SAFETY DATA SHEET

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

1.1 Product identifier

Product name **Diesel Marine Leger (DML)**

Other means of identification Diesel Marine Leger 0.1% / Diesel Marine Leger 1.0% / Diesel Marine Leger 1.5%

Proper shipping name MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gas oils, including ship's bunkers

SDS no. SFR2124

Product type Liquid.

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

Identified uses
Use in fuel - Consumer Use in fuel - Industrial Use in fuel - Professional Distribution of substance Use as an intermediate

Use of the substance/ mixture Fuel for marine engines.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

1.3 Details of the supplier of the safety data sheet

Supplier

BP France
Campus Saint Christophe
Bâtiment Galilée 3
10 avenue de l'Entreprise
Cergy Saint Christophe
95863 CERGY PONTOISE
France

Tel. 01 34 22 40 00

E-mail address MSDSadvice@bp.com

1.4 Emergency telephone number

EMERGENCY TELEPHONE NUMBER

Tél 01 45 42 59 59 : ORFILA
Tél 01 40 05 48 48 - Centre Anti-Poisons de Paris, Hôpital Fernand Widal - 200, Rue de Faubourg Saint-Denis - 75475 Paris Cedex 10
Tél 04 72 11 69 11 - Centre Anti-Poisons de Lyon, Hôpital Edouard Herriot, Bâtiment A - 162, Avenue de la Cassagne - 69424 Lyon Cedex 3
Tél 04 91 75 25 25 - Centre Anti-Poisons de Marseille, Hôpital Salvator, 249, Boulevard Sainte-Marguerite - 13274 Marseille Cedex 9

Tél: 01 30 30 49 99 - Permanence BP France 24/24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

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

See Section 16 for the full text of the H statements declared above.

SECTION 2: Hazards identification

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

2.2 Label elements

Hazard pictograms

Signal word Danger

Hazard statements

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

Precautionary statements

Prevention

P201 - Obtain special instructions before use.
P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment.
P260 - Do not breathe vapour or spray.

Response

P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage Not applicable.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients Fuels, diesel

Supplemental label elements Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings Yes, applicable.

Tactile warning of danger Yes, applicable.

2.3 Other hazards

Results of PBT and vPvB assessment Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.

Other hazards which do not result in classification

This material may contain significant quantities of polycyclic aromatic hydrocarbons, some of which have been shown by experimental studies to induce skin cancer.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Product definition Mixture

Complex mixture of middle distillate hydrocarbons, with carbon numbers in C10 to C28 range. May also contain small quantities of proprietary performance additives.

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type

SECTION 3: Composition/information on ingredients

Fuels, diesel	REACH #: 01-2119484664-27 EC: 269-822-7 CAS: 68334-30-5 Index: 649-224-00-6	≥90	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Carc. 2, H351 STOT RE 2, H373 (bone marrow, liver, thymus) Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1]

See Section 16 for the full text of the H statements declared above.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern
[6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

Inhalation
If inhaled, remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.

Ingestion
Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Protection of first-aiders
No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Potential acute health effects

Inhalation
Harmful if inhaled.

Ingestion
Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Skin contact
Causes skin irritation.

Eye contact
No known significant effects or critical hazards.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Inhalation
Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Ingestion
If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

Skin contact
As with all such products containing potentially harmful levels of polycyclic aromatic hydrocarbons, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.

Eye contact
Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 4: First aid measures

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects.
Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet. The use of a water jet may cause the fire to spread by splashing the burning product.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture

Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Liquid will float and may reignite on surface of water.

Hazardous combustion products

Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)

5.3 Advice for firefighters

Special precautions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Eliminate all ignition sources. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by

SECTION 6: Accidental release measures

local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

6.3 Methods and material for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 5 for firefighting measures.
See Section 8 for information on appropriate personal protective equipment.
See Section 12 for environmental precautions.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid contact of spilt material and runoff with soil and surface waterways. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Do not reuse container. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep away from heat and direct sunlight. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/containers designed for use with this product. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact

SECTION 7: Handling and storage

with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

7.3 Specific end use(s)

Recommendations See section 1.2 and Exposure scenarios in annex, if applicable.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived No Effect Level

Product/ingredient name	Type	Exposure		Value	Population	Effects
Fuels, diesel	DNEL	Short term Inhalation	15 minutes	4300 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	8 hours TWA	2.9 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	8 hours TWA	68 mg/m³	Workers	Systemic
	DNEL	Short term Inhalation	15 minutes	2600 mg/m³	Consumers	Systemic
	DNEL	Long term Dermal	TWA	1.3 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	24 hours TWA	20 mg/m³	Consumers	Systemic

Predicted No Effect Concentration

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 8: Exposure controls/personal protection

Respiratory protection

If local exhaust ventilation or other methods of ventilation are not possible or are insufficient, wear suitable respiratory protective devices. Wear suitable respiratory protective devices if there is a risk of exposure limits being exceeded. The choice of suitable respiratory device will depend upon a risk assessment of the workplace environment and the task being carried out. If required, the respiratory device must be certified as safe in defined explosive atmospheres (EX Label). Respiratory protective devices must be checked to ensure they fit correctly each time they are worn. Please consult European standard EN 529 for further guidance on the selection, use, care and maintenance of respiratory protective devices.

Suitable breathing apparatus (independent of ambient atmosphere) must be worn if any of the following situations apply.
- When the workplace atmosphere is considered to be immediately dangerous to life and health.
- When there is a risk of the workplace atmosphere being oxygen deficient.
- When the workplace atmosphere is uncontrolled.
- When the workplace atmosphere is unknown.
- When there is a risk of loss of consciousness or asphyxiation
- When entry into a confined space is required.
- When there is a risk of gases being released that could be a fire or explosion hazard.
- When the concentration of contaminants in the atmosphere exceeds the level of protection (maximum allowed concentration) given by a filtering device
- When the contaminants have a low odour that would not be tasted or smelt by the wearer of a filtering device if the filter became exhausted or saturated.
- When there is a risk of hydrogen sulphide exposure limits being exceeded.

Use with adequate ventilation.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

Recommended: Gas filter suitable for gases and vapours. Filter type: A
Combined filter suitable for gases, vapours and particles (dust, smoke, mist, aerosol). Filter type: AP

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

General Information:

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Wear chemical resistant gloves.
Recommended: Nitrile gloves.
Do not re-use gloves.
Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis.
Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture).
The frequency of replacement will depend upon the circumstances of use.

Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.
Our recommendations on the selection of gloves are as follows:

Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.
If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and

SECTION 8: Exposure controls/personal protection

replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.
It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Glove Thickness:

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

• Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.

• Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

Recommended: Nitrile gloves.

Skin and body

Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
Refer to standard: ISO 11612
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
Refer to standard: EN 1149
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Refer to standards:

Respiratory protection: EN 529
Gloves: EN 420, EN 374
Eye protection: EN 166
Filtering half-mask: EN 149
Filtering half-mask with valve: EN 405
Half-mask: EN 140 plus filter
Full-face mask: EN 136 plus filter
Particulate filters: EN 143
Gas/combined filters: EN 14387

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	Liquid.
Colour	Blue.
Odour	Diesel fuel
Odour threshold	0.7 ppm (Based on Fuels, diesel)
pH	Not applicable. Based on Solubility in Water (Very slightly soluble in water)
Melting point/freezing point	-25 to -10°C (-13 to 14°F)
Initial boiling point and boiling range	150 to 380°C (302 to 716°F)
Pour point	-6 to 0 °C
Flash point	Closed cup: >60°C (>140°F) [Pensky-Martens.]
Evaporation rate	Not relevant/applicable due to nature of the product. Based on Low volatility
Flammability (solid, gas)	Not applicable. Based on Physical state.
Upper/lower flammability or explosive limits	Lower: 0.6% Upper: 6.5%
Vapour pressure	<1 kPa (<7.52 mm Hg) [37.8°C (100°F)]
Vapour density	>1 [Air = 1]
Relative density	0.82 to 0.85 [at 20°C]
Density	<890 kg/m³ (<0.89 g/cm³) at 15°C
Solubility(ies)	Very slightly soluble in water
Partition coefficient: n-octanol/ water	Not applicable. Based on Fuels, diesel - Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for this complex substance.
Auto-ignition temperature	254 to 285°C (489.2 to 545°F) (Based on Fuels, diesel)
Decomposition temperature	Not observed to decompose by final boiling point: >380°C (>716°F)
Viscosity	Kinematic: 1.5 to 6 mm²/s (1.5 to 6 cSt) at 40°C
Explosive properties	Based on Fuels, diesel - Not considered explosive based on structural and oxygen balance considerations.
Oxidising properties	Based on Fuels, diesel - Not considered oxidizing based on structural considerations.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
10.2 Chemical stability	The product is stable.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
10.4 Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas. Avoid excessive heat.
10.5 Incompatible materials	Reactive or incompatible with the following materials: oxidising materials.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result / Route	Test authority / Number	Species	Dose	Exposure	Remarks
Fuels, diesel	LC50 Inhalation Dusts and mists	Equivalent to OECD 403	Rat	4.1 mg/l	4 hours	Based on Diesel fuel
	LD50 Dermal	Equivalent to OECD 434	Rabbit	>4300 mg/kg	-	Based on No. 2 Heating Oil.
	LD50 Dermal	Equivalent to OECD 434	Rabbit	>4300 mg/kg	-	Based on Diesel fuel
	LD50 Oral	Equivalent to OECD 401	Rat	17900 mg/kg	-	Based on No. 2 Heating Oil.
	LD50 Oral	Equivalent to OECD 420	Rat	7600 mg/kg	-	Based on Diesel fuel

Acute toxicity estimates

Route	ATE value
Not available.	

Irritation/Corrosion

Product/ingredient name	Test authority / Test number	Species	Route / Result	Test concentration	Remarks
Fuels, diesel	Equivalent to OECD 404	Rabbit	Skin - Irritation	-	Based on No. 2 Heating Oil.
	Equivalent to OECD 404	Rabbit	Skin - Irritation	-	Based on Diesel fuel
	Equivalent to OECD 405	Rabbit	Eyes - Non-irritating to the eyes.	-	Based on No. 2 Heating Oil.
	Equivalent to OECD 405	Rabbit	Eyes - Non-irritating to the eyes.	-	Based on Diesel fuel

Sensitiser

Product/ingredient name	Route	Test authority / Test number	Species	Result	Remarks
Fuels, diesel	skin	Equivalent to OECD 406	Guinea pig	Not sensitising	Based on No. 2 Heating Oil.
	skin	Equivalent to OECD 406	Guinea pig	Not sensitising	Based on Diesel fuel

GERM CELL MUTAGENICITY

Product/ingredient name	Test authority / Test number	Cell		Type	Result	Remarks
Fuels, diesel	OECD 471	-	Experiment: In vitro	Subject: Non-mammalian species	Positive	Based on Diesel fuel
	Equivalent to OECD 476	Cell: Germ	Experiment: In vitro	Subject: Mammalian-Animal	Negative	Based on Heating Oil.
	not guideline	Cell: Somatic	Experiment: In vivo	Subject: Unspecified	Negative	Based on Heating Oil.

Conclusion/Summary Not classified. Based on available data, the classification criteria are not met.

Carcinogenicity

SECTION 11: Toxicological information

Product/ingredient name	Test authority / Test number	Species	Route	Exposure	Result	Remarks
Fuels, diesel	Equivalent to OECD 451	Mouse	Dermal	2 years	Positive	Based on Heating Oil.

Conclusion/Summary Suspected of causing cancer.

Reproductive toxicity

Product/ingredient name	Test authority / Test number	Species	Route	Exposure	Developmental	Maternal toxicity	Fertility	Remarks
Fuels, diesel	Equivalent to OECD 414	Rat	Dermal	20 days	Negative	-	-	Effects observed at maternally toxic doses. (Based on Condensates (petroleum), vacuum tower)
	Equivalent to OECD 414	Rat	Dermal	10 days	Negative	-	-	Effects observed at maternally toxic doses. (Based on Diesel fuel)
	Equivalent to OECD 414	Rat	Dermal	10 days	Negative	-	-	Effects observed at maternally toxic doses. (Based on No. 2 Heating Oil.)

Conclusion/Summary Development: Not classified. Based on available data, the classification criteria are not met.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity

Product/ ingredient name	Hazard	Test authority / Test number	Species	Route	Type	Dose	Exposure	Target organs	Remarks
Fuels, diesel	STOT - RE	Equivalent to OECD 411	Rat	Dermal	LOAEL	20 to 200 mg/kg bw/day	90 days	blood	Based on Condensates (petroleum), vacuum tower
	STOT - SE	Equivalent to OECD 434	Rabbit	Dermal	LOAEL	>2000 mg/kg	-	-	Based on Heating Oil.
	STOT - SE	Equivalent to OECD 401	Rat	Oral	LOAEL	>2000 mg/kg	-	-	Based on Heating Oil.
	STOT - RE	Equivalent to OECD 413	Rat	Inhalation	NOAEC	>0.2 mg/l /6 hours	90 days	-	Based on Diesel fuel
	STOT - SE	Equivalent to OECD 403	Rat	Inhalation	LOAEL	>5 mg/l	4 hours	-	Based on Diesel fuel

Conclusion/Summary STOT - RE: May cause damage to organs through prolonged or repeated exposure.
STOT - SE: Not classified. Based on available data, the classification criteria are not met.

Information on likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Inhalation Harmful if inhaled.

SECTION 11: Toxicological information

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Skin contact Causes skin irritation.

Eye contact No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion Adverse symptoms may include the following:
nausea or vomiting

Skin contact Adverse symptoms may include the following:
irritation
redness

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Inhalation Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer. May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

Ingestion If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

Skin contact As with all such products containing potentially harmful levels of polycyclic aromatic hydrocarbons, prolonged or repeated skin contact may eventually result in dermatitis or more serious irreversible skin disorders including cancer.

Eye contact Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

Potential chronic health effects

General May cause damage to organs through prolonged or repeated exposure. Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.

Carcinogenicity Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Test	authority / Test number	Species	Type / Result	Exposure	Effects	Remarks
Fuels, diesel	Modelled data	-	Micro-organism	EL50 >1000 mg/l Nominal Fresh water	40 hours	growth inhibition	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	Modelled data	-	Micro-organism	NOELR 3.217 mg/l Nominal Fresh water	40 hours	growth inhibition	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	OECD	201	Algae	Acute EL50 22 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	OECD	202	Daphnia	Acute EL50 210 mg/l Nominal Fresh water	48 hours	Mobility	Based on Diesel fuel

SECTION 12: Ecological information

	OECD	202	Daphnia	Acute EL50 68 mg/l Nominal Fresh water	48 hours	Mobility	Based on Diesel fuel
	OECD	201	Algae	Acute ErL50 78 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	OECD	203	Fish	Acute LL50 65 mg/l Nominal Fresh water	96 hours	Mortality	Based on Diesel fuel
	OECD	203	Fish	Acute LL50 21 mg/l Nominal Fresh water	96 hours	Mortality	Based on Diesel fuel
	OECD	201	Algae	Acute NOELR 10 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	OECD	201	Algae	Acute NOELR 1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Diesel fuel
	OECD	202	Daphnia	Acute NOELR 46 mg/l Nominal Fresh water	48 hours	Mobility	Based on Diesel fuel
	Modelled data	-	Fish	Chronic NOEL 0.083 mg/l Nominal Fresh water	14 days	Mortality	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel
	Modelled data	-	Daphnia	Chronic NOELR 0.2 mg/l Nominal Fresh water	21 days	Immobilisation	Based on Vacuum gas oil / Hydrocracked gas oil / Distillate Fuel

Environmental hazards Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Partially biodegradable.

Product/ingredient name	Test authority / Test number	Result - Exposure	Remarks
Fuels, diesel	OECD 301 F	60 % - Readily - 28 days	Based on Diesel fuel
	OECD 301 F	57.5 % - Not readily - 28 days	Based on Diesel fuel
	Equivalent to EPA OTS 796. 3100	35 % - Not readily - 28 days	Based on Gas Oils (petroleum), solvent refined

12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination. This material may accumulate in sediments.

12.5 Results of PBT and vPvB assessment

Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.

12.6 Other adverse effects

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Hazardous waste Yes.

European waste catalogue (EWC)

Waste code	Waste designation
13 07 01*	fuel oil and diesel

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

Packaging

Methods of disposal Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Special precautions This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

Other information At sea, used or unwanted product should be stored for eventual discharge into port approved waste oil disposal facilities.

References Commission 2014/955/EU
Directive 2008/98/EC

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1202	UN1202	UN1202	UN1202
14.2 UN proper shipping name	GAS OIL	GAS OIL	GAS OIL. Marine pollutant	GAS OIL
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Hazard identification number** 30 **Tunnel code** D/E	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Remarks** Table C Danger: 3+(N2, CMR, F)	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

14.6 Special precautions for user Not available.

ADR/RID Classification code: F1

ADN Classification code: F1

SECTION 14: Transport information

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Proper shipping name: MARPOL Annex 1 rules apply for bulk shipments by sea. Category: gas oils, including ship's bunkers

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Other regulations

REACH Status	The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.
United States inventory (TSCA 8b)	At least one component is not listed.
Australia inventory (AICS)	At least one component is not listed.
Canada inventory	At least one component is not listed.
China inventory (IECSC)	At least one component is not listed.
Japan inventory (ENCS)	At least one component is not listed.
Korea inventory (KECI)	All components are listed or exempted.
Philippines inventory (PICCS)	At least one component is not listed.
Taiwan Chemical Substances Inventory (TCSI)	All components are listed or exempted.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Named substances

Name
Petroleum products and alternative fuels (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

National regulations

Social Security Code, Articles L 461-1 to L 461-7	Sécurité sociale: tableau 36 bis
Reinforced medical surveillance	Not applicable

15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out for one or more of substances within this mixture. A Chemical Safety Assessment has not been carried out for the mixture itself.

SECTION 16: Other information

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

SECTION 16: Other information

CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SADT = Self-Accelerating Decomposition Temperature
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVCB = Complex hydrocarbon substance
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative
Varies = may contain one or more of the following 101316-69-2 / RRN 01-2119486948-13, 101316-70-5, 101316-71-6, 101316-72-7 / RRN 01-2119489969-06, 64741-88-4 / RRN 01-2119488706-23, 64741-89-5 / RRN 01-2119487067-30, 64741-95-3 / RRN 01-2119487081-40, 64741-96-4/ RRN 01-2119483621-38, 64741-97-5 / RRN 01-2119480374-36, 64742-01-4 / RRN 01-2119488707-21, 64742-44-5 / RRN 01-2119985177-24, 64742-45-6, 64742-52-5 / RRN 01-2119467170-45, 64742-53-6 / RRN 01-2119480375-34, 64742-54-7 / RRN 01-2119484627-25, 64742-55-8 / RRN 01-2119487077-29, 64742-56-9 / RRN 01-2119480132-48, 64742-57-0 / RRN 01-2119489287-22, 64742-58-1, 64742-62-7 / RRN 01-2119480472-38, 64742-63-8, 64742-64-9, 64742-65-0 / RRN 01-2119471299-27, 64742-70-7 / RRN 01-2119487080-42, 72623-85-9 / RRN 01-2119555262-43, 72623-86-0 / RRN 01-2119474878-16, 72623-87-1 / RRN 01-2119474889-13, 74869-22-0 / RRN 01-2119495601-36, 90669-74-2 / RRN 01-2119970171-43

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 3, H226	Expert judgment
Acute Tox. 4, H332	Expert judgment
Skin Irrit. 2, H315	Calculation method
Carc. 2, H351	Calculation method
STOT RE 2, H373	Calculation method
Asp. Tox. 1, H304	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
Aquatic Chronic 2, H411	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Carc. 2, H351	CARCINOGENICITY - Category 2
Flam. Liq. 3, H226	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT RE 2, H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

History

SECTION 16: Other information

Date of issue/ Date of revision	26/09/2018.
Date of previous issue	04/09/2018.
Prepared by	Product Stewardship

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition	Mixture
Code	SFR2124
Product name	Diesel Marine Leger (DML)

Section 1: Title

Short title of the exposure scenario	Use in fuel (Vacuum Gas Oils, Hydrocracked Gas Oils & Distillate Fuels (VHGO)) - Consumer
List of use descriptors	**Identified use name:** Use in fuel - Consumer **Sector of end use:** SU21 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC09a, ERC09b **Market sector by type of chemical product:** PC13 **Specific Environmental Release Category:** ESVOC SpERC 9.12c.v1
Processes and activities covered by the exposure scenario	Covers consumer uses in liquid fuels.
Assessment Method	See Section 3

Section 2: Operational conditions and risk management measures

Section 2.1: Control of consumer exposure

Concentration of substance in mixture or article	Covers concentrations up to 100% Unless otherwise stated.
Physical state:	Liquid, vapour pressure > 10 Pa (Standard Temperature and Pressure)
Amounts used:	For each use event, covers use amounts up to 37500 g; Covers skin contact area up to 420cm²
Frequency and duration of use:	Covers frequency up to: 0.143 times per day Unless otherwise stated. Covers exposure up to 2 hours per event
Other given operational conditions affecting consumers exposure:	Assumes activities are at ambient temperature (unless stated differently). Covers use in room size of 20m³, assumes use with typical ventilation

Contributing scenarios: Operational conditions and risk management measures

Product category(ies) 13: Fuels Liquid: automotive refuelling
Operations Conditions (consumer): Covers concentrations up to 100% Unless otherwise stated. Covers use up to 52 days per year; Covers use up to 1 time/on day of use; Covers skin contact area up to 210.00 cm². For each use event, covers use amounts up to 37500 g; Covers outdoor use. Covers use in room size of 100 m³; Covers exposure up to 0.05 hours per event
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Product category(ies) 13: Fuels Liquid – Home heating oil
Operations Conditions (consumer): Covers concentrations up to 100% Unless otherwise stated. Covers use up to 120 days per year; Covers use up to 1 time/on day of use; Covers skin contact area up to 210.00cm²; For each use event, covers use amounts up to 1500g Covers use under typical household ventilation. Covers use in room size of 20m³; Covers exposure up to 0.03hours per event.
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Product category(ies) 13: Fuels Liquid: garden equipment - use
Operations Conditions (consumer): Covers concentrations up to 100% Unless otherwise stated. Covers use up to 26 days per year; Covers use up to 1 time/on day of use. For each use event, covers use amounts up to 750 g ; Covers outdoor use. Covers use in room size of 100 m³; Covers exposure up to 2.00 hours per event
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Product category(ies) 13 : Liquid: garden equipment - refuelling
Operations Conditions (consumer): Covers concentrations up to 100% Unless otherwise stated. Covers use up to 26

days per year; Covers use up to 1 time/on day of use; Covers skin contact area up to 420.00 cm². For each use event, covers use amounts up to 750 g; Covers use in a one car garage (34 m³) under typical ventilation. ; Covers use in room size of 34 m³; Covers exposure up to 0.03 hours per event
Risk Management Measures (consumer): No specific risk management measure identified beyond those operational conditions stated.

Section 2.2: Control of environmental exposure

Product characteristics:	Substance is complex UVCB.
Fraction of EU tonnage used in region	0.1
Regional use tonnage	EC number...Tonnes/year 265-059-9 … 7.7E+04 269-822-7 … 1.9E+07
Fraction of Regional tonnage used locally	5.0E-04
Maximum daily site tonnage	EC number...kg/day 265-059-9 … 1.1E+02 269-822-7 … 2.6E+04
Frequency and duration of use:	Continuous release
Other conditions affecting environmental exposure:	Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).
Conditions and measures related to sewage treatment plant:	Not applicable as there is no release to wastewater.
Conditions and measures related to external treatment of waste for disposal:	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	This substance is consumed during use and no waste from the substance is generated.
RCR - Air Compartment Driven:	EC number ... Value 265-059-9 … 1.6E-02 269-822-7 … 2.4E-02
RCR - Water Compartment Driven:	EC number ... Value 265-059-9 … 6.0E-03 269-822-7 … 8.8E-02

Section 3 Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source	Not available.

Exposure estimation and reference to its source - Consumers	
Exposure assessment (human):	ECETOC TRA consumer v3
Exposure estimation and reference to its source	Not available.

Section 4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	Further details on scaling and control technologies are provided in SPERC factsheet.
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.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition	Mixture
Code	SFR2124
Product name	Diesel Marine Leger (DML)

Section 1: Title

Short title of the exposure scenario	Use in fuel (Vacuum Gas Oils, Hydrocracked Gas Oils & Distillate Fuels (VHGO)) - Industrial
List of use descriptors	**Identified use name:** Use in fuel - Industrial **Process Category:** PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16 **Sector of end use:** SU03 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC07 **Specific Environmental Release Category:** ESVOC SpERC 7.12a.v1
Processes and activities covered by the exposure scenario	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Assessment Method	See Section 3

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product characteristics:

Physical state:	Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure With potential for aerosol generation
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)
Other conditions affecting workers exposure:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.
Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers: Wear suitable gloves tested to EN374.

Drum/batch transfers: Wear suitable gloves tested to EN374.

Use in fuel closed systems: No other specific measures identified.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage: Handle substance within a closed system.

Section 2.2: Control of environmental exposure

Product characteristics:	Substance is complex UVCB. Predominantly hydrophobic
Amounts used:	
Fraction of EU tonnage used in region	0.1
Regional use tonnage	EC number ... Tonnes/year 265-059-9 … 5.0E+05 265-078-2 … 3.6E+02 269-822-7 … 3.7E+06
Fraction of Regional tonnage used locally	EC number ... Value 265-059-9 … 1.0E+00 265-078-2 … 1.0E+00 269-822-7 … 4.0E-01
Annual site tonnage	EC number ... Tonnes/year 265-059-9 … 5.0E+05 265-078-2 … 3.6E+02 269-822-7 … 1.5E+06
Maximum daily site tonnage	EC number ... kg/day 265-059-9 … 1.7E+06 265-078-2 … 1.8E+04 269-822-7 … 5.0E+06
Frequency and duration of use:	Continuous release
Emission days	EC number ... days per year 265-059-9 … 300 265-078-2 … 20 269-822-7 … 300
Environment factors not influenced by risk management:	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process (initial release prior to RMM)	5.0E-03
Release fraction to soil from process (initial release prior to RMM)	0
Release fraction to wastewater from process (initial release prior to RMM)	EC number ... Value 265-059-9 … 1.8E-07 265-078-2 … 1.0E-05 269-822-7 … 1.0E-05
Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	Risk from environmental exposure is driven by freshwater sediment. EC number 265-059-9; 265-078-2: If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. EC number 269-822-7: If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 74.1%.
Treat air emission to provide a typical removal efficiency of	95 %
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of	EC number ... % 265-059-9 … 87.0 265-078-2 … 16.5 269-822-7 … 98.7
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of	EC number ... % 265-059-9 … 0.0 265-078-2 … 0.0 269-822-7 … 74.1
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant:	Not applicable as there is no release to wastewater.
Estimated substance removal from wastewater via on-site sewage treatment	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 94.9
Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 98.7

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal	EC number ... kg/day 265-059-9 … 1.8E+06 265-078-2 … 2.5E+05 269-822-7 … 5.0E+06
Assumed on-site sewage treatment plant flow	2000 (m3/d)
Conditions and measures related to external treatment of waste for disposal:	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	This substance is consumed during use and no waste from the substance is generated.
RCR - Air Compartment Driven:	EC number ... Value 265-059-9 … 2.2E-01 265-078-2 … 7.0E-05 269-822-7 … 2.8E-02
RCR - Water Compartment Driven:	EC number ... Value 265-059-9 … 9.1E-01 265-078-2 … 7.2E-02 269-822-7 … 9.1E-01

Section 3: Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: Guidance to check compliance with the exposure scenario

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.
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 do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition	Mixture
Code	SFR2124
Product name	Diesel Marine Leger (DML)

Section 1: Title

Short title of the exposure scenario	Use in fuel (Vacuum Gas Oils, Hydrocracked Gas Oils & Distillate Fuels (VHGO)) - Professional
List of use descriptors	**Identified use name:** Use in fuel - Professional **Process Category:** PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16 **Sector of end use:** SU22 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC09a, ERC09b **Specific Environmental Release Category:** ESVOC SpERC 9.12b.v1
Processes and activities covered by the exposure scenario	Covers the use as a fuel (or fuel additives and additive components) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.
Assessment Method	See Section 3

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product characteristics:

Physical state:	Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure With potential for aerosol generation
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)
Other conditions affecting workers exposure:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.
Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

Bulk transfers: Wear suitable gloves tested to EN374.

Drum/batch transfers: Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374.

Refuelling: Wear suitable gloves tested to EN374.

Use in fuel (closed systems): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage: Store substance within a closed system.

Section 2.2: Control of environmental exposure

Product characteristics:	Substance is complex UVCB. Predominantly hydrophobic
Amounts used:	
Fraction of EU tonnage used in region	0.1
Regional use tonnage	EC number ... Tonnes/year 265-059-9 … 3.4E+04 265-078-2 … 3.8E+04 269-822-7 … 6.9E+06
Fraction of Regional tonnage used locally	0.0005
Annual site tonnage	EC number ... Tonnes/year 265-059-9 … 1.7E+01 265-078-2 … 1.9E+01 269-822-7 … 3.4E+03
Maximum daily site tonnage	EC number ... kg/day 265-059-9 … 4.7E+01 265-078-2 … 5.2E+01 269-822-7 … 9.4E+03
Frequency and duration of use:	Continuous release
Emission days	365 days per year
Environment factors not influenced by risk management:	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process (initial release prior to RMM)	EC number ... Value 265-059-9 … 1.0E-04 265-078-2 … 1.0E-04 269-822-7 … 1.0E-03
Release fraction to soil from process (initial release prior to RMM)	0.00001
Release fraction to wastewater from process (initial release prior to RMM)	0.00001
Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	EC number 265-059-9: Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). No wastewater treatment required. EC number 265-078-2: Risk from environmental exposure is driven by freshwater. No wastewater treatment required. EC number 269-822-7: Risk from environmental exposure is driven by freshwater. If discharging to municipal sewage treatment plant, no on-site wastewater treatment required.
Treat air emission to provide a typical removal efficiency of	Not applicable.
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of	≥0 %
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of	EC number ...% 265-059-9 … 0.0 265-078-2 … 0.0 269-822-7 … 62.9
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant:	Not applicable as there is no release to wastewater.
Estimated substance removal from wastewater via on-site sewage treatment	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 94.9
Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 94.9

Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal	EC number ... kg/day 265-059-9 … 2.9E+03 265-078-2 … 6.2E+04 269-822-7 … 6.9E+04
Assumed on-site sewage treatment plant flow	2000 (m3/d)
Conditions and measures related to external treatment of waste for disposal:	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	This substance is consumed during use and no waste from the substance is generated.
RCR - Air Compartment Driven:	EC number ... Value 265-059-9 … 1.6E-02 265-078-2 … 1.6E-04 269-822-7 … 2.4E-02
RCR - Water Compartment Driven:	EC number ... Value 265-059-9 … 4.2E-03 265-078-2 … 7.9E-04 269-822-7 … 7.7E-02

Section 3: Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Hydrocarbon Block Method (Petrorisk)
Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: Guidance to check compliance with the exposure scenario

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.
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 do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition	Mixture
Code	SFR2124
Product name	Diesel Marine Leger (DML)

Section 1: Title

Short title of the exposure scenario	Distribution (Vacuum Gas Oils, Hydrocracked Gas Oils & Distillate Fuels (VHGO))
List of use descriptors	**Identified use name:** Distribution of substance **Process Category:** PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15 **Sector of end use:** SU03 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC04, ERC05, ERC06a, ERC06b, ERC06c, ERC06d, ERC07 **Specific Environmental Release Category:** ESVOC SpERC 1.1b.v1
Processes and activities covered by the exposure scenario	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, maintenance and associated laboratory activities.
Assessment Method	See Section 3

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product characteristics:

Physical state:	Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure With potential for aerosol generation
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)
Other conditions affecting workers exposure:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Assumes a good basic standard of occupational hygiene is implemented

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.
Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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

General exposures (open systems): Wear suitable gloves tested to EN374.

Process sampling: No other specific measures identified.

Laboratory activities: No other specific measures identified.

Bulk closed loading and unloading: Handle substance within a closed system. Wear suitable gloves tested to EN374.

Bulk open loading and unloading: Wear suitable gloves tested to EN374.

Drum and small package filling: Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Storage: Handle substance within a closed system.

Section 2.2: Control of environmental exposure

Product characteristics:	Substance is complex UVCB. Predominantly hydrophobic
Amounts used:	
Fraction of EU tonnage used in region	0.1
Regional use tonnage	EC number ... Tonnes/year 265-059-9 … 9.6E+05 265-078-2 … 2.3E+05 269-822-7 … 3.1E+07
Fraction of Regional tonnage used locally	0.002
Annual site tonnage	EC number ... Tonnes/year 265-059-9 … 1.9E+03 265-078-2 … 4.6E+02 269-822-7 … 6.1E+04
Maximum daily site tonnage	EC number ... kg/day 265-059-9 … 1.9E+04 265-078-2 … 2.3E+04 269-822-7 … 2.0E+05
Frequency and duration of use:	Continuous release
Emission days	EC number ... days per year 265-059-9 … 100 265-078-2 … 20 269-822-7 … 300
Environment factors not influenced by risk management:	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process (initial release prior to RMM)	EC number ... Value 265-059-9 … 1.0E-04 265-078-2 … 1.0E-04 269-822-7 … 1.0E-03
Release fraction to soil from process (initial release prior to RMM)	0.00001
Release fraction to wastewater from process (initial release prior to RMM)	EC number ... Value 265-059-9 … 1.0E-07 265-078-2 … 1.0E-06 269-822-7 … 1.0E-05
Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	EC number 265-059-9: Risk from environmental exposure is driven by terrestrial secondary poisoning. No wastewater treatment required. EC number 265-078-2: Risk from environmental exposure is driven by freshwater sediment. No wastewater treatment required. EC number 269-822-7: Risk from environmental exposure is driven by freshwater secondary poisoning. If discharging to municipal sewage treatment plant, no on-site wastewater treatment required.
Treat air emission to provide a typical removal efficiency of	90 %
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of	EC number ... % 265-059-9 … 0.0 265-078-2 … 0.0 269-822-7 … 83.3
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of	0 %
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.

Conditions and measures related to sewage treatment plant:	Not applicable as there is no release to wastewater.
Estimated substance removal from wastewater via on-site sewage treatment	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 94.9
Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 94.9
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal	EC number ... kg/day 265-059-9 … 9.6E+04 265-078-2 … 2.5E+06 269-822-7 … 6.7E+05
Assumed on-site sewage treatment plant flow	2000 (m3/d)
Conditions and measures related to external treatment of waste for disposal:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Conditions and measures related to external recovery of waste:	External recovery and recycling of waste should comply with applicable local and/or national regulations.
RCR - Air Compartment Driven:	EC number ... Value 265-059-9 … 2.0E-01 265-078-2 … 3.7E-05 269-822-7 … 2.4E-02
RCR - Water Compartment Driven:	EC number ... Value 265-059-9 … 8.6E-03 265-078-2 … 9.4E-03 269-822-7 … 2.0E-01

Section 3: Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: Guidance to check compliance with the exposure scenario

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.
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 do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition	Mixture
Code	SFR2124
Product name	Diesel Marine Leger (DML)

Section 1: Title

Short title of the exposure scenario	Use as an intermediate (Vacuum Gas Oils, Hydrocracked Gas Oils & Distillate Fuels (VHGO))
List of use descriptors	**Identified use name:** Use as an intermediate **Process Category:** PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15 **Sector of end use:** SU08, SU09 **Subsequent service life relevant for that use:** No. **Environmental Release Category:** ERC06a **Specific Environmental Release Category:** ESVOC SpERC 6.1a.v1
Processes and activities covered by the exposure scenario	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).
Assessment Method	See Section 3

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product characteristics:

Physical state:	Liquid, vapour pressure < 0.5 kPa at Standard Temperature and Pressure With potential for aerosol generation
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)
Other conditions affecting workers exposure:	Operation is carried out at elevated temperature (> 20°C above ambient temperature) Assumes a good basic standard of occupational hygiene is implemented

Contributing scenarios: Operational conditions and risk management measures

General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance.
Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions.

General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop.

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

General exposures (open systems): Wear suitable gloves tested to EN374.

Process sampling: No other specific measures identified.

Bulk closed loading and unloading: Handle substance within a closed system. Wear suitable gloves tested to EN374.

Bulk open loading and unloading: Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance: Drain down system prior to equipment break-in or maintenance. Wear

chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Laboratory activities: No other specific measures identified.

Bulk product storage: Store substance within a closed system.

Section 2.2: Control of environmental exposure

Product characteristics:	Substance is complex UVCB. Predominantly hydrophobic
Amounts used:	
Fraction of EU tonnage used in region	0.1
Regional use tonnage	EC number ... Tonnes/year 265-059-9 … 3.5E+05 265-078-2 … 1.9E+05 269-822-7 … 1.0E+06
Fraction of Regional tonnage used locally	EC number ... Value 265-059-9 … 4.3E-02 265-078-2 … 7.8E-02 269-822-7 … 1.5E-02
Annual site tonnage	1.5E+04
Maximum daily site tonnage	5.0E+04
Frequency and duration of use:	Continuous release
Emission days	300
Environment factors not influenced by risk management:	
Local freshwater dilution factor	10
Local marine water dilution factor	100
Release fraction to air from process (initial release prior to RMM)	EC number ... Value 265-059-9 … 0.0E+00 265-078-2 … 1.0E-04 269-822-7 … 1.0E-03
Release fraction to soil from process (initial release prior to RMM)	0.001
Release fraction to wastewater from process (initial release prior to RMM)	EC number ... Value 265-059-9 … 5.9E-06 265-078-2 … 3.0E-05 269-822-7 … 3.0E-04
Technical conditions and measures at process level (source) to prevent release:	Common practices vary across sites thus conservative process release estimates used.
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:	Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. EC number 265-059-9; 265-078-2: If discharging to municipal sewage treatment plant, no on-site wastewater treatment required. EC number 269-822-7:If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of 13.5%.
Treat air emission to provide a typical removal efficiency of	80 %
Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of	EC number ... % 265-059-9 … 87.0 265-078-2 … 90.1 269-822-7 … 95.6
If discharging to municipal sewage treatment plant, provide the required on-site wastewater removal efficiency of	EC number ... % 265-059-9 … 0.0 265-078-2 … 0.0 269-822-7 … 13.5
Organisational measures to prevent/limit release from site:	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Conditions and measures related to sewage treatment plant:	Not applicable as there is no release to wastewater.
Estimated substance removal from wastewater via on-site sewage treatment	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 94.9

Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs	EC number ... % 265-059-9 … 88.2 265-078-2 … 94.0 269-822-7 … 95.6
Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal	EC number ... kg/day 265-059-9 … 5.5E+04 265-078-2 … 8.2E+04 269-822-7 … 5.0E+04
Assumed on-site sewage treatment plant flow	2000 (m3/d)
Conditions and measures related to external treatment of waste for disposal:	This substance is consumed during use and no waste from the substance is generated.
Conditions and measures related to external recovery of waste:	This substance is consumed during use and no waste from the substance is generated.
RCR - Air Compartment Driven:	EC number ... Value 265-059-9 … 1.6E-01 265-078-2 … 4.1E-05 269-822-7 … 8.6E-03
RCR - Water Compartment Driven:	EC number ... Value 265-059-9 … 9.1E-01 265-078-2 … 6.1E-01 269-822-7 … 9.1E-01

Section 3: Exposure estimation and reference to its source

Exposure estimation and reference to its source - Environment	
Exposure assessment (environment):	Hydrocarbon Block Method (Petrorisk)

Exposure estimation and reference to its source - Workers	
Exposure assessment (human):	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 4: Guidance to check compliance with the exposure scenario

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.
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 do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.