

SAFETY DATA SHEET

Product: ÓLEO COMBUSTÍVEL OCB1

Revision: 01

Date: 04/14/2023

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1 - IDENTIFICATION

GHS Product identifier:	ÓLEO COMBUSTÍVEL OCB1
Other means of identification:	OCB668
Recommended use of the chemical:	Used to generate thermal energy in furnaces and boilers.
Specific restrictions on use:	There are not known restrictions on use.
Supplier's details:	REFINARIA DE MATARIPE S.A.
Address:	ROD BA 523, KM 4, MATARIPE CEP: 43900-000, São Francisco do Conde - BA - BRA
Phone number(s):	0800 117 2020 (AMBIPAR, 24h)
Emergency phone number:	0800 117 2020 (AMBIPAR's 24-hour service)

2 - HAZARD IDENTIFICATION

Classification of the substance or mixture:	Flammable Liquids - Category 4 Acute Toxicity - Oral - Category 5 Acute Toxicity - Inhalation - Category 4 Carcinogenicity - Category 1B Reproductive Toxicity - Category 2 Specific Target Organ Toxicity – Repeated Exposure - Category 2 Hazardous to the Aquatic Environment - Acute Hazard - Category 1 Hazardous to the Aquatic Environment - Chronic Hazard - Category 1
Classification system adopted:	Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations.

GHS label elements, including precautionary statements

Pictograms:



Signal word: DANGER

Hazard statement(s):
 H227 Combustible liquid.
 H303 May be harmful if swallowed.
 H332 Harmful if inhaled.
 H350 May cause cancer.
 H361 Suspected of damaging fertility or the unborn child.
 H373 May cause damage to the blood, to the thymus and to the liver through prolonged or repeated exposure.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):
PREVENTION:
 P203 Obtain, read and follow all safety instructions before use.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear protective gloves, protective clothing, eye protection, face protection and hearing protection.

RESPONSE TO EMERGENCY:

P301 + P317 IF SWALLOWED: Get medical help.
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P317 Get medical help.
 P318 IF exposed or concerned, get medical advice.
 P319 Get medical help if you feel unwell.
 P370 + P378 In case of fire: Use Sand, carbon dioxide (CO₂), foam, water mist and powder to extinguish.
 P391 Collect spillage.

STORAGE:

P403 Store in a well-ventilated place.
 P405 Store locked up.

DISPOSITION:

P501 Dispose of contents and container in accordance with local regulations.

Other hazards which do not result in classification: The product has no other hazards.

3 - COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	Members of this category form a group encompassing diverse hydrocarbons with a wide range of molecular weights, carbon numbers (C7 to C50) and boiling points (121 to 600°C). Petroleum hydrocarbons contain sulfur, nitrogen, oxygen and organometallic compounds.
Common chemical name:	Fuel oil, residual.
Common name(s), synonym(s) of the substance:	Residual fuel oil (heavy).
CAS:	68476-33-5
Components contributing to the hazard:	Does not contain components that contribute to the hazard.

4 - FIRST-AID MEASURES

Description of necessary first-aid measures

Inhalation:	Remove the victim to a well-ventilated area and keep at rest in a position that does not impede breathing. If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER or a doctor. Take this MSDS.
Skin:	Wash exposed skin with sufficient amount of water to remove material. Remove and isolate contaminated clothing and shoes. In case of skin irritation: Consult a doctor. Take this MSDS.
Eye:	Rinse carefully with water for several minutes. If you wear contact lenses, remove them if that's easy. Keep rinsing. If eye irritation persists: consult a physician. Take this MSDS.

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Ingestion:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Wash the victim's mouth with plenty of water. If you feel unwell, contact a TOXICOLOGICAL INFORMATION CENTER or a doctor. Take this MSDS.
Most important symptoms/effects, acute and delayed:	May be harmful if swallowed. Harmful if inhaled. May cause damage to the blood, liver and thyme through prolonged or repeated exposure.
Indication of immediate medical attention and special treatment needed, if necessary:	Avoid contact with the product when helping the victim. If necessary, symptomatic treatment should include, above all, support measures such as correction of hydroelectrolytic and metabolic disturbances, in addition to respiratory assistance. In case of contact with the skin, do not rub the affected area.

5 - FIRE-FIGHTING MEASURES

Extinguishing media:	Appropriate: Sand, carbon dioxide (CO ₂), foam, water mist and powder. Inappropriate: water directly onto the burning material.
Specific hazards arising from the chemical:	Combustion of the chemical or its packaging can form irritating and toxic gases such as carbon monoxide and carbon dioxide. Dangerous when exposed to excessive heat or other sources of ignition such as sparks, open flames or flames of matches and cigarettes, welding operations, pilot lights and electric motors. Can accumulate static charge by flow or agitation. Vapors from heated liquid can be ignited by static discharge. Vapors are heavier than air and tend to accumulate in low or confined areas, such as sewers and basements. Can travel great distances causing retrogression of the flame or new fires both in open environments in as confined ones. Containers may explode if heated.
Special protective actions for fire-fighters:	Use self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing. Containers and tanks involved in the fire should be cooled with water mist.

6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	Prevent sparks or flames. Do not smoke. Do not touch damaged containers or spilled material without the use of appropriate clothing. Avoid exposure to the material. Stay in a safe place, with wind from behind. Use personal protective equipment as described in Section 8.
For emergency responders:	Wear complete PPE with safety glasses, safety gloves, suitable protective clothing and closed shoes. In case of leakage, where exposure is high, it is recommended to use a suitable respiratory protection mask.
Environmental precautions:	Prevent spilled product from reaching waterways and sewers.
Methods and materials for containment and cleaning up:	Use water mist or vapor suppressing foam to reduce product dispersion. Use natural or spill containment barriers. Collect spilled product and place in appropriate containers. Adsorb the remaining product with dry sand, earth, vermiculite, or any other inert material. Place the adsorbed material in appropriate containers and remove them to a safe place. For final disposal, proceed according to Section 13 of this MSDS.

7 - HANDLING AND STORAGE

Precautions for safe handling

Precautions for safe handling:	Handle in a well-ventilated area or with a general local exhaust/ventilation system. Avoid formation of vapors and mists. Avoid exposure to product as effects may not be felt immediately. Use personal protective equipment as described in section 8.
General hygiene:	Wash hands and face thoroughly after handling and before eating, drinking, smoking or going to the bathroom. Contaminated clothing should be changed and washed before reuse. Remove clothing

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and protective equipment contaminated before entering eating areas.

Conditions for safe storage, including any incompatibilities

Technical measures for prevention of fire and explosion:	Keep away from heat, sparks, open flames and hot surfaces. - Do not smoke. Keep container tightly closed. Ground the container vessel and product receiver during transfers. Use only non-sparking tools. Avoid the build-up of electrostatic charges. Use explosion-proof electrical, ventilation and lighting equipment.
Conditions for safe storage, including any incompatibilities:	Store in a well ventilated place, away from sunlight. Keep container closed. Keep away from high temperatures and ignition sources. Keep stored at room temperature not exceeding 35°C.
Packaging compatibilities:	Similar to the original packaging.
Inadequate packaging materials:	There are not known unsuitable material.

8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limit:	Not established.
Biological limit:	Not established.
Other limits and values:	Not established.
Appropriate engineering controls:	Provide ventilation combined with local exhaust, especially when product vapours/mists are formed. It is recommended to make emergency showers and eye wash facilities available in the work area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection:	Wide-view glasses with splash protection.
Skin protection:	Safety shoes and safety clothing to protect the whole body from chemical splashes. Protective gloves against chemicals such as PVC.
Respiratory protection:	Use of respirator with filter against vapors and organic mists is recommended for average exposures above half the TLV-TWA. In cases where exposure exceeds 3 times the TLV-TWA value, use a self-contained, full facepiece, air-supplied respirator (SCBA) operated in positive pressure mode. Follow the guidelines of the Respiratory Prevention Program (PPR), 4th ed. São Paulo: Fundacentro, 2016.
Thermal hazards:	It does not present thermal hazards.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Aspect:	Liquid, viscous.
Color:	Dark.
Odour:	Characteristic of hydrocarbons.
Melting point/freezing point:	< 30 °C (86 °F).
Boiling point or initial boiling point and boiling range:	121 to 600 °C (249.8 to 1112 °F).
Flammability:	Combustible.

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Lower and upper explosion limit/flammability limit:	Upper: 6 % and Lower: 1%.	
Flash point:	> 66 °C (150.8 °F) - Closed cup.	
Auto-ignition temperature:	250 to 537 °C (482 to 998.6 °F).	
Decomposition temperature:	Not available.	
pH:	Not applicable.	
Kinematic viscosity:	620 mm ² /s at 60 °C (140 °F).	
Solubility(ies):	Immiscible in water (4.5 mg/L (4500 mg/m ³) at 20 °C (68 °F)).	
Partition coefficient n-octanol/water (log value):	log <i>K</i> _{ow} : 2.7 to 6 (calculated).	
Vapour pressure:	0.02 to 0.791 kPa at 120 °C (248 °F).	
Relative vapour density:	Not available.	
Density and/or relative density:	Not available.	
Particle characteristics:	Not applicable.	
Other information:	Absolute density: 0.968 g/cm ³ at 20 °C (68 °F).	

10 - STABILITY AND REACTIVITY

Reactivity:	Reactivity is not to be expected under normal conditions of temperature and pressure.
Chemical stability:	Stable product under normal conditions of temperature and pressure.
Possibility of hazardous reactions:	There are not known hazardous reactions with the material.
Conditions to avoid:	Elevated temperatures. Ignition sources. Contact with incompatible materials.
Incompatible material:	Oxidizing Agents.
Hazardous decomposition products:	In combustion, it releases poly-aromatic hydrocarbons in the form of particles and vapours. When heated, it can release hydrogen sulfide.

11 - TOXICOLOGICAL INFORMATION

Acute toxicity:	Product not classified as acute toxic by dermal. May be harmful if swallowed. Harmful if inhaled. LD ₅₀ Dermal (rabbits): >2000 mg/kg. LD ₅₀ Oral (rats): 4320 mg/kg. LC ₅₀ Dusts and mists (rats, 4h): 4.1 mg/L.
Skin corrosion/irritation:	Not expected to cause skin irritation.
Serious eye	Not expected to cause eye irritation.

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damage/irritation:	
Respiratory or skin sensitization:	It is not expected to present respiratory or skin sensitization.
Germ cell mutagenicity:	It is not expected to show mutagenicity in germ cells.
Carcinogenicity:	May cause cancer. Animal test results indicate that components of Heavy Fuel Oil are carcinogenic.
Reproductive toxicity:	Suspected of damaging fertility or the unborn child. Studies in animals showed a decrease in the gravid weight of the uterus, an increase in resorptions, a decrease in the size of the live litter and a decrease in fetal weight.
STOT - Single exposure:	Not expected to exhibit specific target organ toxicity by single exposure.
STOT - Repeated exposure:	May cause damage to the blood, liver and thyme through prolonged or repeated exposure.
Aspiration hazard:	Not classified for aspiration hazard. The kinematic viscosity is greater than 20.5 cSt at 40°C.

12 - ECOLOGICAL INFORMATION

Toxicity:	Very toxic to aquatic life with long lasting effects. NOEC (<i>Pseudokirchneriella subcapitata</i> , 72 h): 0.05 mg/L; EC ₅₀ (<i>Daphnia magna</i> , 48h): 0.22 mg/L; ErC ₅₀ (<i>Pseudokirchneriella subcapitata</i> , 72h): 0.32 mg/L; LC ₅₀ (<i>Oncorhynchus mykiss</i> , 96h): 79 mg/L.
Persistence and degradability:	The product presents persistence and it is not considered readily biodegradable. Degradation rate: 11% in 28 days.
Bioaccumulative potential:	Presents high bioaccumulative potential in aquatic organisms. log <i>K</i> _{ow} : 2.7 to 6 (calculated).
Mobility in soil:	Not determined.
Other adverse effects:	The release of large amounts of product can cause undesirable environmental effects, such as the reduction of oxygen availability in aquatic environments due to the formation of an oily layer on the surface, coating and consequent suffocation of animals. The release of large amounts of product may cause undesirable environmental effects, such as decreased oxygen availability in aquatic environments due to the formation of oily layer on the surface, coating and consequent suffocation of animals.

13 - DISPOSAL CONSIDERATIONS

Disposal methods

Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product.
Keep the product remains in its original and properly closed containers. Disposal should be performed as established for the product.

14 - TRANSPORT INFORMATION

Road:	UN - United Nations: Model Regulations: • Recommendations on the Transport of Dangerous Goods.
UN number:	3082
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual)

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Primary risk class or division:	9	
Subsidiary risk class or division:	NA	
Packing group:	III	
Railway regulations:	COTIF - Convention concerning International Carriage by Rail: • Appendix C: RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.	
UN number:	3082	
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual)	
Primary risk class or division:	9	
Subsidiary risk class or division:	NA	
Packing group:	III	
Sea:	IMO - International Maritime Organization: • IMDG Code - International Maritime Dangerous Goods Code.	
UN number:	3082	
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual)	
Primary risk class or division:	9	
Subsidiary risk class or division:	NA	
Packing group:	III	
EmS:	F-A,S-F	
Environmental hazards:	The product is considered a marine pollutant.	
Air:	IATA - International Air Transport Association: • DGR - Dangerous Goods Regulation.	
UN number:	3082	
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fuel oil, residual)	
Primary risk class or division:	9	
Subsidiary risk class or division:	NA	
Packing group:	III	
Special precautions for user:	Not applicable.	

15 - REGULATORY INFORMATION

Federal Decree No. 10,088, of November 5, 2019;
 ABNT-NBR 14725:2014 Standard;
 Regulatory Norm nº 26 (Safety signs), from the Ministry of Labor and Social Security.

In accordance with Globally Harmonized System of Classification and Labelling of Chemicals (GHS)- Chapter 1.5 and Annex 4

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16 - OTHER INFORMATION

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

Elaborated March 2023.

Change control:

Version	Elaboration	Changes
01	03/29/2023	Elaboration

Abbreviations:

ACGIH - American Conference of Governmental Industrial Hygienists;
 CAS - Chemical Abstracts Service;
 EC - European Community;
 EC₅₀ - Effective Concentration 50%;
 EEC - European Economic Community;
 ErC₅₀ - Effective concentration that results in a 50% reduction in the growth rate;
 IARC - International Agency for Research on Cancer;
 K_{ow} - Octanol/Water partition coefficient;
 LC₅₀ - Lethal Concentration 50%;
 NIOSH - National Institute for Occupational Safety and Health;
 NOEC - No Observed Effect Concentration;
 TLV - Threshold Limit Value;
 TWA - Time Weighted Average;
 UN - United Nations.

Bibliographic references:

GHS - GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS. 8th rev. ed. New York: United Nations, 2019.

ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS. TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2022.

ECHA - EUROPEAN CHEMICAL AGENCY. Available at: < <http://echa.europa.eu/web/guest> >. Access in: Mar. 2023.

GESTIS - SUBSTANCE DATABASE. Available at: < [http://gestis-en.itrust.de/nxt/gateway.dll/gestis_en/000000.xml?f=templates\\$fn=default.htm\\$3.0](http://gestis-en.itrust.de/nxt/gateway.dll/gestis_en/000000.xml?f=templates$fn=default.htm$3.0) >. Access in: Mar. 2023.

HSDB - HAZARDOUS SUBSTANCES DATA BANK. Available at: <http://pubchem.ncbi.nlm.nih.gov/>. Access in: Mar. 2023.

IARC - INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. Available at: <http://monographs.iarc.fr/ENG/Classification/index.php>. Access in: Mar. 2023.

IPCS - INTERNATIONAL PROGRAMME ON CHEMICAL SAFETY - INCHEM. Available at: <http://www.inchem.org/>. Access in: Mar. 2023.

IUCLID - INTERNATIONAL UNIFORM CHEMICAL INFORMATION DATABASE. [S.1.]: European chemical Bureau. Available

In accordance with Globally Harmonized System of
Classification and Labelling of Chemicals (GHS)- Chapter 1.5
and Annex 4

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NIOSH - NATIONAL INSTITUTE OF OCCUPATIONAL AND SAFETY. International Chemical Safety Cards. Available at: <http://www.cdc.gov/niosh/>. Access in: Mar. 2023.

REACH - REGISTRATION, EVALUATION, AUTHORIZATION AND RESTRICTION OF CHEMICALS. Commission Regulation (EC) No 1272/2008 of December 2008 amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:en:PDF> >. Access in: Mar. 2023.

TOXNET - TOXICOLOGY DATA NETWORKING. ChemIDplus Lite. Available at: <http://chem.sis.nlm.nih.gov/>. Access in: Mar. 2023.