

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name: Fuel Oil, Heavy Fuel Oil
Name of the Substance: Fuel oil, residual; Heavy Fuel oil
EC No.: 270-675-6
CAS No.: 68476-33-5
Index No.: 649-024-00-9
REACH Registration No.: 01-2119474894-22-0029

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

Relevant identified uses: liquid fuel.
Uses advised against: no other use is recommended.

1.3. Details of the supplier of the safety data sheet**Manufacturer:**

Public Company *ORLEN Lietuva*
Juodeikiai, LT-89453 Mažeikiai District, Lithuania
Tel.: +370 443 92121
E-mail address: post@orlenlietuva.lt

1.4. Emergency telephone number

Poison Information Bureau. In case of poisoning (24/7): +370 5 236 20 52 or +370 687 53 378
General helpline number in Europe (24/7): 112

SECTION 2: HAZARDS IDENTIFICATION**2.1. Classification of the substance or mixture**

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

Acute Tox. 4, H332

Muta. 2, H341

Carc. 1B, H350

Repr. 2, H361 (Specific effect: unborn child)

STOT RE 2, H373 (Organs affected: blood, thymus, liver)

Aquatic Chronic 1, H410 (M=1)

For the full text of Hazard Statements: see SECTION 16.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

Signal word: DANGER

Hazard pictogram:



GHS08



GHS07



GHS09

Hazard Statements:

H332: Harmful if inhaled.

H341: Suspected of causing genetic defects.

H350: May cause cancer.

H361: Suspected of damaging fertility or the unborn child.

H373: May cause damage to organs.

H410: Very toxic to aquatic life with long lasting effects.



FUEL OIL

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

2/17

Precautionary statements:

P201: Obtain special instructions before use.

P260: Do not breathe dust, fume, gas, mist, vapours, spray.

P273: Avoid release to the environment.

P280: Wear protective gloves, protective clothing, eye protection, face protection, hearing protection.

P308+P313: IF exposed or concerned: Get medical advice/attention.

Additional labeling requirements

EUH066: Repeated exposure may cause skin dryness or cracking.

Restricted to professional users due to classification as carcinogenic Category 1B, except for fuel uses.

2.3. Other hazards

Does not contain any substances assessed to be a PBT or a vPvB or having endocrine disrupting properties with concentration equal to or greater than 0.1 %.

Product is flammable liquid which when at ambient temperature is attributed to products of low hazard.

Contact with hot product, when the product is heated up for warehousing or handling purposes, may cause thermal burns. Product may contain a considerable content of polycyclic aromatic hydrocarbons, which are classified as carcinogens.

Hydrogen sulfide may accumulate in the upper space of storage tanks containing product. Consequently, hydrogen sulfide may reach extremely hazardous concentrations. When filling tanks or tank cars, hydrogen sulphide together with hot product vapour may be emitted to the environment. Vapour and gas released from hot product may affect respiratory organs; therefore, use of appropriate personal protective equipment is necessary.

Formation of toxic compounds with other materials in water and air at ambient temperature is not characteristic to product. Hydrocarbons of product are harmful to land and aquatic life; may cause adverse long-term effects in the aquatic environment and soil.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Trade name: Fuel Oil, Heavy Fuel Oil

Substance Name	Concentration, %	Labelling according to CLP Regulation
Fuel oil, residual; Heavy Fuel oil EC No.: 270-675-6 CAS No.: 68476-33-5 Index No.: 649-024-00-9 REACH Registration No.: 01-2119474894-22-0029	Up to 100	Acute Tox. 4, H332 Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361 (Specific effect: Unborn child) STOT RE 2, H373 (Organs affected: blood, thymus, liver) Aquatic Chronic 1, H410 (M=1)
Additives	0-0.015	

Contains substances for which workplace exposure limit value is established.

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

For full text of H-statements, see SECTION 16.

3.2. Mixtures

Not applicable.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Hydrogen sulphide (H₂S) can accumulate in the headspace of product storage tanks and reach potentially hazardous concentrations.

Inhalation

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

If casualty is unconscious and:

- Not breathing – ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. If necessary, give external cardiac massage and obtain medical assistance.
- Breathing – place in the recovery position. Administer oxygen if necessary.

Obtain medical assistance if breathing remains difficult.

If there is any suspicion of inhalation of H₂S:

- Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures. Remove casualty to fresh air as quickly as possible.
- Immediately begin artificial respiration if breathing has ceased.
- Provision of oxygen mask may help.
- Obtain medical advice for further treatment.

Skin Contact

Immediately remove contaminated clothing and footwear and dispose of safely. Wash affected area thoroughly with soap and water. Never use gasoline, kerosene or other solvents to wash the affected skin. Seek medical attention in case of irritation, swelling or redness of the skin.

When using high-pressure equipment, injection of product can occur. If high-pressure injuries occur, immediately seek professional medical attention. Do not wait for symptoms to develop.

May cause burn in case of contact with product at high temperature. For minor thermal burns: Cool the burn. Hold the burned area under cold running water for at least five minutes, or until the pain subsides. However, body hypothermia must be avoided. Do not put ice on the burn. Remove non-sticking garments carefully. DO NOT attempt to remove portions of clothing glued to burnt skin but cut round them. Seek medical attention in all cases of serious burns.

Eye Contact

Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.

If hot product is splashed into the eye, it should be cooled immediately to dissipate heat, under cold running water. Immediately obtain specialist medical assessment and treatment for the casualty.

Ingestion

Except for deliberate acts, ingestion of large amounts is unlikely. Do NOT induce vomiting. Ask for medical assistance.

Do not give anything by mouth to an unconscious person.

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

Inhalation – irritation of the respiratory tract due to excess fumes, mists or vapour exposure.

Skin contact – dry skin, irritation in case of repeated or prolonged exposure.

Eye contact – slight irritation (unspecific). May cause burn in case of contact with product at high temperature.

Ingestion – few or no symptoms are expected. If any, nausea and diarrhea might occur.

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

Treatment according to symptoms.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:

- Foam (specifically trained personnel only),
- Water fog (specifically trained personnel only),
- Dry chemical powder,
- Carbon dioxide,
- Inert gases (subject to regulations),
- Sand or earth,
- Steam.

Unsuitable extinguishing media:

Do not use direct water jets on the burning product; they could cause splattering and spread the fire.

Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Combustion Products

Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

If sulfur compounds are present in appreciable amounts, combustion products may include also H₂S and SO_x (sulfur oxides) or sulfuric acid.

Specific Hazards

Spraying water jet onto product burning in tank cars or storage tanks is not recommended because the mixture of hot product and water may cause spontaneous boil, outbreak from tank and splash. Tank cars and storage with product, which are in the direct vicinity of the fire, should be cooled by water jets from the safe distance.

5.3. Advice for firefighters

Use adequate breathing apparatus and impervious protective clothes. In case of a large fire or in confined or poorly ventilated spaces wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Product, depending on its temperature, may be liquid, semi-solid and solid. Stop or contain leak at the source if safe to do so. Avoid direct contact with released material. Stay upwind. In case of large spillages, alert occupants in downwind areas.

Keep non-involved personnel away from the area of spillage. Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares).

When the presence of dangerous amounts of H₂S around the spilled product is suspected or proved, additional or special actions may be warranted, including access restrictions, use of special protection equipment, procedures and personnel training.

If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material, if necessary heat resistant and insulated. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated.

NOTE: gloves made of PVA are not water-resistant, and are not suitable for emergency use.

Work helmet. Antistatic non-skid safety shoes or boots, if necessary heat-resistant. Goggles or face shield, if splashes or contact with eyes is possible or anticipated.

Respiratory protection: A half or full-face respirator with filter(s) for organic vapours (and when applicable for H₂S) or a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

6.2. Environmental precautions

Spillages onto Land

Prevent product from entering sewers, rivers, waterways or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. Let hot product cool down naturally.

Large spillages may be cautiously covered with foam, if available, to limit fire risk. Do not use direct jets.

When inside buildings or confined spaces, ensure adequate ventilation.

Spillages on water or at sea

Stop or contain leak at the source if safe to do so. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means.

6.3. Methods and material for containment and cleaning up

Spillages onto Land

Absorb spilled product with suitable non-combustible materials. Collect free product with suitable means. Transfer collected product and other contaminated materials to suitable containers for recycle, recovery or safe disposal.

In case soil contamination, remove contaminated soil and treat this in accordance with local regulations.

Spillages on Water or at Sea

Collect spilled product by absorbing with specific floating absorbents. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable containers for recycle, recovery or safe disposal.

Product which is denser than water will sink to the bottom, and usually no intervention will be feasible. If possible, collect the product and contaminated materials with mechanical means, and store/dispose of according to relevant regulations. In special situations (to be assessed on case-by case basis, according to expert judgment and local conditions), excavations of trenches on the bottom to collect the product, or burying the product with sand may be a feasible option.

Additional information

NOTE: recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.

Concentration of H₂S in tank headspaces may reach hazardous values, especially in case of prolonged storage. This situation is especially relevant for those operations which involve direct exposure to the vapours or gas in the tank.

Spillages of limited amounts of products, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which are unlikely to entail exposure to dangerous

concentrations. As H₂S has a density greater than ambient air, a possible exception may regard the build-up of dangerous concentrations in specific spots, like trenches, depressions or confined spaces. In all these circumstances, however, the correct actions should be assessed on a case-by-case basis.

Spillages of hot product in confined spaces may be hazardous due to toxic gas and hydrocarbons, the concentration of which may reach hazardous limits.

6.4. Reference to other sections

See SECTION 8 for Exposure controls/personal protection. See SECTION 13 for Disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Obtain special instructions before use. Avoid release to the environment. Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed.

A specific assessment of inhalation risks from the presence of H₂S in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases must be made to help determine controls appropriate to local circumstances.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Use and store only outdoors or in a well-ventilated area. Avoid contact with the product.

7.2. Conditions for safe storage, including any incompatibilities

Handling

During product transfer activities (loading and unloading of mobile tanks) and during sampling there is a risk of static electrical discharge, therefore, precautionary measures against static electricity shall be taken.

For the product transportation hermetic mobile tank cars for flammable liquids should be used. Ground/bond containers, tanks and transfer/receiving equipment.

The vapour is heavier than the air. Beware of accumulation in pits and confined spaces. Use adequate personal protective equipment as required. Avoid contact with skin. Do not breathe fume/mist/vapours. Precautions should be taken to avoid skin burns when handling hot product.

Storage

Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. Store product only in tanks or containers designed for flammable liquids.

Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills.

Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.

Before entering storage tanks and commencing any operation in a confined area check the atmosphere for oxygen content, hydrogen sulphide (H₂S) and flammability.

Store separately from oxidising agents.

Recommended and Unsuitable Materials for Storage

Recommended materials: For containers (tanks), or container linings use mild steel, stainless steel.

Unsuitable materials: some synthetic materials may be unsuitable for containers (tanks) or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer.

Container Advice

If the product is supplied in containers: Keep only in the original container or in a suitable container for this kind of product. Keep containers tightly closed and properly labelled.



FUEL OIL

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

7/17

Empty containers (tanks) may contain combustible product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.

Hygiene measures

Ensure that proper housekeeping measures are in place. Contaminated materials should not be allowed to accumulate in the workplace and should never be kept inside the pockets. Keep away from food and beverages. Do not eat, drink or smoke while using this product. Wash the hands thoroughly after handling. Change contaminated clothes at the end of working shift.

7.3. Specific end use(s)

Product is used as a liquid fuel for the production of heat and power.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Substances for which occupational exposure limit values need to be controlled in the work environment:

Fuel oil, residual; Heavy Fuel oil, CAS No.: 68476-33-5
Lithuanian Hygiene Standard HN 23:2011: not established.

Exposure Limits

Comply with established national occupational exposure limits. Where not established, the following short-term exposure limit is recommended – 300 mg/m³.

Biological limit values (BLV)

No biological limit value has been established for this substance.

Recommended monitoring procedures

Standard monitoring procedures must be followed.

Follow the monitoring measures applied in the country.

Derived No Effect Level DNEL

Derived No Effect Level (DNEL) or other conclusions of hazardous health effects:

Route of exposure	Type of exposure	Hazard assessment conclusion	Most sensitive endpoint
Workers			
Systemic effects			
Inhalation	Long term exposure	DNEL 0.18 mg/m ³	Developmental toxicity / teratogenicity
Inhalation	Acute/short term exposure	DNEL 4716.8 mg/m ³	Acute toxicity (inhalation)
Dermal	Long term exposure	DNEL 0.065 mg/kg bw/day	Developmental toxicity / teratogenicity (dermal)
Dermal	Acute/short term exposure	No hazard identified	
Local effects			
Inhalation	Long term exposure	No hazard identified	
Inhalation	Acute/short term exposure	No hazard identified	
Dermal	Long term exposure	High hazard (no threshold derived)	
Dermal	Acute/short term exposure	No hazard identified	
Eyes	Local effects	No hazard identified	



FUEL OIL

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

8/17

General Population

Systemic effects

Inhalation	Long term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Inhalation	Acute/short term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Dermal	Long term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Dermal	Acute/short term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Oral	Long term exposure	DNEL 0.15 mg/m ³	Repeated dose toxicity (Dermal)
Oral	Acute/short term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	

Local effects

Inhalation	Long term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Inhalation	Acute/short term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Dermal	Long term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Dermal	Acute/short term exposure	Hazard unknown but no further hazard information necessary as no exposure expected	
Eyes	Local effects	Hazard unknown but no further hazard information necessary as no exposure expected	

Predicted No Effect Concentrations PNEC

Substance is a hydrocarbon UVCB: technically, the PNEC is not determined or cannot be determined.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Reduce exposure by using closed systems, sufficient general and local ventilation. If exposure is likely, restrict access to area. Provide training for staff.

During various technical and process operations gasoline vapour may be emitted into the environment, therefore the concentration in working environment air shall be controlled to the minimum allowed limit.

8.2.2. Individual protection measures, such as personal protective equipment

a) Eye/face protection

Wear safety glasses in circumstances where eye contact may occur (e.g. acc. to EN 166).

b) Skin protection

i) Hand protection

Use oil product resistant gloves (tested and compliant to EN 374). Check before use. Use only with clean hands. Contaminated gloves should be replaced. Always seek advice from glove suppliers for use, storage, care and replacement of gloves.

ii) Other

Wear protective clothes (according to EN 465) and other protection equipment. Heat resistant clothes and boots should be worn to avoid thermal burns when handling hot product. Cover your face, head and neck. Protective clothing should be regularly inspected and maintained.

c) Respiratory protection

If during operations the exposure of employees to large amounts of product vapour and gas is inevitable, suitable respiratory protective equipment, such as A2 filtering mask or analogous should be applied (e.g. according to EN 14387). When working in vessel internals or other confined spaces **do not** use filtering masks but the special self-contained protective equipment. Respiratory protection equipment should be selected and used in accordance with the manufacturer's instructions and requirements established by the law.

Approved self-contained or air supplying respiratory equipment should be used in places potential for hydrogen sulphide accumulation. Respiratory protection equipment should be selected and used in accordance with the manufacturer's instructions and requirements established by the law.

d) Thermal hazards

If applicable, use heat-resistant personal protective equipment.

Hygiene measures

Comply with personal hygiene requirements. Wash hands before breaks and after work. Wash immediately in case of skin contact.

8.2.3. Environmental exposure controls

To ensure the compliance of ventilation and process equipment with requirements of environmental legislation, emissions of such equipment are subject to verification. In some cases vapour filtering installations or process equipment modifications may be necessary for the reduction of emission to allowed limit.

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

a) Physical state	Viscous liquid
b) Colour	Black
c) Odour	Typical to hydrocarbons
d) Melting point/freezing point	Below 30 °C
e) Boiling point or initial boiling point and boiling range	160 – > 750 °C
f) Flammability	Not classified
g) Lower and upper explosion limit	1.0–6.0 % vol.
h) Flash point	> 65 °C
i) Auto-ignition temperature	220–550 °C
j) Decomposition temperature	Not applicable
k) pH	Not applicable
l) Kinematic viscosity	< 50 mm ² /s (at 100 °C)
m) Solubility	Not applicable to UVCB substances
n) Partition coefficient n-octanol/water (log value)	Not applicable to UVCB substances
o) Vapour pressure	0.02–0.79 kPa (at 120 °C)
p) Density and/or relative density	> 1000 g/cm ³ (at 15 °C)
q) Relative vapour density	No data
r) Particle characteristics	Not applicable



FUEL OIL

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

10/17

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Not classified as flammable.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

Stable at ambient temperature.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

High ambient temperature.

10.5. Incompatible materials

Avoid contact with strong oxidizing agents.

10.6. Hazardous decomposition products

Overheating in storage may cause partial decomposition with vaporization of toxic hydrogen sulphide (H₂S) gas and generation of fumes, carbon dioxide and other harmful gases. Concentration of toxic gas in a confined space or premises may reach a hazardous limit.

SECTION 11: TOXICOLOGICAL INFORMATION

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

a) acute toxicity

Not classified for acute oral toxicity based on an oral LD₅₀ = 4320 mg/kg bw (females) and 5270 mg/kg bw (males) (test method equivalent or similar to OECD 401).

Based on acute inhalation data, classified as harmful by inhalation, Cat. 4, H332 (harmful by inhalation). LC₅₀ = 4100 mg/l for male and female rats (test method similar to OECD 403).

Not classified for acute dermal toxicity based on a dermal LD₅₀ of > 2000 mg/kg body weight for male and female rabbits, respectively (test method equivalent or similar to OECD 434).

b) skin corrosion/irritation

Does not meet the classification criteria based on available data. Test method equivalent or similar to OECD 404.

c) serious eye damage/irritation

Does not meet the classification criteria based on available data (weight of evidence approach).

d) respiratory or skin sensitisation

Does not meet the classification criteria based on available data. Test method equivalent or similar to OECD 406.

e) germ cell mutagenicity

Classified as mutagenic, Cat. 2, H341: Suspected of causing genetic defects (weight of evidence approach).

f) carcinogenicity

Classified as carcinogenic, Cat. 1B, H350: May cause cancer.

Contains relatively high concentrations of polycyclic aromatic compounds (PAC) which considered genotoxic carcinogens. Response may have been mediated by a non-genotoxic mechanism, involving repeated skin damage.

g) reproductive toxicity

Classified as toxic to reproduction, Cat. 2, H361: Suspected of damaging fertility or the unborn child. NOAEL for maternal and developmental toxicity = 0.05 mg/kg bw/day (weight of evidence approach).

h) STOT-single exposure

Does not meet the classification criteria based on available data (weight of evidence approach).

i) STOT-repeated exposure

Classified as Specific Target Organ Toxicant upon repeated exposure, Cat. 2, H373: May cause damage to organs through prolonged or repeated exposure (Organs affected: blood, thymus, liver). NOAEL for systemic toxicity (neat) = 10 mg/kg bw/d (males), 1 mg/kg bw/d (females), LOAEL for local effects (neat, skin irritation) = 1 mg/kg bw/d (males and females) (test method equivalent or similar to OECD 410).

j) aspiration hazard

Does not meet the classification criteria based on available data (weight of evidence approach).

Symptoms related to the physical, chemical and toxicological characteristics, delayed and immediate effects as well as chronic effects from short and long-term exposure

Accidental contact of cold product with eyes causes transient stinging and redness. Hot product contact with eyes or skin causes thermal burns. Product is irritating to skin and causes dryness. Product vapour is irritating to eyes, nose and throat. When hydrogen sulphide is present in vapour, may be toxic by inhalation.

Due to polycyclic aromatic hydrocarbons potentially contained in product, prolonged or repeated skin contact may eventually result in dermatitis and other irreversible skin disorders including cancer. The inhalation of vapour and gas containing polycyclic aromatic hydrocarbons over long periods may result in hazardous outcome and health disorders including lung cancer.

11.2 Information on other hazards

Endocrine disrupting properties

Not applicable. The substance is not considered an endocrine disruptor.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Spilled product pollutes environment and direct contact is harmful to fauna and flora. Spills may form a film on water surfaces causing physical damage to aquatic life. Oxygen transfer can also be impaired due to the formed film.

Classified as hazardous to the aquatic environment — Chronic, Cat. 1, H410: Very toxic to aquatic life with long lasting effects.

Short term toxicity to fish

The 96 h LL₅₀ for freshwater fish (*Oncorhynchus mykiss*) is 79 mg/l (based on data of similar substances).

Long-term toxicity to fish

The estimated freshwater fish NOEL value is 0.1 mg/l based on mortality.

Short-term toxicity to aquatic invertebrates

EL₅₀ (daphnia, 48 h) 0.22 mg/l based on mobility (based on data of similar substances).

Long-term toxicity to aquatic invertebrates

The estimated freshwater invertebrate NOEL value is 0.27 mg/l based on immobility and numbers of live young produced per adult by Day 21.

Toxicity to aquatic algae and cyanobacteria

EL₅₀ (*Pseudokirchneriella subcapitata*, 72 h) value 0.32 mg/l and NOELR was 0.05 mg/l based on growth rate.

Toxicity to microorganisms

The estimated 72 h LL₅₀ value for *Tetrahymena pyriformis* is >1000 mg/l and the estimated NOEL is 14.91 mg/l.

12.2. Persistence and degradability

Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance.

12.3. Bioaccumulative potential

Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance.

12.4. Mobility in soil

Substance is a hydrocarbon UVCB. Standard tests for this endpoint are intended for single substances and are not appropriate for the risk assessment of this complex substance.

12.5. Results of PBT and vPvB assessment

This substance does not contain constituents included in the SVHC candidate list as PBT/vPvB at concentrations above 0.1%.

12.6. Endocrine disrupting properties

This material does not contain any hydrocarbon structures that have been identified as having endocrine disrupting properties at concentrations equal to or greater than 0.1%.

12.7. Other adverse effects

No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste disposed of by decontamination in accordance with national requirements and local regulations or via a licensed waste disposal contractor. Note hazards arising from waste, and undertake required safety measures when handling it. Personnel involved in waste handling should wear personal protective equipment.

Empty storage tanks and railway tank cars may contain product residues; therefore, warning labels are to be retained as a guide to the safe tank handling and waste disposal. Empty containers represent a fire hazard as they may contain flammable product residues and vapour.

DO NOT weld, solder and repair in other ways the tanks without proper preparation.

SECTION 14: TRANSPORT INFORMATION

Labels



Marine pollutant

Land transport (ADR-RID)



FUEL OIL

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

13/17

14.1. UN number or ID number

3082

14.2. UN proper shipping name

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Fuel Oil, Heavy Fuel Oil)

14.3. Transport hazard class(es)

9

14.4. Packing group

III

14.5. Environmental hazards

Environmentally hazardous.

14.6. Special precautions for user

Hazard identification No.	90
Classification code	M6
Labels	9
Special provisions	274, 335, 375, 601
Limited and excepted quantities	5 L
Tunnel restriction code	3 (-)

For details on special provisions, see In chapter 3.3 of the ADR / RID regulation.
See also SECTION 7 of the SDS for handling and storage advice.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

Inland waterway transport (UN RTDG/ADN(R))

14.1. UN number or ID number

3082

14.2. UN proper shipping name

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Fuel Oil, Heavy Fuel Oil)

14.3. Transport hazard class(es)

9

14.4. Packing group

III

14.5. Environmental hazards

Environmentally hazardous.

14.6. Special precautions for user

Classification code	M6
Labels	9
Special provisions	274, 335, 375, 601
Limited and excepted quantities	5 L
Equipment required	PP

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

Marine transport (UN RTDG/IMDG)

14.1. UN number or ID number

3082

**SAFETY DATA SHEET**Acc. to Regulation (EC) No. 1907/2006 (REACH), Annex II
(including amendment of Commission Regulation (EU) 2020/878)**FUEL OIL**

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

14/17

14.2. UN proper shipping nameUN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Fuel Oil, Heavy Fuel Oil)**14.3. Transport hazard class(es)**

9

14.4. Packing group

III

14.5. Environmental hazards

Environmentally hazardous.

14.6. Special precautions for user

EmS number	F-A, S-F
Limited and excepted quantities	5 L
IBC instructions	IBC03
Special provisions	274, 909, 944

3082 is category A for stacking and separation

14.7. Maritime transport in bulk according to IMO instruments

IMO tank instructions T1

Air transport (UN RTDG/ICAO/IATA)**14.1. UN number or ID number**

3082

14.2. UN proper shipping nameUN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Fuel Oil, Heavy Fuel Oil)**14.3. Transport hazard class(es)**

9

14.4. Packing group

III

14.5. Environmental hazards

Environmentally hazardous.

14.6. Special precautions for user

Limited and excepted quantities	30 kg G
Special provisions	A97, A158, A197

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Relevant EU/international legislations:**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP)

**SAFETY DATA SHEET**Acc. to Regulation (EC) No. 1907/2006 (REACH), Annex II
(including amendment of Commission Regulation (EU) 2020/878)**FUEL OIL**

Issue: 2018-10-15

Revision: 2024-04-23

Version: 1.2/EN

15/17

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Council Regulation (EC) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 (REACH)

Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste

Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances

Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work

Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work

Council Directive 94/33/EC of 22 June 1994 on the protection of young people at work

European Agreement on the International Carriage of Dangerous Goods by Road / Waterways (ADR / MDG)

European Agreement on the International Carriage of Dangerous Goods by Air (IATA)

2000/532/EC: Commission Decision of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes

Regulation (EC) No 1907/2006 (REACH):

SVHC (Candidate List of substances of very high concern for Authorisation): Not applicable

REACH Annex XIV (Authorisation List): Not applicable

REACH Annex XVII (Substances restricted under REACH): Not applicable

Regulation (EU) No 649/2012 (PIC): Not applicable

Regulation (EC) No 1107/2009 (Plant protection products): Not applicable

Regulation (EU) No 528/2012 (Biocidal products): Not applicable

Regulation (EC) No 648/2004 (Detergents): Not applicable

Regulation (EC) No 1005/2009 (OSAM): Not applicable

Directive 2004/37/EC (related to exposure to carcinogens or mutagens at work): Not applicable

Note: Any subsequent updates, amendments and/or additions to the legislation should be duly considered. The list of legal acts is not exhaustive.

15.2. Chemical safety assessment

Chemical safety assessment has been conducted.

SECTION 16: OTHER INFORMATION

Revision of safety data sheet: 2024-04-23

Revised: all sections.

During the review of the SDS, the data presented were clarified and arranged in accordance with the European Commission Regulation (EU) No. 2020/878 requirements.

Abbreviations and acronyms:

ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR Agreement concerning the International Carriage of Dangerous Goods by Road

BLV Biological limit values

CAS Chemical Abstracts Service

CLP	Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures
DNEL	Derived No-Effect Level
EC	EINECS (European Inventory of Existing Commercial Chemical Substances) or ELINCS (European List of Notified Chemical Substances)
EL ₅₀	Effective loading rate resulting in 50% effect
EmS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EN	European standard of European Committee for Standardization
ErL ₅₀	Loading Rate of Test Substance (in dilution water) which causes 50% reduction in algal growth rate
EU	European Union
IATA	International Air Transport Association
IBC	Intermediate bulk container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
JT	United Nations
LC ₅₀	Lethal concentration for 50 % percent of test organisms
LD ₅₀	Lethal dose for 50 % of test organisms (median lethal dose)
LL ₅₀	Lethal load for 50 % of the test organisms
LR	Republic of Lithuania
LTEL	Long-term exposure limit value
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEL	Non observed effect level
OECD	Organization for Economic Cooperation and Development
PBT	Persistent, bioaccumulative and toxic
PNEC	Predicted no-effect concentration
RCR	Risk characterization ratio
RID	The Regulation concerning the International Carriage of Dangerous Goods by Rail
RTDG	Recommendations on the Transport of Dangerous Goods
REACH	Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL	Short-term exposure limit value
STOT	Specific target organ toxicity
UFI	Unique Formula Identifier
UVCB	Substance of unknown or variable composition, complex reaction products or biological materials
vPvB	very Persistent and very Bioaccumulative

Full text of Hazard Statements:

H332: Harmful if inhaled.

H341: Suspected of causing genetic defects.

H350: May cause cancer.

H361: Suspected of damaging fertility or the unborn child.

H373: May cause damage to organs.

H410: Very toxic to aquatic life with long lasting effects.

Key literature references and sources for data

Registration documentation

Publicly available data from the national limit value databases of the European Chemicals Agency (ECHA), The GESTIS International Limit values Database.

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17/17

Training advice

Employees/users must be trained/familiarized with the relevant safety information provided.

Do not use the product for any purposes other than indicated in the manufacturer's information.

During such use the user may be exposed to unforeseen hazards.

Should you have any questions or doubts regarding SDS, its contents or any other concerns related to safety of the product, please contact us by e mail: post@orlenlietuva.lt

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