambient temperature (unless stated differently) [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1].
<b>Risk Management Measures</b>
<b>General exposures (closed systems) [CS15] with sampling</b>
No specific measures identified [E118].

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

<b>Mixing operations (closed systems) [CS29]</b>
Transfer via enclosed lines [E52]. Outdoor [OC9].
<b>Process sampling [CS2]</b>
Wear suitable gloves tested to EN374 [PPE15]. Outdoor [OC9].
<b>Bulk transfers [CS14] (closed systems) [CS107]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Laboratory activities [CS36]</b>
Handle in a fume cupboard or under extract ventilation [E83]. Wear suitable gloves tested to EN374 [PPE15].
<b>Equipment cleaning and maintenance [CS39]</b>
Drain down system prior to equipment break-in or maintenance [E65]. Wear suitable gloves tested to EN374 [PPE15]. All waste product is assumed to be collected and returned for re-processing or use as a fuel [ENVT8].
<b>Storage [CS67]</b>
Store substance within a closed system [E84]. Transfer via enclosed lines [E52].

**2.2. Control of environmental exposure**

<b>Product characteristics</b>
Renewable diesel is a readily biodegradable, slightly water soluble liquid of low volatility. Water solubility is 1.4E-3 mg/l at 25°C (Petrorisk); the vapour pressure is 5.1 Pa (Petrorisk); log Kow is 8.4. Not toxic to environment.
<b>Amounts used</b>
Regional tonnage: 672 ktonnes per year
Max site tonnage: 30 ktonnes per year
Fraction of main source: 0.1
<b>Frequency and duration of use</b>
Emission days per year: 300
<b>Environmental factors not influenced by risk management</b>
Local freshwater dilution fraction: 10
Local marine dilution fraction: 100
<b>Other Operational Conditions of use affecting environmental exposure</b>
Release fraction to air from process: 0.0025
Release fraction to wastewater from process: 5.0E-6
Release fraction to soil from process (regional): 1.0E-4
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>
TCR8: Treat air emissions to provide a typical removal efficiency of 0%. TCR13: Provide onsite wastewater removal efficiency of ≥ 92.5%.

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

<b>Organizational measures to prevent / limit release from site</b>
OMS2: Do not apply industrial sludge to natural soils. OMS3: Sludge should be incinerated, contained or reclaimed.
<b>Conditions and measures related to municipal sewage treatment plant</b>
Not applicable.
<b>Conditions and measures related to external treatment of waste for disposal</b>
ETW3: Dispose of waste in accordance with environmental legislation.
<b>Conditions and measures related to external recovery of waste</b>
ETW1: Dispose of waste in accordance with environmental legislation
<b>Other environmental control measures additional to above</b>
ENV3: Bund storage facilities to prevent soil and water pollution in the event of spillage.

### 3. Exposure estimation

#### 3.1 Health

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.3.

#### 3.2 Environment

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.

### 4. Guidance to check compliance with the exposure scenario

#### 4.1 Health

Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.3 for details of efficiencies and OC.

#### 4.2 Environment

Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.



**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**AS3: (Re-)packing of renewable diesel - Industrial**

**1. Title**

Use of descriptor	Sector(s) of Use: SU 10: Formulation [mixing] of preparations and/or repackaging (excluding alloys)
	Process Categories: PROC 1: Use in closed process, no likelihood of exposure PROC 3: Use in closed batch process (synthesis or formulation) PROC 8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC 8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC 9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC 15: Use as laboratory reagent Product Categories PC: NA
	Environmental Release Categories (ERC): ERC 7: Industrial use of substances in closed systems
Processes, Tasks and Activities Covered	Packing and re-packing of the substance in batch operations, including storage, materials transfers, large and small scale packing, maintenance and associated laboratory activities.

**2. Operational conditions and risk management measures**

**2.1. Control of worker exposure**

<b>Product characteristics</b>
<b>Physical form of product:</b> Liquid, vapour pressure < 0,5 kPa [OC3]. Kinematic viscosity < 20,5 mm <sup>2</sup> /s @ 40 °C. <b>Vapour pressure (Pa):</b> 87,1 Pa
<b>Concentration of substance in product</b>
Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
<b>Frequency and duration of use</b>
Covers daily exposures up to 8 hours (unless stated differently) [G2].
<b>Other operational conditions affecting worker exposure</b>
Assumes activities are at ambient temperature (unless stated differently) [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1].
<b>Risk Management Measures</b>
<b>Process sampling [CS2]</b>
Wear suitable gloves tested to EN374 [PPE15].

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

<b>Laboratory activities [CS36]</b>
Handle in a fume cupboard or under extract ventilation [E83]. Wear suitable gloves tested to EN374 [PPE15].
<b>Bulk transfers [CS14] (closed systems) [CS107] Closed line transfer of product to storage tanks</b>
Ensure material transfers are under containment or extract ventilation [E66]. Wear suitable gloves tested to EN374 [PPE15].
<b>Drum/Batch transfers [CS8]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Drum and small packagefilling [CS6]</b>
Fill containers/cans at dedicated fill points supplied with local extract ventilation [E51]. Wear suitable gloves tested to EN374 [PPE15].
<b>Equipment cleaning and maintenance [CS39]</b>
Drain down system prior to equipment break-in or maintenance [E65]. Wear suitable gloves tested to EN374 [PPE15]. Retain drain downs in sealed storage pending disposal or for subsequent recycle [ENVT4].
<b>Storage [CS67]</b>
Store substance within a closed system [E84]. Transfer via enclosed lines [E52]. Store finished products in closed containers (e.g., bulk tanks, drums, cans) [A5].

**2.2. Control of environmental exposure**

<b>Product characteristics</b>
Renewable diesel is a readily biodegradable, slightly water soluble liquid of low volatility. Water solubility is 1.4E-3 mg/l at 25°C (Petrorisk); the vapour pressure is 5.1 Pa (Petrorisk); log Kow is 8.4. Not toxic to environment.
<b>Amounts used</b>
Regional tonnage: 40 ktonnes per year
Max site tonnage: 4 ktonnes per year
Fraction of main source: 0.1
<b>Frequency and duration of use</b>
Emission days per year: 300
<b>Environmental factors not influenced by risk management</b>
Local freshwater dilution fraction: 10
Local marine dilution fraction: 100
<b>Other Operational Conditions of use affecting environmental exposure</b>
Release fraction to air from process: 2.5E-3
Release fraction to wastewater from process: 5.0E-6
Release fraction to soil from process (regional): 1.0E-4
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>
TCLR8: Treat air emissions to provide a typical removal efficiency of 0%. STP 4: Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs is 92.5%.
<b>Organisation measures to prevent/limit release from site</b>
OMS2: Do not apply industrial sludge to natural soils. OMS3: Sludge should be incinerated, contained or reclaimed.

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

<b>Conditions and measures related to municipal sewage treatment plant</b>
STP7: Assumed domestic sewage treatment plant effluent flow is 2000 m3/d. STP3: Estimated substance removal from wastewater via domestic sewage treatment is 92.5%.
<b>Conditions and measures related to external treatment of waste for disposal</b>
ETW3: Dispose of waste in accordance with environmental legislation.
<b>Conditions and measures related to external recovery of waste</b>
ETW1: Dispose of waste in accordance with environmental legislation
<b>Other environmental control measures additional to above</b>
ENV3: Bund storage facilities to prevent soil and water pollution in the event of spillage.

### 3. Exposure estimation

#### 3.1. Health

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.5.

#### 3.2. Environment

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.

### 4. Guidance to check compliance with the exposure scenario

#### 4.1. Health

Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.5 for details of efficiencies and OC.

#### 4.2. Environment

Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.

**MATERIAL SAFETY DATA SHEET**  
Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**AS4: Use as a Fuel of renewable diesel – Professional**

**1. Title**

Use of descriptor	Sector(s) of Use: Professional (SU22).
	Process Categories: PROC1,2,8a,8b,16
	Environmental Release Categories (ERC): 8b, 8e
Processes, Tasks and Activities Covered	Covers the use as a fuel and includes activities associated with its transfer, use, storage, maintenance and handling of waste.

**2. Operational conditions and risk management measures**

**2.1. Control of worker exposure**

<b>Product characteristics</b>
Physical form of product: Liquid Vapour pressure (kPa): Liquid, vapour pressure < 0,5 kPa [OC3]. Kinematic viscosity < 20,5 mm <sup>2</sup> /s @ 40 °C. Vapour pressure: 87,1 Pa
<b>Concentration of substance in product</b>
Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
<b>Frequency and duration of use</b>
Covers daily exposures up to 8 hours (unless stated differently) [G2].
<b>Other operational conditions affecting worker exposure</b>
Assumes activities are at ambient temperature (unless stated differently) [G17]. Assumes a good basic standard of occupational hygiene is implemented [G1].
<b>Specific Risk Management Measures and Operational Conditions</b>
<b>Bulk transfers [CS14] heating oil and diesel deliveries [CS62]:</b> Handle substance within a closed system [E47]. Wear suitable gloves tested to EN374 [PPE15]. <b>Filling / preparation of equipment from drums or containers [CS45]:</b> Use drum pumps or carefully pour from container [E64]. Wear suitable gloves tested to EN374 [PPE15].

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

**Refuelling vehicles, aircraft or marine:** Use drum pumps or carefully pour from container [E64]. Wear suitable gloves tested to EN374 [PPE15]. Use vapour recovery units when necessary [A7].

**General exposures (closed systems) [CS15]:** No specific measures identified [E118].

**General exposures (open systems) [CS16] (closed systems) [CS107]:** No specific measures identified [E118].

**Equipment cleaning and maintenance [CS39] :** Drain down and flush system prior to equipment break-in or maintenance [E55]. Wear suitable gloves tested to EN374 [PPE15]. Retain drain downs in sealed storage pending disposal or for subsequent recycle [ENVT4].

**Vessel / container cleaning [CS103]:** Drain down system prior to equipment break-in or maintenance [E65]. Retain drain downs in sealed storage pending disposal or for subsequent recycle [ENVT4]. Provide enhanced general ventilation by mechanical means [E48]. If above technical/organisational control measures are not feasible, then adopt following PPE [PPE30]: Wear positive pressure air supplied respirator if required by safe entry procedures [PPE31]. Wear suitable gloves tested to EN374 [PPE15]. Wear suitable coveralls to prevent exposure to the skin [PPE27].

**Storage [CS67]:** Store substance within a closed system [E84].

**2.2. Control of environmental exposure**

Product characteristics
Readily biodegradable, slightly water soluble liquid of low volatility.
Amounts used
Regional tonnage: 89 ktonnes per year
Fraction of main source: 0.1
Maximum site tonnage: 4.45 ktonnes per year
Frequency and duration of use
Emission days per year: 365
Environmental factors not influenced by risk management
Local freshwater dilution fraction: 10
Local marine dilution fraction: 100
Other Operational Conditions of use affecting environmental exposure
Release fraction to air from process (regional): 1.0E-4
Release fraction to wastewater from process (regional): 1.0E-5
Release fraction to soil from process (regional): 1.0E-5
Conditions and measures related to municipal sewage treatment plant
STP7: Assumed domestic sewage treatment plant effluent flow is 2000 m3/d.
STP3: Estimated substance removal from wastewater via domestic sewage treatment is 92.5%.

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

<b>Conditions and measures related to external treatment of waste for disposal</b>
ETW3: Dispose of waste in accordance with environmental legislation.
<b>Conditions and measures related to external recovery of waste</b>
ETW1: Dispose of waste in accordance with environmental legislation
<b>Organisation measures to prevent/limit release from site</b>
Not applicable.
<b>Assessment method: petrorisk</b>

### 3. Exposure estimation

#### 3.1 Health

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.7.

#### 3.2 Environment

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.

### 4. Guidance to check compliance with the exposure scenario

#### 4.1 Health

Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.7 for details of efficiencies and OC.

#### 4.2 Environment

Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.

**MATERIAL SAFETY DATA SHEET**  
Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

## AS5: Use as a fuel of renewable diesel - Consumer

### 1. Title

Use of descriptor	Sector(s) of Use: Consumer (SU21) Product categories: PC 13: Fuels
	Process Categories: PROC1, PROC3, PROC5, PROC8a, PROC8b
	Environmental Release Categories (ERC): 8e, 8b
Processes, Tasks and Activities Covered	Covers the use as a fuel and includes activities associated with its transfer, use, storage, maintenance and handling of waste.

### 2. Operational conditions and risk management measures

#### 2.1. Control of consumer exposure

<b>Product characteristics</b>
<b>Physical form of product:</b> Liquid <b>Vapour pressure (kPa):</b> Liquid, vapour pressure < 0,5 kPa [OC3]. Kinematic viscosity < 20,5 mm <sup>2</sup> /s @ 40 °C.
<b>Concentration of substance in product</b>
Unless otherwise stated, cover concentrations up to 100% [ConsOC1]
<b>Frequency and duration of use</b>
Covers exposure up to 2 hours per event (unless stated differently) [ConsOC14]
<b>Other operational conditions affecting exposure</b>
Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m <sup>3</sup> room [ConsOC11]; assumes use with typical ventilation [ConsOC8].
<b>2.1.1. Product categories</b>
<b>PC13:Fuels--Liquid –subcategories added: Automotive Refuelling:</b> OC: Unless otherwise stated, covers concentrations up to 100% [ConsOC1]; covers use up to 52 days/year[ConsOC3]; covers use up to 1 time/on day of use[ConsOC4]; covers skin contact area up to 210,00 cm <sup>2</sup> [ConsOC5]; for each use event, covers use amounts up to 38600g [ConsOC2]; covers outdoor use [ConsOC12]; covers use in room size of 100m <sup>3</sup> [ConsOC11]; for each use event, covers exposure up to 0,05hr/event[ConsOC14];  RMM: No specific RMMs developed beyond those OCs stated

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

**2.2. Control of environmental exposure**

<b>Product characteristics</b>
Substance is a readily biodegradable, slightly water soluble liquid of low volatility.
<b>Amounts used</b>
Fraction of main source: 0.1
Regional tonnage: 55.7 ktonnes per year
Maximum site tonnage: 2.79 tonnes per year
<b>Frequency and duration of use</b>
Emission days per year: 365
<b>Environmental factors not influenced by risk management</b>
Local freshwater dilution fraction: 10
Local marine dilution fraction: 100
<b>Other Operational Conditions of use affecting environmental exposure</b>
Release fraction to air from process (regional): 1.0E-4
Release fraction to wastewater from process (regional): 1.0E-5
Release fraction to soil from process (regional): 1.0E-5
<b>Conditions and measures related to municipal sewage treatment plant</b>
STP7: Assumed domestic sewage treatment plant effluent flow is 2000 m <sup>3</sup> /d.
STP3: Estimated substance removal from wastewater via domestic sewage treatment is 92.5%.
<b>Conditions and measures related to external treatment of waste for disposal</b>
ETW3: Dispose of waste in accordance with environmental legislation.
<b>Conditions and measures related to external recovery of waste</b>
ETW1: Dispose of waste in accordance with environmental legislation.

**3. Exposure estimation**

**3.1 Health**

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.8.

**3.2 Environment**

When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.



**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

---

## **4. Guidance to check compliance with the exposure scenario**

### **4.1 Health**

Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.8 for details of efficiencies and OC.

### **4.2 Environment**

Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 92.5% which would be typically found in waste-water treatment plant.

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

## AS 6. Distribution of Substance (Tisleet (Fischer- Tropsch) C8-26 – branched and linear) - Industrial

### 1. Title

Use of descriptor	Sector(s) of Use: Industrial (SU3).
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15
	Environmental Release Categories (ERC): 1, 2, 3, 4, 5, 6a, 6b, 6c, 7
	Specific Environmental Release Category: ESVOC SpERC 1.1b.v1
Processes, Tasks and Activities Covered	Bulk 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, maintenance and associated laboratory activities.

### 2. Operational conditions and risk management measures

#### 2.1 Control of worker exposure

<b>Product characteristics</b>
<b>Physical form of product:</b> Liquid With potential for aerosol generation <b>Vapour pressure (kPa):</b> Liquid, vapour pressure <0.5 kPa at STP [OC3].
<b>Concentration of substance in product</b>
Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
<b>Frequency and duration of use</b>
Covers daily exposures up to 8 hours (unless stated differently) [G2].
<b>Other operational conditions affecting worker exposure</b>
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene is implemented [G1].
<b>Specific Risk Management Measures and Operational Conditions</b>
<b>General measures applicable to all activities [CS135]</b>
Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions [G25].

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

<b>General measures (skin irritants) [G19]</b>
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop [E3].
<b>General exposures (closed systems) [CS15]</b>
Handle substance within a closed system [E47].
<b>General exposures (open systems) [CS16]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Process sampling [CS2]</b>
No other specific measures identified [E120].
<b>Laboratory activities [CS36]</b>
No other specific measures identified [E120].
<b>Bulk closed loading and unloading [CS501]</b>
Handle substance within a closed system [E47]. Wear suitable gloves tested to EN374 [PPE15].
<b>Bulk open loading and unloading [CS503]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Drum and small pack filling [CS6]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Equipment cleaning and maintenance [CS39]</b>
Drain down system prior to equipment break-in or maintenance [E65]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
<b>Storage [CS67]</b>
Handle substance within a closed system [E84].

## 2.2 Control of environmental exposure

<b>Product characteristics</b>
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].
<b>Amounts used</b>
Fraction of EU tonnage used in region: 0.1
Regional tonnage: 2.8 e <sup>7</sup> tonnes per year
Fraction of Regional tonnage used locally: 0.002
Annual site tonnage: 5.6 e <sup>4</sup> tonnes per year
Maximum daily site tonnage: 0.19 kilotonnes per day
<b>Frequency and duration of use</b>
Continuous release [FD2].
Emission days per year: 300
<b>Environmental factors not influenced by risk management</b>
Local freshwater dilution fraction: 10

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

Local marine dilution fraction: 100
<b>Other Operational Conditions of use affecting environmental exposure</b>
Release fraction to air from process (initial release prior to RMM): 0.001 Release fraction to wastewater from process (initial release prior to RMM): 0.000001 Release fraction to soil from process (initial release prior to RMM): 0.00001
<b>Technical condition and measures at process level (source) to prevent release</b>
TCS 1: Common practices vary across sites thus conservative process release estimates used.
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>
TCR1j: Risk from environmental exposure is driven by human via indirect exposure (primarily ingestion). TCR14: Prevent discharge of undissolved substance to or recover from onsite wastewater. TCR6: No wastewater treatment required. Treat air emission to provide a typical removal efficiency of 90 %. Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency $\geq 0$ %. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of $\geq 0$ %.
<b>Organizational measures to prevent / limit release from site</b>
Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].
<b>Conditions and measures related to municipal sewage treatment plant</b>
Estimated substance removal from wastewater via domestic sewage treatment 94.1 %.
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 94.1 %.
Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal 2.9 kilotonnes per day.
Assumed domestic sewage treatment plant flow 2000 m <sup>3</sup> /day.
<b>Conditions and measures related to external treatment of waste for disposal</b>
ETW3: External treatment and disposal of waste should comply with applicable regulations.
<b>Conditions and measures related to external recovery of waste</b>
ERW1: External recovery and recycling of waste should comply with applicable regulations.

### 3. Exposure estimation

#### 3.1 Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21].

#### 3.2 Environment

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

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

---

## **4. Guidance to check compliance with the exposure scenario**

### **4.1 Health**

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels [G23]. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32]. Available hazard data do not support the need for a DNEL to be established for other health effects [G36]. Risk Management Measures are based on qualitative risk characterisation [G37].

### **4.2 Environment**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC. Factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>) [DSU4].

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

## AS 7. Use as a Fuel (Tisleet (Fischer- Tropsch) C8-26 – branched and linear) - Industrial

### 1 Title

Use of descriptor	Sector(s) of Use: Industrial (SU3).
	Process Categories PROC: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16
	Environmental Release Categories (ERC): 7
	Specific Environmental Release Category: ESVOC SpERC 7.12a.v1
Processes, Tasks and Activities Covered	Covers the use as a fuel (or fuel additives and additive components) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

## 2 Operational conditions and risk management measures

### 2.1 Control of worker exposure

<b>Product characteristics</b>
<b>Physical form of product:</b> Liquid With potential for aerosol generation [CS138] <b>Vapour pressure (kPa):</b> Liquid, vapour pressure <0.5 kPa at STP [OC3].
<b>Concentration of substance in product</b>
Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
<b>Frequency and duration of use</b>
Covers daily exposures up to 8 hours (unless stated differently) [G2].
<b>Other operational conditions affecting worker exposure</b>
Assumes use at not more than 20 °C above ambient temperature, unless stated differently [G15]. Assumes a good basic standard of occupational hygiene is implemented [G1].
<b>Specific Risk Management Measures and Operational Conditions</b>
<b>General measures applicable to all activities [CS135]</b>
Control any potential exposure using measures such as contained systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of exposure potential and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; provide regular health surveillance as appropriate; identify and implement corrective actions [G25].
<b>General measures (skin irritants) [G19]</b>
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin

**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop [E3].
<b>Use as a fuel (closed systems) [GEST_12I, CS107]</b>
No other specific measures identified [E120].
<b>Bulk transfers [CS14]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Drum/batch transfers [CS8]</b>
Wear suitable gloves tested to EN374 [PPE15].
<b>Equipment cleaning and maintenance [CS39]</b>
Drain down system prior to equipment break-in or maintenance [E65]. Wear chemically resistant gloves (tested to EN374) in
<b>Storage [CS67]</b>
Handle substance within a closed system [E84].

## 2.2 Control of environmental exposure

<b>Product characteristics</b>
Substance is complex UVCB [PrC3]. Predominantly hydrophobic [PrC4a].
<b>Amounts used</b>
Fraction of EU tonnage used in region: 0.1
Regional tonnage: 4500 kilotonnes per year
Fraction of Regional tonnage used locally: 0.34
Annual site tonnage: 1500 kilotonnes per year
Maximum daily site tonnage: 5 kilotonnes per day
<b>Frequency and duration of use</b>
Continuous release [FD2].
Emission days per year: 300
<b>Environmental factors not influenced by risk management</b>
Local freshwater dilution fraction: 10
Local marine dilution fraction: 100
<b>Other Operational Conditions of use affecting environmental exposure</b>
Release fraction to air from process (initial release prior to RMM): 0.005
Release fraction to wastewater from process (initial release prior to RMM): 0.00001
Release fraction to soil from process (initial release prior to RMM): 0
<b>Technical condition and measures at process level (source) to prevent release</b>
TCS 1: Common practices vary across sites thus conservative process release estimates used.
<b>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</b>
TCR1b: Risk from environmental exposure is driven by freshwater sediment
TCR9: If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Treat air emission to provide a typical removal efficiency of 95 %.

## MATERIAL SAFETY DATA SHEET

Paraffinic Diesel PD100

Date: 01.01.2019

Former date: 31.08.2017

Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency  $\geq 97.7\%$ . If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of  $\geq 60.4\%$ .

### Organizational measures to prevent / limit release from site

Prevent discharge of undissolved substance to or recover from wastewater [OMS1]. Do not apply industrial sludge to natural soils [OMS2]. Sludge should be incinerated, contained or reclaimed [OMS3].

### Conditions and measures related to municipal sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment 94.1 %.

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs 97.7 %.

Maximum allowable site tonnage ( $M_{Safe}$ ) based on release following total wastewater treatment removal 5000 tonnes per day.

Assumed domestic sewage treatment plant flow 2000 m<sup>3</sup>/day.

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

ETW1: Combustion emissions limited by required exhaust emission controls.

ETW2: Combustion emissions considered in regional exposure assessment.

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

ERW1: External recovery and recycling of waste should comply with applicable regulations.

## 3 Exposure estimation

### 3.1 Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21].

### 3.2 Environment

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

## 4 Guidance to check compliance with the exposure scenario

### 4.1 Health

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

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects [G32]. Available hazard data do not support the need for a DNEL to be established for other health effects [G36]. Risk Management Measures are based on qualitative risk characterisation [G37].



**MATERIAL SAFETY DATA SHEET**

Paraffinic Diesel PD100

**Date:** 01.01.2019

**Former date:** 31.08.2017

---

## 4.2 Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures [DSU1]. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2]. Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3]. Further details on scaling and control technologies are provided in SpERC. Factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>) [DSU4].