Safety Data Sheet

According to regulations in the United Kingdom of Great Britain & Northern Ireland

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

1.1. Product identifier

Substance name: **Renewable Diesel**

Other means of identification: Renewable hydrocarbons (diesel type fraction)

Code: **832025**

MARPOL Annex I Category: Energy-Rich Fuels

UK REACH Registration Number: UK-01-9638319484-0-0008

Issue date: 05-Jan-2023

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

Relevant identified uses: Fuel; Feedstock

Uses advised against: Uses other than those covered by the exposure scenarios appended to this Safety Data Sheet are not supported.

1.3. Details of the supplier of the safety data sheet

Distributor/Supplier: Rix Petroleum Limited
2 Humber Quays, Wellington Street West
Hull, HU1 2BN, United Kingdom
Telephone: 01482 224422 Email: sales@rix.co.uk

Manufacturer: Phillips 66 Ltd, Humber Refinery
South Killingholme, North Lincolnshire DN40 3DW, UK

1.4. Emergency telephone number CHEMTREC Global +1 703 527 3887
CHEMTREC UK +(44)-870-8200418

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

H304 -- Aspiration Hazard -- Category 1

2.2. Label elements



DANGER

H304 - May be fatal if swallowed and enters airways

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

P331 - Do NOT induce vomiting

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

2.3. Other hazards

Combustible liquid

Does not meet the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent, very bioaccumulative (vPvB) substances.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance	Concentration[1]	EINECS	REACH Reg. No
Renewable hydrocarbons (diesel type fraction) NONE	100	700-571-2	UK-01-9638319484-0

Substance	Classification[2]	M-Factor/ATE/SCL
Renewable hydrocarbons (diesel type fraction) NONE	Asp. Tox. 1, H304	--

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

See Section 11 for more information.

SECTION 4: First aid measures

4.1. Description of first aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

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

While significant vapour concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting. Prolonged or repeated contact may dry skin and cause irritation.

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

Notes to Physician: When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to the hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

5.2. Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards: Combustible. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapours may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapour/air explosion hazard if heated. This product will float and can be reignited on surface water. Vapours are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion.

5.3. Special protective actions for fire-fighters

For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapours and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Combustible. Keep all sources of ignition away from spill/release. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorised personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

6.2. Environmental precautions

Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorised drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

6.3. Methods and material for containment and cleaning up

Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use non-sparking tools. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).
Open container slowly to relieve any pressure. May vaporize easily at ambient temperatures. The vapour is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes for specific bonding/grounding requirements). Do not enter confined spaces such as tanks or pits without following proper entry procedures. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulphur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

7.2. Conditions for safe storage, including any incompatibilities

Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet Country or Committee standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to appropriate guidance pertaining to cleaning, repairing, welding, or other contemplated operations.

7.3. Specific end use(s)

Refer to supplemental exposure scenarios if attached.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Occupational Exposure Limits:

Substance	ACGIH	Ireland	United Kingdom	Phillips 66
Renewable hydrocarbons (diesel type fraction)	TWA-8hr: 100 mg/m^3 inhalable fraction and vapor Skin	---	---	---

STEL = Short Term Exposure Limit (15 minutes); TWA = Time Weighted Average (8 hours); --- = No Occupational Exposure Limit. Local regulations may be more stringent than regional or national requirements.

Biological Limit Values: None

Relevant DNEL and PNEC:

Worker Derived No-Effect Level (DNEL)
Inhalation: 147 mg/m³, Chronic effects, systemic
Dermal: 42 mg/kg/day, Chronic effects, systemic

Consumer Derived No-Effect Level (DNEL)
Inhalation: 94 mg/m³, Chronic effects, systemic
Dermal: 18 mg/kg/day, Chronic effects, systemic
Ingestion: Not applicable

Environmental Predicted No-Effect Concentration (PNEC): 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 controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practise suggests the use of eye protection that meets or exceeds EN 166 whenever working with chemicals.

Skin/Hand Protection: The use of skin protection is not normally required; however, good industrial hygiene practise suggests the use of gloves or other appropriate skin protection meeting EN 374 whenever working with chemicals. Suggested protective materials: Nitrile rubber.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit an approved air purifying respirator equipped with Type A, organic gases and vapours filter (as specified by the manufacturer) in combination with Type P2 - Medium efficiency particle filters may be used. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health. A respiratory protection programme that follows recommendations for the selection, use, care and maintenance of respiratory protective devices in EN 529:2005 should be followed whenever workplace conditions warrant a respirator's use.

Environmental Exposure Controls: Refer to Sections 6, 7, 12 and 13.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Data represent typical values and are not intended to be specifications. N/A = Not Applicable; N/D = Not Determined

Physical State:	Liquid
Colour:	clear
Odour:	Mild
Melting / freezing point:	N/D
Initial boiling point and boiling range:	180-320 °C
Flammability (solid, gas):	N/A
Upper Explosive Limits (vol % in air):	N/D
Lower Explosive Limits (vol % in air):	N/D
Flash point:	> 141.8 °F / > 61 °C
Method:	Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
Autoignition temperature:	204 °C
Decomposition temperature:	N/D
pH:	N/A
Viscosity:	2.6 cSt @ 40°C
Solubility:	Insoluble in water
Partition coefficient n-octanol /water (log Kow):	>6.5
Vapour pressure:	0.087 kPa @ 25°C
Vapour density:	>1 (air = 1)
Relative density:	0.77-0.79 @ 60ºF (15.6ºC) (water = 1)
Particle characteristics:	N/A

9.2. Other information

9.2.1. Information with regards to physical hazard classes

No information available

9.2.2. Other safety characteristics

Evaporation Rate (nBuAc=1):	N/D

Bulk Density:	N/D
Pour point:	< -4 °F / < -20 °C
Explosive properties:	N/D
Oxidising properties:	N/D

SECTION 10: Stability and reactivity

10.1. Reactivity	Not chemically reactive.
10.2. Chemical stability	Stable under normal ambient and anticipated conditions of use.
10.3. Possibility of hazardous reactions	Hazardous reactions not anticipated.
10.4. Conditions to avoid	Avoid high temperatures and all sources of ignition. Prevent vapour accumulation.
10.5. Incompatible materials	Avoid contact with strong oxidizing agents and strong reducing agents.
10.6. Hazardous decomposition products	Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

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

Likely Routes of Exposure: Inhalation, Ingestion, Eye contact, Skin contact
Aspiration Hazard: May be fatal if swallowed and enters airways.

Acute Oral Toxicity

Product

Classification: Unlikely to be harmful
Oral LD50: 2 g/kg (rat)

Substance	Oral LD50	Species	Method	Remarks
Renewable hydrocarbons (diesel type fraction)	> 2 g/kg	Rat	OECD 423	

Acute Dermal Toxicity

Product

Classification: Unlikely to be harmful
Dermal LD50: > 2 g/kg (estimated)

Substance	Dermal LD50	Species	Method	Remarks
Renewable hydrocarbons (diesel type fraction)	> 2 g/kg	Rat	OECD 402	

Acute Inhalation Toxicity

Product

Classification: Unlikely to be harmful
Inhalation LC50 : 23.4 mg/L (vapour)

Substance	Inhalation LC50	Species	Method	Remarks
Renewable hydrocarbons (diesel type fraction)	23.4 mg/L	Rat	Similar to OECD 403	Based on similar material

Serious Eye Damage/Irritation

Product

Classification: Not expected to be irritating

Substance	Classification	SCL	Species	Method	Remarks
Renewable hydrocarbons (diesel type fraction)	Not expected to be irritating.		Rabbit	OECD 405	

Skin Corrosion/Irritation

Product

Classification: Not expected to be irritating
Additional Information: Repeated exposure may cause skin dryness or cracking

Substance	Classification	SCL	Species	Method	Remarks

Renewable hydrocarbons (diesel type fraction)	Not expected to be irritating.		Rabbit	OECD 404	

Respiratory Sensitisation

Product

Classification: No information available

Substance	Respiratory Sensitisation:	SCL	Species	Method	Remarks
Renewable hydrocarbons (diesel type fraction)	No information available				

Skin Sensitisation

Product

Classification: Not expected to be a skin sensitizer

Substance	Skin Sensitisation	SCL	Species	Method	Remarks
Renewable hydrocarbons (diesel type fraction)	Not expected to be a skin sensitizer		Guinea pig	OECD 406	

Specific target organ toxicity - Single exposure

Product

Classification: Not expected to cause organ effects from single exposure

Substance	Specific target organ toxicity - Single exposure	Target Organs
Renewable hydrocarbons (diesel type fraction)	Not expected to cause organ effects from single exposure.	

Specific target organ toxicity - Repeated exposure

Product

Classification: Not expected to cause organ effects from repeated exposure

Substance	Specific target organ toxicity - Repeated exposure	SCL	Method	Target Organs
Renewable hydrocarbons (diesel type fraction)	Not expected to cause organ effects from repeated exposure		OECD 408	

Carcinogenicity

Product

Classification: No information available

Substance	Classification	Method
Renewable hydrocarbons (diesel type fraction)	No information available	

Reproductive/Developmental/Teratogenic effects

Product

Classification: Not expected to cause reproductive toxicity

Renewable hydrocarbons (diesel type fraction) (NONE)			
Endpoint type	**Method**	**Result**	**Remarks**
Effects on fertility Effects on fetal development	OECD 416	Based on available data, the classification criteria are not met	

Mutagenic effects

Product

Classification: Not expected to cause heritable genetic effects

Renewable hydrocarbons (diesel type fraction) (NONE)		
Method	**Result**	**Remarks**
Other: EU Method B.13/14 (Mutagenicity - Reverse Mutation Test Using Bacteria)	Negative	
Other: EU Method B.10 (Mutagenicity - In Vitro Mammalian Chromosome Aberration Test)	Negative	
Other: EU Method B.17 (Mutagenicity - In Vitro Mammalian Cell Gene Mutation Test)	Negative	

11.2 Information on other hazards
11.2.1 Endocrine disrupting properties

The currently available information does not indicate that this substance has endocrine disrupting properties as defined by the criteria set out in Section B of Regulation (EU) No 2017/2100.
11.2.2 Other Information

None known

SECTION 12: Ecological information

12.1. Toxicity
Not expected to be harmful to aquatic life
12.2. Persistence and degradability
Not expected to persist in the environment if spilled or released.
12.3. Bioaccumulative potential
Substance is expected to possess low bioaccumulation potential.
12.4. Mobility in soil
Volatilisation to air is not expected to be a significant fate process due to the low vapour pressure of this material. In water, this material will float and spread over the surface at a rate dependent upon viscosity. The main fate process is expected to be biodegradation in water, soil, and sediment.
12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance.
12.6 Endocrine disrupting properties
The currently available information does not indicate that this substance has endocrine disrupting properties as defined by the criteria set out in Section B of Regulation (EU) No 2017/2100.
12.7 Other adverse effects
None anticipated.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
European Waste Code: 13 07 01* fuel oil and diesel

This material, if discarded as produced, would be considered as hazardous waste pursuant to Directive 2008/98/EC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.
This code has been assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste generators/producers are responsible for assessing the actual process used when generating the waste and it's contaminants in order to assign the proper waste disposal code.
Disposal must be in accordance with Directive 2008/98/EC and other applicable national or regional provisions, and based upon material characteristics at time of disposal. For incineration of waste, follow Directive 2000/76/EC. For landfill of waste, follow Directive 1999/31/EC. Product is suitable for burning in an enclosed controlled burner for fuel value if >5000 BTU, or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Follow Directive 2000/76/EC.
Empty Containers: Container contents should be completely used and containers emptied prior to discard. Empty drums should be properly sealed and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with applicable regulations.

SECTION 14: Transport information

14.1. UN number
UN1202
14.2. UN proper shipping name

Diesel fuel

14.3. Transport hazard class(es)
3; F (floater)

14.4. Packing group
III

14.5. Environmental hazards
This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant

14.6. Special precautions for user
If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.

14.7 Maritime transport in bulk according to IMO instruments
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EC 1272/2008 - Classification, labelling and packaging of substances and mixtures
EN166:2002 Eye Protection
EN 529:2005 Respiratory Protective devices
BS EN 374-1:2016 Protective gloves against chemicals and micro-organisms
Workplace Exposure Limits, EH40/2005, Control of Substances Hazardous to Health
Federal Water Act on the Classification of Substances Hazardous to Waters
Directive 2008/98/EC (Waste Framework Directive)
Directive 2000/76/EC on incineration of waste
Directive 1999/31/EC on landfill of waste
Export Rating: NLR (No Licence Required)

15.2. Chemical safety assessment
A chemical safety assessment has been carried out for the substance/mixture.

SECTION 16: Other information

Issue date:	05-Jan-2023
Status:	FINAL
Previous Issue Date:	14-Jan-2022
Revised Sections or Basis for Revision:	Format change Manufacturer (Section 1) REACH Registration Number Precautionary Statement(s) (Section 2) Composition (Section 3) Handling and Storage information (Section 7) Exposure limits (Section 8) Personal Protective Equipment (Section 8) Physical Properties (Section 9) Toxicological (Section 11) Shipping information (Section 14)
SDS Number:	**832025**
Language:	BE

List of Relevant Hazard Statements:
H304 - May be fatal if swallowed and enters airways

Regulatory Basis of Classification	
Classification	Regulatory Basis
H304 -- Aspiration Hazard -- Category 1	On basis of test data

Key literature references and sources for data:
Information used includes one or more of the following: results from internal company data, supplier toxicology studies, CONCAWE Product Dossiers and other publicly available resources.

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; ADR = Agreement on Dangerous Goods by Road; BMGV = Biological Monitoring Guidance Value; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA = [US] Environmental Protection Agency; Germany-TRGS = Technical Rules for Dangerous Substances; IARC = International Agency for Research on Cancer; ICAO/IATA = International Civil Aviation Organisation / International Air Transport Association; INSHT = National Institute for Health and Safety at Work; IMDG = International Maritime Dangerous Goods; Irland-HSA = Ireland's National Health and Safety Authority; LEL = Lower Explosive Limit; MARPOL = Marine Pollution; N/A = Not Applicable; N/D = Not Determined; NTP = [US] National Toxicology Programme; PBT = Persistent, Bioaccumulative and Toxic; RID = Regulations Concerning the International Transport of Dangerous Goods by Rail; STEL = Short Term Exposure Limit; TLV = Threshold Limit Value; TRGS 903 = Technical rules for hazardous substances; TWA = Time Weighted Average; UEL = Upper Explosive Limit; UK-EH40 = United Kingdom EH40/2005 OEL; vPvB = very Persistent, very Bioaccumulative

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorisation is given nor implied to practice any patented invention without a licence.

1. Formulation & (Re)packing of substance - Industrial

Section 1 Exposure Scenario Renewable hydrocarbons (diesel type fraction)	
Title	Formulation & (re)packing of substances and mixtures (Industrial)
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 5, 8a, 8b, 9, 15
Environmental release category(ies)	2
Specific Environmental Release Category	ESVOC SpERC 2.2.v1
Processes, tasks, activities covered	
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	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Covers skin contact area up to 240 cm² Palm of one hand; 480 cm² Palm of both hands; 960 cm² Both hands.
Other operational conditions affecting exposure	Indoor use. ≤ 40°C. Provide a basic standard of general ventilation (1 to 3 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios / Product Category	**Specific Risk Management Measures & Operating Conditions**
Mixing operations (closed systems)	No specific measures identified.
Batch processes at elevated temperatures	No specific measures identified.
Process sampling	Wear suitable gloves tested to EN374.
Bulk transfers	No specific measures identified.
Laboratory activities	Provide local exhaust ventilation. Wear suitable gloves tested to EN374. Handle in a fume cupboard or under extract ventilation.
Equipment cleaning and maintenance	Provide local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Wear suitable gloves tested to EN374.
Storage	No specific measures identified.
Mixing operations (open systems) With potential for aerosol generation	Wear suitable gloves tested to EN374.
Transfer from/pouring from containers	Wear suitable gloves tested to EN374.
Drum/batch transfers	No specific measures identified.
Drum and small package filling	Provide local exhaust ventilation. Fill containers/cans at dedicated fill points supplied with local extract ventilation.
Batch processes at elevated temperatures	No specific measures identified.

2.2 Control of environmental exposure	
Amounts used	
Fraction of EU tonnage used in region	1
Annual site tonnage (tonnes/year)	1 500 000
Maximum daily site tonnage (kg/day)	100 000
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 of use affecting environmental exposure	
Release fraction to air from process (initial release prior to RMM)	0,25%
Release fraction to wastewater from process (initial release prior to RMM)	0,005%
Release fraction to soil from process (initial release prior to RMM)	0.01%
Conditions and measures related to municipal sewage treatment plant Aerobic biological treatment	
Assumed domestic sewage treatment plant flow (m^3/d):	2000
Conditions and measures related to external treatment of waste for disposal	
Dispose of waste in accordance with environmental legislation.	
Conditions and measures related to external recovery of waste	
All waste product is assumed to be collected and returned for re-processing or use as a fuel.	
Section 3 Exposure Estimation	
3.1 Health	
Used CHESAR model.	
3.2 Environment	
Used Petrorisk model.	
Section 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. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Available hazard data does not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterization.	
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. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (https://cefic.org/app/uploads/2019/01/SPERCs-Specific-Envirnonmental-Release-Classes-REACHImpl-ES-CSA-CSR.pdf).	

2. Use of substance as a Fuel - Industrial

Section 1 Exposure Scenario Renewable hydrocarbons (diesel type fraction)	
Title	Use as a fuel (Industrial)
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 4, 8a, 8b, 15, 16
Environmental release category(ies)	7
Specific Environmental Release Category	ESVOC SpERC 7.12a.v1
Processes, tasks, activities covered	
Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
Section 2 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Covers skin contact area up to 240 cm^2 Palm of one hand; 480 cm^2 Palm of both hands; 960 cm^2 Both hands
Other operational conditions affecting exposure	Indoor use. ≤ 40°C. Provide a basic standard of general ventilation (1 to 3 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.
Contributing Scenarios / Product Category	**Specific Risk Management Measures & Operating**

	Conditions
Bulk transfers	Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.
Drum/batch transfers	Provide local exhaust ventilation. Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.
General exposures (closed systems) Continuous process	No specific measures identified.
General exposures (closed systems) Continuous process with sample collection	Ensure material transfers are under containment or extract ventilation.
General exposures (closed systems) Batch process	Ensure material transfers are under containment or extract ventilation.
General exposures (open systems)	Ensure material transfers are under containment or extract ventilation.
Process sampling	Wear suitable gloves tested to EN374.
Equipment cleaning and maintenance	Provide local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Wear suitable gloves tested to EN374.
Vessel and container cleaning	Provide local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Provide enhanced general ventilation by mechanical means. If above technical/organisational control measures are not feasible, then adopt following PPE:. Wear positive pressure self-contained breathing apparatus (SCBA). Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.
Storage	No specific measures identified.
Refuelling	Use drum pumps or carefully pour from container. Use vapour recovery units when necessary. Wear suitable gloves tested to EN374.
Laboratory activities	Handle in a fume cupboard or under extract ventilation. Wear suitable gloves (tested to EN374), coverall and eye protection.

2.2 Control of environmental exposure

Amounts used	
Fraction of EU tonnage used in region	1
Annual site tonnage (tonnes/year)	10 000
Maximum daily site tonnage (kg/day)	5 000 000
Frequency and duration of use	
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 of use affecting environmental exposure	
Release fraction to air from process (initial release prior to RMM)	0,025%
Release fraction to wastewater from process (initial release prior to RMM)	0,001%
Release fraction to soil from process (initial release prior to RMM)	0%
Conditions and measures related to municipal sewage treatment plant Aerobic biological treatment	
Assumed domestic sewage treatment plant flow (m^3/d):	2000
Conditions and measures related to external treatment of waste for disposal	
Dispose of waste in accordance with environmental legislation.	
Conditions and measures related to external recovery of waste	
Retain drain downs in sealed storage pending disposal or for subsequent recycle.	

Section 3 Exposure Estimation

3.1 Health

Used CHESAR model.

3.2 Environment

Used Petrorisk model.

Section 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. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Available hazard data does not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterization.
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. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (https://cefic.org/app/uploads/2019/01/SPERCs-Specific-Envirnonmental-Release-Classes-REACHImpl-ES-CSA-CSR.pdf).

3. Use of substance as a Fuel - Professional

Section 1 Exposure Scenario Renewable hydrocarbons (diesel type fraction)	
Title	Use as a fuel (Professional)
Use Descriptor	
Sector(s) of use	22, (Professional)
Process category(ies)	1, 2, 3, 8a, 8b, 16
Environmental release category(ies)	9a, 9b
Specific Environmental Release Category	ESVOC SpERC 9.12b.v1
Processes, tasks, activities covered	
Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
Section 2 Operational conditions and risk management measures	
2.1 Control of worker exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Covers skin contact area up to 240 cm² Palm of one hand; 480 cm² Palm of both hands; 960 cm² Both hands
Other operational conditions affecting exposure	Indoor use. ≤ 40°C. Provide a basic standard of general ventilation (1 to 3 air changes per hour) Unless otherwise stated.

Contributing Scenarios / Product Category	**Specific Risk Management Measures & Operating Conditions**
Bulk transfers heating oil and diesel deliveries	Provide local exhaust ventilation. Handle substance within a closed system. Wear suitable gloves tested to EN374.
Drum/batch transfers	Provide local exhaust ventilation. Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.
Refuelling	Provide local exhaust ventilation. Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.
Dipping, immersion and pouring	Wear suitable gloves tested to EN374.
General exposures	No specific measures identified.
Equipment cleaning and maintenance	Provide local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Wear suitable gloves tested to EN374.
Vessel and container cleaning	Provide local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Wear suitable gloves tested to EN374.
Storage	No specific measures identified.

2.2 Control of environmental exposure	
Amounts used	
Fraction of EU tonnage used in region	0.1
Maximum daily site tonnage (kg/day)	160

Frequency and duration of use	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use affecting environmental exposure	
Release fraction to air from process (initial release prior to RMM)	0,01%
Release fraction to wastewater from process (initial release prior to RMM)	0,001%
Release fraction to soil from process (initial release prior to RMM)	0,001%
Conditions and measures related to municipal sewage treatment plant Aerobic biological treatment	
Assumed domestic sewage treatment plant flow (m^3/d):	2000
Conditions and measures related to external treatment of waste for disposal	
Dispose of waste in accordance with environmental legislation.	
Conditions and measures related to external recovery of waste	
Section 3 Exposure Estimation	
3.1 Health	
Used CHESAR model.	
3.2 Environment	
Used Petrorisk model.	
Section 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. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Available hazard data does not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterization.	
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. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (https://cefic.org/app/uploads/2019/01/SPERCs-Specific-Envirnonmental-Release-Classes-REACHImpl-ES-CSA-CSR.pdf).	

4. Use of substance as a Fuel - Consumer

Section 1 Exposure Scenario Renewable hydrocarbons (diesel type fraction)	
Title	Use as a fuel (Consumer)
Use Descriptor	
Sector(s) of use	21, (Consumer)
Product category(ies)	13
Environmental release category(ies)	9a, 9b
Specific Environmental Release Category	ESVOC SpERC 9.12c.v1
Processes, tasks, activities covered	
Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	
Section 2 Operational conditions and risk management measures	
2.1 Control of consumer exposure	
Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers use up to (times/day of use): 1
Human factors not influenced by risk management	Palm of one hand; Palm of both hands; Unless otherwise stated
Other operational conditions affecting exposure	Covers outdoor use. Unless otherwise stated. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Use in well ventilated areas. Do not ingest. If swallowed then seek immediate medical assistance.

Contributing Scenarios / Product Category	Specific Risk Management Measures & Operating Conditions
Liquid: Automotive Refuelling	For each use event, covers use amounts up to (g): 38,600. Covers exposure up to (hours/event): 0,05.
Liquid Scooter Refuelling	For each use event, covers use amounts up to (g): 7500. Covers exposure up to (hours/event): 0,02.
Liquid Garden Equipment - Use	For each use event, covers use amounts up to (g): 772. Covers exposure up to (hours/event): 2,00.
Liquid: garden equipment - refuelling	For each use event, covers use amounts up to (g): 772. Covers exposure up to (hours/event): 0,03.
Liquid: lamp oil Indoor	For each use event, covers use amounts up to (g): 100. Covers exposure up to (hours/event): 0,01.
Liquid: home space heater fuel	For each use event, covers use amounts up to (g): 3320. Covers exposure up to (hours/event): 0,1.
Liquid: Boat refuelling	For each use event, covers use amounts up to (g): 156,000. Covers exposure up to (hours/event): 0,25.

2.2 Control of environmental exposure	
Amounts used	
Fraction of EU tonnage used in region	0,1
Maximum daily site tonnage (kg/day)	550
Frequency and duration of use	
Emission days (days/year)	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Other operational conditions of use affecting environmental exposure	
Release fraction to air from process (initial release prior to RMM)	0,01%
Release fraction to wastewater from process (initial release prior to RMM)	0,001%
Release fraction to soil from process (initial release prior to RMM)	0,001%
Conditions and measures related to municipal sewage treatment plant Aerobic biological treatment	
Assumed domestic sewage treatment plant flow (m^3/d):	2000
Conditions and measures related to external treatment of waste for disposal	
Dispose of waste in accordance with environmental legislation.	
Conditions and measures related to external recovery of waste	
Section 3 Exposure Estimation	
3.1 Health	
Used CHESAR model.	
3.2 Environment	
Used Petrorisk model.	
Section 4 Guidance to check compliance with the Exposure Scenario	
4.1 Health	
Users are advised to consider national Occupational Exposure Limits or other equivalent values. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	
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. Further details on scaling and control technologies are provided in SpERC factsheet (https://cefic.org/app/uploads/2019/01/SPERCs-Specific-Envirnonmental-Release-Classes-REACHImpl-ES-CSA-CSR.pdf).	

5. Use of substance as an intermediate - Industrial

Section 1 Exposure Scenario Renewable hydrocarbons (diesel type fraction)	
Title	Use as an intermediate (Industrial)
Use Descriptor	
Sector(s) of use	3
Process category(ies)	1, 2, 3, 4, 8a, 8b, 15
Environmental release category(ies)	6a
Specific Environmental Release Category	ESVOC SpERC 6.1a.v1

Processes, tasks, activities covered
Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

Section 2 Operational conditions and risk management measures

2.1 Control of worker exposure

Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently)
Human factors not influenced by risk management	Covers skin contact area up to 240 cm² Palm of one hand; 480 cm² Palm of both hands; 960 cm² Both hands
Other operational conditions affecting exposure	Indoor use. ≤ 40°C. Provide a basic standard of general ventilation (1 to 3 air changes per hour). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios / Product Category	**Specific Risk Management Measures & Operating Conditions**
General exposures (closed systems)	No specific measures identified.
General exposures (closed systems) with sample collection With occasional controlled exposure	No specific measures identified.
General exposures (closed systems) Batch process	No specific measures identified.
General exposures (open systems) Batch process with sample collection	No specific measures identified.
Process sampling	No specific measures identified.
Laboratory activities	Provide local exhaust ventilation. Wear suitable gloves tested to EN374. Handle in a fume cupboard or under extract ventilation.
Bulk transfers (closed systems)	No specific measures identified.
Equipment cleaning and maintenance	Provide local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Wear suitable gloves tested to EN374.
Storage	No specific measures identified.

2.2 Control of environmental exposure

Amounts used	
Fraction of EU tonnage used in region	1
Annual site tonnage (tonnes/year)	15 000
Maximum daily site tonnage (kg/day)	50 000
Frequency and duration of use	
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 of use affecting environmental exposure	
Release fraction to air from process (initial release prior to RMM)	0,002%
Release fraction to wastewater from process (initial release prior to RMM)	0,001%
Release fraction to soil from process (initial release prior to RMM)	0,1%
Conditions and measures related to municipal sewage treatment plant Aerobic biological treatment	
Assumed domestic sewage treatment plant flow (m³/d):	2000
Conditions and measures related to external treatment of waste for disposal	
Dispose of waste in accordance with environmental legislation.	
Conditions and measures related to external recovery of waste	
Retain drain downs in sealed storage pending disposal or for subsequent recycle.	

Section 3 Exposure Estimation

3.1 Health

Used CHESAR model.

3.2 Environment

Used Petrorisk model.

Section 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. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data does not enable the derivation of a DNEL for dermal irritant effects. Available hazard data does not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterization.

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. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (https://cefic.org/app/uploads/2019/01/SPERCs-Specific-Envirnonmental-Release-Classes-REACHImpl-ES-CSA-CSR.pdf).