



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

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

1.1. Product identifier

Product name **MARINE FUEL (VLSFO)**
Synonyms Bunker Fuel Oil

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

Identified uses Used as a fuel in ships.

1.3. Details of the supplier of the safety data sheet

Supplier **PETROL OFİSİ A.Ş.**
Ünalan, Libadiye Cad. No: 82-F
34700 Üsküdar/ İstanbul
Tel: +90 216 275 30 00
www.poas.com.tr
info@poas.com.tr

Contact Person +90 507 031 7828
pobunkerooperation@petrolofisi.com.tr

1.4. Emergency telephone number

POAS: +90 216 275 3706 (working hours)
National poison information center (UZEM) :114
Emergency Health Services :112

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)	Physical and Chemical Hazards	Not classified.
	Human health	Acute Tox, 4 - H332; Carc, 1B - H350; STOT RE 2 - H373;
	Environment	Repr, 2 - H361; EUH066
		Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

2.2. Label elements

Label In Accordance With (EC) No. 1272/2008



Signal Word **Danger**

Hazard Statements

H332	Harmful if inhaled.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs «thymus, blood» through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary Statements

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe vapours.
P273 Avoid release to the environment.
P280 Wear protective clothing and gloves.
P301+P312 **IF SWALLOWED:** Call a POISON CENTER or doctor/physician if you feel unwell.
P331 Do NOT induce vomiting.
P302+P352 **IF ON SKIN:** Wash with plenty of water.
P304+P340 **IF INHALED:** Remove person to fresh air and keep comfortable for breathing.
P501 Dispose of contents/container in accordance with national regulations.

2.3. Other hazards

In case of contact with hot product can burn. This material can contain hydrogen sulphide (H₂S), a very toxic and extremely flammable gas. Vapours containing hydrogen sulphide may accumulate during storage or transport and may also be vented during filling of tanks. Hydrogen sulphide has a typical "bad egg" smell but at high concentrations the sense of smell is rapidly lost, therefore do not rely on sense of smell for detecting hydrogen sulphide.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Name	EC No.	CAS No.	Index No	Content
Fuel oil, residual	270-675-6	68476-33-5	649-024-00-9	%100

Composition Comments

The data shown are in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information

General first aid, rest, warmth and fresh air. Get medical attention if any discomfort continues.

Inhalation

Move into fresh air and keep at rest. Rinse nose and mouth with water. **If necessary,** should be applied artificial respiration and heart massage. **If** there should be given oxygen. Get medical attention if any discomfort continues.

Ingestion

Immediately rinse mouth. Keep person under observation. Do not induce vomiting.
If vomiting occurs, keep head low. Transport immediately to hospital and bring along these instructions.
If you experience any of the following symptoms at first 6 hours, contact the nearest health center: high temperature above 37° C, shortness of breath, tightness in chest or persistent cough or wheezing.

Skin contact

Immediately remove contaminated clothing. Wash off promptly and flush contaminated skin with water.
Promptly remove clothing if soaked through and flush skin with water.
Large quantities: Remove contaminated clothing. Flush skin thoroughly with water. Get medical attention if any discomfort continues.



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing.
Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention promptly if symptoms occur after washing.

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

Inhalation : Upper respiratory tract irritation, cough.
Ingestion : May be fatal if swallowed
Skin contact : Cause redness and irritation.
Eye contact : Eye irritation, redness, lacrimation.

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

Treat Symptomatically. Inhalation of H₂S is collapsed respiratory system. May cause coma and death. If pulmonary edema occurs, patients should be kept under observation for 48 hours.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Use: Foam, Carbon dioxide (CO₂), Dry chemicals, sand, earth, water mist.

Unsuitable extinguishing media DO NOT use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards

No data available.

Specific hazards

Result of thermal decomposition may occur fume, carbon oxides and organic compounds with low molecular weight compounds which are not yet considered, Sulfur oxides (SO_x), Hydrogen Sulphide (H₂S)

5.3. Advice for firefighters

Special Fire Fighting Procedures

Dike and collect extinguishing water.

Keep away all non-emergency personnel from fire area.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Fires in enclosed places should be extinguished by trained personnel wearing protective clothing and an oxygen mask.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with the substance has been spilled or released. Comply with all relevant local and national regulations. Evacuate the area of all non-essential personnel. Provide adequate ventilation. Do not breathe vapour or mist. Shut off leaks, if possible without personal risk.

6.2. Environmental precautions

Use appropriate container to avoid environmental contamination. Prevent spreading or entering to drains, ditches or rivers using sand, earth or other appropriate barriers. Try to distribute gas or direct the flow to a safe location for example using fog sprays.

6.3. Methods and material for containment and cleaning up

Eliminate all ignition sources. Stop leak if without risk. May be in liquid, semi solid and solid forms depending on its temperature. Large spills must remain in foam cover until danger is over.



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

Use a non-combustible material such as vermiculite, sand or earth to absorb the product and place into a container for later disposal. Wash the area with soap and water. Spills and contaminated materials are collected from the work area as soon as possible and placed into a suitable container and ingredients are indicated on the container. Must be treated by trained personnel using oxygen mask due to H₂S can be spread from spilled hot liquid in closed area. Recollecting of the spilled product must be performed by specialist staff. To prevent spreading to water must be used barriers and recollect the product on water surface. Product is heavy and can be difficult to collect. Please contact with experts in case of spills.

6.4. Reference to other sections

For personal protection, see section 8,
See section 11 for additional information on health hazards,
For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid inhalation, contact with eyes and skin. Use only in well-ventilated areas. It should be stored in tanks designing according to the product. Storage tanks should be labeled and should be kept closed when out of use. Do not remove the warning signs since some products may be present in empty tanks. If the concentration of hydrocarbon vapor is more than 1%, oxygen concentration is less than 20% in the tank should not be entered without oxygen mask. In closed area, because of present H₂S, there is life-threatening.

7.2. Conditions for safe storage, including any incompatibilities

Provide good ventilation in the work environment and avoid inhalation of vapor formed during use. Avoid contact with skin and observe good personal hygiene. Avoid contact with eyes. To prevent eye contact goggles or face shield should be used. Do not eat or drink while using. Disposal clothes should be used. Light hydrocarbons have flammability through they are collected at the top of the storage tank. Even at temperature lower than normal flashpoint, may create flammable / explosion hazard. (Note: Flash Point, should not be seen as a safe zone about the possibility of igniting the vapors in the tank headspace.) Therefore it is necessary to discharge the static electricity. Measures should be taken against the ignition source (cigarettes, static electricity, hot surfaces, grinding, ...) while filling and discharge. Equipments such as pumps etc, must be earthed or transmission cables must be connected each other by a cable to avoid accumulation of static electricity. There is flammable and explosion risk if the product contact with hot surfaces. The contaminated cloth, paper and other materials must be disposed of after use without accumulation. Despite the possibility of the empty tanks containing product vapor should not be done cutting, welding, soldering processes.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
Fuel oil, residual	ACGIH	10 ppm	0,2 mg/m ³	15 ppm	--	--
Hydrogen Sulphide	ACGIH	10 ppm	14 mg/m ³	15 ppm	21 mg/m ³	--

ACGIH : American Conference of Industrial Hygienists
TWA = Time Weighted Average
STEL = Short-term exposure limit

DNELs (Derived No Effect Level)

Name	Type	Exposure	Value	Population	Effects
Fuel oil, residual	DNEL	Short-term (15 min) - inhalation	4700 mg/m ³	Workers	Systemic



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

		Long-term (8 hours) -dermal	0,065 mg/kg bw/day	Workers	Systemic
		Long-term (8 hours) - inhalation	0,12 mg/m ³	Workers	Systemic
		Long-term (24 hours)- oral	0,015 mg/kg bw/day	Consumers	Systemic

8.2. Exposure controls

Protective equipment



Process conditions

The level of protection and types of necessary controls will vary depending upon potential exposure conditions. Appropriate measures include: use of isolated systems as far as possible, Provide adequate ventilation to control exposure rules / airborne concentrations below the limits, Local exhaust ventilation is recommended, Eyewash and body showers for emergency use.

Engineering measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Respiratory equipment

In places where adequate control airborne concentrations to protect workers' health, use respiratory protective equipment selected according to the specific conditions related and appropriate to local regulations, Contact with respirator suppliers, Use appropriate positive pressure breathing apparatus where it is not appropriate for air-filtering respirators (e.g. at confined space where airborne concentrations are high, where present risk of oxygen deficiency). In place of using air filter breathing apparatus, select an appropriate combination of mask and filter. All respiratory protection equipment and using of them must be in accordance with local regulations.

Hand protection

It is important personal hygiene to ensure effective hand care, Gloves should be worn only on clean hands, After using gloves, hands should be washed and thoroughly dried. The use of a non-perfumed moisturizer is recommended, Suitability and durability of a glove depend on using e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, using expertly in the fingers and hands, Always seek advice from glove suppliers, Contaminated gloves should be replaced, Select gloves tested according to a relevant standard (eg Europe EN 374, US F739). In case of prolonged or frequent exposure, nitrile gloves (Permeation time> 240 minutes) might be more appropriate to use. Neoprene or PVC gloves may be used to protect against incidental contact / splash.

Eye protection

Chemical splash goggles (chemical monogoggles), Approved by European Standard EN 166

Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash your hands in each work shift and before eating, smoking and before going to the toilet, Wash promptly if skin becomes contaminated, Remove all contaminated clothing immediately, When using do not eat, drink or smoke.

Skin protection

Protective clothing should be worn.

Environmental Exposure Controls

In the discharge of exhaust air containing vapor local rules on emission limits for volatile substances must be complied.



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Black
Odour	Hydrocarbon Odor.
Boiling point	No data available.
Density	0,991 kg/l max. @15 °C TS1013 EN ISO 3675
Vapour pressure	No data available.
Viscosity	380 cSt 50 °C TS1451 EN ISO 3104
Flash Point	60 °C min. ASTM D 93
Auto-ignition temperature	No data available.
Flammability limits	No data available.

9.2. Other information

No information required.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.
Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Will not polymerise.

10.4. Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5. Incompatible materials

Avoid contact with strong reducing agent (oxidizing).

10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
Thermal decomposition productions varies depending on conditions. If storage tank heats up, increase H₂S gas.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity

Fuel oil, residual (CAS: 68476-33-5)

Acute Toxic Dose 1 – LD 50	>2000 mg/kg	(oral - rat)
Acute Toxic Doz 2 – LD 50	>2000 mg/kg	(dermal - rabbit)
Acute Toxic Conc.– LC 50	10-20 mg/l/4hrs	(inh. (vapours)- rat)

Serious eye damage / irritation

In case of accidentally eye contact causes temporary blindness.



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

Skin Irritation/Corrosion

Skin contact with hot product creates skin burns. Prolonged or repeated contact can cause skin diseases and skin cancer due to containing Polycyclic Aromatic Hydrocarbons.

Germ cell mutagenicity:

Mutation studies in test tube, showed that mutating events associated with 4-6 cyclic polycyclic aromatic content.

Carcinogenicity:

May cause cancer.

Reproductive Toxicity – Fertility/ Development

Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure:

No data available.

Specific target organ toxicity - repeated exposure:

May cause damage to organs «thymus, liver» through prolonged or repeated exposure.

Inhalation

In case of mist or vapour inhalation, eyes, nose and throat are irritated. Inhalation is dangerous due to H₂S and PCA.

Ingestion

It is harmful if swallowed in small doses. If swallowed a greater amount causes nausea and diarrhea. If exceed to lungs damages during vomiting.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Spillages prevent the transfer of oxygen by forming a film layer on the water surface.

Fuel oil, residual (CAS: 68476-33-5)

LL 50, 96 Hrs, Fish	79 mg/l	Acute, OECD 203
NOEL 28 Days, Fish	0,1 mg/l	Chronic
EL 50 48 Hrs, Daphnia	2 mg/l	Acute, OECD 202
NOEL 21 Days, Daphnia	0,27 mg/l	Chronic

12.2. Persistence and degradability

This product is soluble in the soil without harming the environment.
Volatile components in the product have the photochemical ozone formation potential.

12.3. Bioaccumulative potential

Accumulates in soil.

12.4. Mobility in soil

Products insoluble in water. Some components of the product collapse the water system, the product spread on the water surface. Volatile components of the product will be dispersed into the atmosphere.

12.5. Results of PBT and vPvB assessment

Not contain any components considered as PBT and vPvB

12.6. Other adverse effects

Toxic to aquatic life with long lasting effects. Spills of petroleum products is often dangerous for the environment. Volatile components in the product have the photochemical ozone formation potential.



SAFETY DATA SHEET **MARINE FUEL (VLSFO)**

According to Regulation (EU) No 2015/830

SECTION 13: DISPOSAL CONSIDERATIONS

General information

Disposed of as hazardous waste, Waste must be treated as the product itself.

13.1. Waste treatment methods

Empty containers, dispose of waste and residues in accordance with legislation of the local authority. Environmental manager must be informed of all major spillages. Make sure containers are empty before discarding. Empty containers must not be burned because of explosion hazard. Please recycle empty pack in accordance with legislation of the local authority. Do not re-use empty containers. Some products may remain in empty containers. Do not perform heat treatment without erased or removed danger signs or labels from empty containers.

SECTION 14: TRANSPORT INFORMATION

General

This substance/mixture may be classified as hazardous. However, it may be dispatched as non-hazardous substance in cases when the packaging is under limited / exceptional quantity. Please follow the relevant regulations.

14.1. UN number

UN No. (ADR/RID/ADN)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082

14.2. UN proper shipping name

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
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14.3. Transport hazard class(es)

ADR/RID/ADN Class	9
ADR/RID/ADN Class	Class 9: Miscellaneous dangerous substances and articles.
ADR Label No.	9
IMDG Class	9
ICAO Class/Division	9
Transport Labels	



14.4. Packing group

ADR/RID/ADN Packing group	III
IMDG Packing group	III
ICAO Packing group	III

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant
Yes.



SAFETY DATA SHEET
MARINE FUEL (VLSFO)
According to Regulation (EU) No 2015/830

14.6. Special precautions for user

Quantities Limit	5L
EMS	F-A, S-F
Emergency Action Code	+3Z
Hazard No. (ADR)	90
Tünel kısıtlama kodu	(-)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available.

SECTION 15: REGULATORY INFORMATION

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

Uk Regulatory References

Chemicals (Hazard Information & Packaging) Regulations.
Highly Flammable Liquid Regulations 1972.
Fire precautions Act 1971.

Environmental Listing

No listing noted.

Statutory Instruments

Export of Dangerous Chemicals Regulations.

Approved Code Of Practice

Safety Data Sheets for Substances and Preparations.

EU Legislation

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Revision Comments

Revised name of supplier.

Issued By

Bülent Özdemir / CRAD.
www.crad.com.tr gbf@crad.com.tr

Issued Note

This SDS is prepared based on the information and documents received from product owner. CRAD or/and SDS author shall not be responsible for incorrect prepared of SDS and pecuniary loss or intangible damages because of deficient or wrong information and documents which comes from product owner.

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This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



Petrol Ofisi

Petrol Ofisi A.Ş.

Ünalan, Libadiye Cad. No: 82-F 34700 Üsküdar/ İstanbul

Tel: +90 216 275 30 00 • info@poas.com.tr

www.petrolofisi.com.tr