

SAFETY DATA SHEET

According to EC No 1907/2006 as amended as at the date of this SDS

BC HVO Biodiesel

| | | | |
|---------|----------------|--------------|--------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 16.08.2023 |
| 1.2 | 03.01.2025 | 800010060375 | Print Date 10.01.2025 |

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

1.1 Product identifier

| | |
|------------------------|---|
| Trade name | : BC HVO Biodiesel |
| Product code | : X3605, X3462 |
| Registration number EU | : 01-2119450077-42 |
| Synonyms | : Renewable Hydrocarbons (Diesel Type Fraction) |
| CAS-No. | : 928771-01-1 |
| EC-No. | : 700-571-2 |

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

| | |
|------------------------------|---|
| Use of the Substance/Mixture | : Fuel for use in diesel powered engines. Please refer to section 16 and/or the annexes for the registered uses under REACH. |
| Uses advised against | : This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier. |

1.3 Details of the supplier of the safety data sheet

| | |
|-------------------------------|---|
| Manufacturer/Supplier | : Shell Chemicals Europe B.V. PO Box 2334 3000 CH Rotterdam Netherlands |
| Telephone | : +31 (0)10 441 5137 / +31 (0)10 441 5191 |
| Telefax | : +31 (0)20 716 8316 / +31 (0)20 713 9230 |
| Contact for Safety Data Sheet | : sccmsds@shell.com |

1.4 Emergency telephone number

+44 (0) 1235 239 670
National Poison Information Centre (NVIC): Tel. nr. +31(0)88 755 8000 (24 hrs a day and 7 days a week).
Only for the purpose of informing medical personnel.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|-------------------------------|---|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Aspiration hazard, Category 1 | H304: May be fatal if swallowed and enters air- |

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ways.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :
PHYSICAL HAZARDS:
H226 Flammable liquid and vapour.
HEALTH HAZARDS:
H304 May be fatal if swallowed and enters airways.
ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take action to prevent static discharges.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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Slightly irritating to respiratory system.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea.
May ignite on surfaces at temperatures above auto-ignition temperature.
Vapour in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature, where vapour concentrations are within the flammability range.
Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire.
This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical nature : A mixture of hydrocarbons, containing straight and branched alkanes produced by synthesis from biomass and subsequent hydrotreatment.

Product is not a mixture according to regulation 1907/2006/EC.

Components

| Chemical name | CAS-No. EC-No. | Concentration (% w/w) |
|--|--------------------------|-----------------------|
| Renewable hydrocarbons, diesel type fraction (Alkanes, C10-20-branched and linear) | 928771-01-1 700-571-2 | 100 |

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal conditions.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with wa-

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- ter and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.
- In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.
- If swallowed : Call emergency number for your location / facility.
If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Not considered to be an inhalation hazard under normal conditions of use.
Possible respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
- No specific hazards under normal use conditions.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.
- No specific hazards under normal use conditions.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
- If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.
- Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.
Call a doctor or poison control center for guidance.
Potential for chemical pneumonitis.
Do not induce vomiting.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide.
Unidentified organic and inorganic compounds.
Carbon monoxide may be evolved if incomplete combustion occurs.
Will float and can be reignited on surface water.
Flammable vapours may be present even at temperatures below the flash point.

5.3 Advice for firefighters

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Keep adjacent containers cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : 6.1.2 For emergency responders:
Do not breathe fumes, vapour.
Do not operate electrical equipment.
6.1.1 For non emergency personnel:
Do not breathe fumes, vapour.
Do not operate electrical equipment.

6.2 Environmental precautions

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use ap-

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appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet., Notify authorities if any exposure to the general public or the environment occurs or is likely to occur., Local authorities should be advised if significant spillages cannot be contained., Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Air-dry contaminated clothing in a well-ventilated area before laundering.

Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Prevent spillages.

Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.

Never siphon by mouth.

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Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. For comprehensive advice on handling, product transfer, storage and tank cleaning refer to the product supplier.

Maintenance and Fuelling Activities - Avoid inhalation of vapours and contact with skin.

Advice on safe handling : Ensure that all local regulations regarding handling and storage facilities are followed.
Avoid inhaling vapour and/or mists.
Avoid prolonged or repeated contact with skin.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Bulk storage tanks should be diked (bunded).
When using do not eat or drink.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.
Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges.
These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements.
These activities may lead to static discharge e.g. spark formation.
Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling.
Do NOT use compressed air for filling, discharging, or handling operations.

Product Transfer : Avoid splash filling Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Keep containers closed when not in use. Do not use compressed air for filling discharge or handling. Contamination resulting from product transfer may give rise to light hydrocarbon vapour in the headspace of tanks that have previously contained gasoline. This vapour may explode if there is a source of ignition. Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care.

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7.2 Conditions for safe storage, including any incompatibilities

Further information on storage stability : Drum and small container storage:
Drums should be stacked to a maximum of 3 high.
Use properly labeled and closable containers.
Tank storage:
Tanks must be specifically designed for use with this product.
Bulk storage tanks should be diked (bunded).
Locate tanks away from heat and other sources of ignition.
Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat.
The vapour is heavier than air. Beware of accumulation in pits and confined spaces.
Electrostatic charges will be generated during pumping.
Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.
The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.
Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

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- Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel., Aluminium may also be used for applications where it does not present an unnecessary fire hazard., Examples of suitable materials are: high density polyethylene (HDPE) and Viton (FKM), which have been specifically tested for compatibility with this product., For container linings, use amine-adduct cured epoxy paint., For seals and gaskets use: graphite, PTFE, Viton A, Viton B.
Unsuitable material: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene., However, some may be suitable for glove materials.
- Container Advice : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

7.3 Specific end use(s)

- Specific use(s) : Please refer to section 16 and/or the annexes for the registered uses under REACH.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

None established.

Biological occupational exposure limits

No biological limit allocated.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

| | |
|----------|-------------------------------------|
| Remarks: | No DNEL value has been established. |
|----------|-------------------------------------|

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

| Substance name | Environmental Compartment | Value |
|----------------|---|-------|
| Remarks: | Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances. | |

8.2 Exposure controls

Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Firewater monitors and deluge systems are recommended.

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Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

Local exhaust ventilation is recommended.

Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Do not ingest. If swallowed, then seek immediate medical assistance

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Approved to EU Standard EN166.

Hand protection

Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Nitrile rubber. Incidental contact/Splash protection: Neoprene rubber. PVC. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is

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dependent on the exact composition of the glove material. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Skin and body protection : Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. All respiratory protection equipment and use must be in accordance with local regulations.

Select a filter suitable for combined particulate/organic gases and vapours [Type A/Type P boiling point > 65°C (149°F)] meeting EN14387 and EN143.

Thermal hazards : Not applicable

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|------------------------------|----------------------|
| Physical state | : liquid |
| Colour | : colourless |
| Odour | : mild |
| Odour Threshold | : Data not available |
| Melting point/freezing point | : no data available |
| pour point | no data available |

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Initial boiling point and boiling range : 180 - 320 °C

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit : 5 %(V)

Lower explosion limit / Lower flammability limit : 0,5 %(V)

Flash point : > 55 °C
Method: Unspecified

Auto-ignition temperature : ca. 210 °C

Decomposition temperature
Decomposition temperature : Data not available

pH : Not applicable

Viscosity
Viscosity, kinematic : 2 - 4 mm²/s (40,0 °C)

Solubility(ies)
Water solubility : negligible

Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : log Pow: > 6,5

Vapour pressure : < 1 kPa (25,0 °C)
Method: Unspecified

Relative density : Data not available

Density : 780 kg/m³ (15,0 °C)

Relative vapour density : > 4

Particle characteristics
Particle size : Data not available

9.2 Other information

Oxidizing properties : Data not available

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|------------------|---|---|
| Evaporation rate | : | Data not available |
| Conductivity | : | Low conductivity: < 100 pS/m, The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semiconductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid |

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.

In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure : Inhalation is the primary route of exposure.

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Acute toxicity

Product:

| | | |
|---------------------------|---|--|
| Acute oral toxicity | : | LD50 Oral (Rat): > 5.000 mg/kg Remarks: Low toxicity |
| Acute inhalation toxicity | : | Remarks: Low toxicity if inhaled. Based on available data, the classification criteria are not met. |
| Acute dermal toxicity | : | (Rabbit): Remarks: LD50 >2000 mg/kg Low toxicity Based on available data, the classification criteria are not met. |

Skin corrosion/irritation

Product:

| | | |
|---------|---|---|
| Remarks | : | Slightly irritating to skin. Based on available data, the classification criteria are not met. |
|---------|---|---|

Serious eye damage/eye irritation

Product:

| | | |
|---------|---|--|
| Remarks | : | Slightly irritating to the eye. Based on available data, the classification criteria are not met. |
|---------|---|--|

Respiratory or skin sensitisation

Product:

| | | |
|-----------|---|--|
| Test Type | : | Skin sensitisation |
| Remarks | : | Not a sensitiser. Based on available data, the classification criteria are not met. |
| Test Type | : | Respiratory sensitisation |
| Remarks | : | Not a sensitiser. Based on available data, the classification criteria are not met. |

Germ cell mutagenicity

Product:

| | | |
|------------------------------------|---|---|
| Genotoxicity in vivo | : | Remarks: Not mutagenic. |
| Germ cell mutagenicity- Assessment | : | This product does not meet the criteria for classification in categories 1A/1B. |

Carcinogenicity

Product:

| | | |
|---------|---|--|
| Remarks | : | Not a carcinogen. Based on available data, the classification criteria are not met. |
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Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

| Material | GHS/CLP Carcinogenicity Classification |
|--|--|
| Renewable hydrocarbons, diesel type fraction (Alkanes, C10-20-branched and linear) | No carcinogenicity classification. |

Reproductive toxicity

Product:

Effects on fertility : Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Product:

Remarks : Inhalation of vapours or mists may cause irritation to the respiratory system.
High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea.

STOT - repeated exposure

Product:

Remarks : Repeated exposure may cause skin dryness or cracking.

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

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levels of 0.1% or higher.

Further information

Product:

Remarks : Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to algae/aquatic plants : Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity) : Remarks: NOEC/NOEL > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: NOEC/NOEL > 10 - <=100 mg/l

Toxicity to microorganisms :
Remarks: LL/EL/IL50 > 100 mg/l
Practically non toxic:
Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable.

Remarks: Not Persistent per IMO criteria.
International Oil Pollution Compensation (IOPC) Fund definition:
"A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340°C (645°F) and (b) at least 95% of which, by volume, distills at a temperature of 370°C (700°F) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

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12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains constituents with the potential to bioaccumulate.

12.4 Mobility in soil

Product:

Mobility : Remarks: Large volumes may penetrate soil and could contaminate groundwater., Floats on water., Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : Films formed on water may affect oxygen transfer and damage organisms.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses.
Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

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Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand. MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging : Send to drum recoverer or metal reclaimer.
Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard if heated above the flash point. Do not puncture, cut or weld uncleaned drums. Do not pollute the soil, water or environment with the waste container.
Comply with any local recovery or waste disposal regulations.

Local legislation
Waste catalogue : EU Waste Disposal Code (EWC):

Remarks : 13 07 01* fuel oil and diesel.
The number given to waste is associated with the appropriate usage. The user must decide if their particular use results in another waste code being assigned.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|------|--------|
| ADN | : 1202 |
| ADR | : 1202 |
| RID | : 1202 |
| IMDG | : 1202 |
| IATA | : 1202 |

14.2 UN proper shipping name

| | |
|------|---------------|
| ADN | : DIESEL FUEL |
| ADR | : DIESEL FUEL |
| RID | : DIESEL FUEL |
| IMDG | : DIESEL FUEL |
| IATA | : DIESEL FUEL |

14.3 Transport hazard class(es)

| | |
|-----|-----|
| ADN | : 3 |
| ADR | : 3 |
| RID | : 3 |

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IMDG : 3
IATA : 3

14.4 Packing group

ADN
Packing group : III
Classification Code : F1
Labels : 3 (F)

ADR
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

RID
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG
Packing group : III
Labels : 3

IATA
Packing group : III
Labels : 3

14.5 Environmental hazards

ADN
Environmentally hazardous : no

ADR
Environmentally hazardous : no

RID
Environmentally hazardous : no

IMDG
Marine pollutant : no

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

Additional Information : For bulk shipping this product has been classified under Annex I (Energy Rich Fuels).

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SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV) : Product is not subject to Authorisation under REACH.

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. P5a FLAMMABLE LIQUIDS

Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Product is subject to Major accident risk decision 2015 (BRZO+) based on Seveso III directive (2012/18/EU).

15.2 Chemical safety assessment

A Chemical Safety Assessment was performed for all substances of this product.

SECTION 16: Other information

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of

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Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : This product is intended for use in closed systems only.

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

Classification of the mixture:

| | |
|--------------|------|
| Flam. Liq. 3 | H226 |
| Asp. Tox. 1 | H304 |

Classification procedure:

On basis of test data.
Expert judgement and weight of evidence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker

Title : Formulation & (re)packing of substances and mixtures
- Industrial

Uses - Worker

Title : Use as a fuel
- Industrial

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NL / EN

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Exposure Scenario - Worker

| | |
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| 300000010281 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Formulation & (re)packing of substances and mixtures- Industrial |
| Use Descriptor | Sector of Use: SU3, SU10 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1 |
| Scope of process | Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities. |

| | | |
|---|---|----------|
| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., | |
| Frequency and Duration of Use | | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes a good basic standard of occupational hygiene is implemented. | | |
| Contributing Scenarios | Risk Management Measures | |
| General measures (Aspiration) | Do not ingest. If swallowed, then seek immediate medical assistance | |
| General measures (Skin defatting) | If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: | | 8,42E-01 |
| Regional use tonnage (tonnes/year): | | 2,13E+06 |
| Fraction of Regional tonnage used locally: | | 0,141 |
| Annual site tonnage (tonnes/year): | | 3,00E+04 |
| Maximum daily site tonnage (kg/day): | | 1,00E+05 |
| Frequency and Duration of Use | | |

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| Continuous release. | |
| Emission Days (days/year): | 300 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 2,5E-03 |
| Release fraction to wastewater from process (initial release prior to RMM): | 5,0E-06 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| Technical conditions and measures at process level (source) to prevent release | |
| Common practices vary across sites thus conservative process re-release estimates used. | |
| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil | |
| Risk from environmental exposure is driven by freshwater. | |
| If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. | |
| No air emission controls required; required removal efficiency is 0%. | |
| Secondary biological waste water treatment (either onsite or offsite) is required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment plant | |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 7,1E+05 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for disposal | |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

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|--|----------------------------|
| SECTION 3 | EXPOSURE ESTIMATION |
| Section 3.1 - Health | |
| Risk Management Measures are based on qualitative risk characterisation. | |

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| Section 3.2 -Environment | |
| Used EUSES model. | |

| | |
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| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
| Section 4.1 - Health | |

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Not applicable.

Section 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.

Required removal efficiency for wastewater can be achieved using onsite/offsite 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>).

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Exposure Scenario - Worker

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| 300000010282 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as a fuel- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 Environmental Release Categories: ERC7, ESVOC SpERC 7.12a.v1 |
| Scope of process | Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. |

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| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., | |
| Frequency and Duration of Use | | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes a good basic standard of occupational hygiene is implemented. | | |
| Contributing Scenarios | Risk Management Measures | |
| General measures (Aspiration) | Do not ingest. If swallowed, then seek immediate medical assistance | |
| General measures (Skin defatting) | If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: | | 1,82E-01 |
| Regional use tonnage (tonnes/year): | | 4,60E+05 |
| Fraction of Regional tonnage used locally: | | 0,652 |
| Annual site tonnage (tonnes/year): | | 1,50E+05 |
| Maximum daily site tonnage (kg/day): | | 5,00E+05 |
| Frequency and Duration of Use | | |
| Continuous release. | | |
| Emission Days (days/year): | | 300 |
| Environmental factors not influenced by risk management | | |

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| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 5,00E-03 |
| Release fraction to wastewater from process (initial release prior to RMM): | 1,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| Technical conditions and measures at process level (source) to prevent release | |
| Common practices vary across sites thus conservative process re-release estimates used. | |
| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil | |
| Risk from environmental exposure is driven by freshwater secondary poisoning. | |
| Treat air emission to provide a typical removal efficiency of (%) | 95 |
| Onsite waste water treatment required. | |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 99 |
| Oil-water separation and secondary biological treatment required. | |
| If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%) | 99 |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment plant | |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 9,3E+06 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for disposal | |
| Combustion emissions limited by required exhaust emission controls. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

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| SECTION 3 | EXPOSURE ESTIMATION |
| Section 3.1 - Health | |
| Risk Management Measures are based on qualitative risk characterisation. | |

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| Section 3.2 -Environment | |
| Used EUSES model. | |

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| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
| Section 4.1 - Health | |
| Not applicable. | |

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| Section 4.2 -Environment |
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| 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. |
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| Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. |
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|---|
| Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. |
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| Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). |
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