

SAFETY DATA SHEET

Product: MARINE GASOIL

Revision: 01

Date: 06/13/2024

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1 - IDENTIFICATION

GHS Product identifier:	MARINE GASOIL
Other means of identification:	MGO70A; MGO70S
Recommended use of the chemical:	Fuel used in large main engines in the propulsion systems of large ships.
Specific restrictions on use:	There are not known restrictions on use.
Supplier`s details:	Acelen Address: ROD BA 523, KM 4, MATARIPE, CEP: 43900-000 - BA - Brasil. Phone number: (71) 3511-8000 / (11) 5225-8900
Emergency phone number:	EMERGENCIall: 0800 729 2756 / (11) 94759-7282 (Whatsapp) (24h)

2 - HAZARD IDENTIFICATION

Classification of the substance or mixture:	Flammable Liquids - Category 3; Acute Toxicity - Inhalation - Category 4; Skin Corrosion/Irritation - Category 2; Carcinogenicity - Category 2; Aspiration Hazard - Category 1; Hazardous to the Aquatic Environment - Acute Hazard - Category 2; Hazardous to the Aquatic Environment - Chronic Hazard - Category 2.
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):	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. H411 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. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof electrical, ventilating and lighting equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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P264 Wash hands thoroughly after handling.
 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 + P316 IF SWALLOWED: Get emergency medical help immediately.
 P302 + P352 IF ON SKIN: Wash with plenty of water.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
 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.
 P321 Specific treatment.
 P331 Do NOT induce vomiting.
 P332 + P317 If skin irritation occurs: Get medical help.
 P362 + P364 Take off contaminated clothing and wash it before reuse.
 P370 + P378 In case of fire: Use carbon dioxide (CO₂), foam, water mist and dry chemical powder to extinguish.
 P391 Collect spillage.

STORAGE:

P403 + P235 Store in a well-ventilated place. Keep cool.
 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 A complex combination of hydrocarbons produced by the distillation of crude oil. Consists of hydrocarbons having carbon numbers predominantly in the range of C9 to C20 and boiling in the range of approximately 163°C to 357°C (325°F to 675°F).

Common chemical name: Fuels, diesel.

Common name(s), synonym(s) of the substance: Fuel oil;

CAS: 68334-30-5

Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance: Does not contain components that contribute to the hazard.

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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:	Flush 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.
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:	Causes skin irritation with redness, pain, dryness. May be fatal if swallowed and enters airways. Harmful if inhaled.
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: carbon dioxide (CO ₂), foam, water mist and dry chemical 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. Very 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.

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Large spill: confine the liquid into a dike away from the spills for later and proper disposition. Water mist can be used to reduce of vapors, but it wont prevent ignition in closed environments.

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. Avoid contact with incompatible materials.

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 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. It is not necessary addition of stabilizers and antioxidants to ensure the durability. Keep away from incompatible materials.

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: The values below apply to workplaces.

ACGIH - TLV - TWA: 100 mg/m³ (IFV).

IFV: Inhalable fraction and vapor.

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. Maintain atmospheric concentrations of the constituents of the material below occupational exposure limits indicated.

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

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Thermal hazards:	guidance from the Respiratory Protection Program (PPR), 4th ed. São Paulo: Fundacentro, 2016. It does not present thermal hazards.
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9 - PHYSICAL AND CHEMICAL PROPERTIES

Aspect:	Liquid, limpid.
Color:	Colorless to light yellow.
Odour:	Characteristic.
Melting point/freezing point:	Not available.
Boiling point or initial boiling point and boiling range:	Not available.
Flammability:	Flammable.
Lower and upper explosion limit/flammability limit:	Upper: 6.5 % and Lower: 0.6 %.
Flash point:	≥ 60 °C (140 °F) - Closed cup.
Auto-ignition temperature:	Not available.
Decomposition temperature:	400 °C (752 °F).
pH:	Not applicable.
Kinematic viscosity:	2 to 6 mm ² /s at 40 °C (104 °F).
Solubility(ies):	Immiscible in water.
Partition coeficient n-octanol/water (log value):	log K_{ow} : > 3.
Vapour pressure:	Not available.
Relative vapour density:	Not available.
Density and/or relative density:	Absolute density: 0.876 g/cm ³ at 20 °C (68 °F).
Particle characteristics:	Not applicable.
Other information:	Not applicable.

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.

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Incompatible material: Oxidizing agents.

Hazardous decomposition products: On combustion, it releases light and heavy hydrocarbons and coke. When heated, it can release hydrogen sulfide.

11 - TOXICOLOGICAL INFORMATION

Acute toxicity: Product not classified as acute toxic by oral.
Harmful if inhaled.
LC₅₀ Dusts and mists (rats, 4h): 4.1 mg/L.
LD₅₀ Oral (rats): 7500 mg/kg.

Skin corrosion/irritation: Causes skin irritation with redness, pain, dryness.

Serious eye damage/irritation: It is not expected to cause eye 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: Suspected of causing cancer.
Confirmed animal carcinogen of unknown relevance to humans (Category A3 - ACGIH).

Reproductive toxicity: It is not expected to be reproductively toxic.

STOT - Single exposure: It is not expected to exhibit specific target organ toxicity by single exposure.

STOT - Repeated exposure: It is not expected to exhibit specific target organ toxicity on repeated exposure.

Aspiration hazard: May be fatal if swallowed and enters airways.

12 - ECOLOGICAL INFORMATION

Toxicity: Toxic to aquatic life with long lasting effects.
ErC₅₀ (*Pseudokirchneriella subcapitata*, 72 h): 10 mg/L;
LC₅₀ (*Oncorhynchus mykiss*, 96 h): 21 mg/L;
EC₅₀ (*Daphnia magna*, 48 h): 68 mg/L.

Persistence and degradability: It has persistence and is not considered rapidly degradable.
Biodegradation rate: 57.5% in 28 days.

Bioaccumulative potential: Presents low bioaccumulative potencial in aquatic organisms.
log K_{ow}: > 3.

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.

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

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product.

14 - TRANSPORT INFORMATION

Road: UN - United Nations: Model Regulations:
• Recommendations on the Transport of Dangerous Goods.

UN number: 1202

Proper shipping name: DIESEL FUEL

Primary risk class or division: 3

Subsidiary risk class or division: NA

Packing group: III

Environmental hazards: The product is considered dangerous for the environment for land transport.

Railway regulations: COTIF - Convention concerning International Carriage by Rail:
• Appendix C: RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.

UN number: 1202

Proper shipping name: DIESEL FUEL

Primary risk class or division: 3

Subsidiary risk class or division: NA

Packing group: III

Environmental hazards: The product is considered dangerous for the environment in rail transport.

Sea: IMO - International Maritime Organization:
• IMDG Code - International Maritime Dangerous Goods Code.

UN number: 1202

Proper shipping name: DIESEL FUEL

Primary risk class or division: 3

Subsidiary risk class or division: NA

Packing group: III

Environmental hazards: The product is considered a marine pollutant.

EmS: F-E,S-E

Air: IATA - International Air Transport Association:
• DGR - Dangerous Goods Regulation.

UN number: 1202

Proper shipping name: DIESEL FUEL

Primary risk class or division: 3

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Subsidiary risk class or division:	NA
Packing group:	III
Environmental hazards:	The product is considered dangerous for the environment for air transport.
Special precautions for user:	Not applicable.
Maritime transport in bulk according to IMO instruments:	Consult regulations: <ul style="list-style-type: none"> • International Maritime Organization: MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006; • International Maritime Organization: IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.

15 - REGULATORY INFORMATION

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

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.

Change control:

Version	Manufacture date	Changes
01	03/22/2023	Elaboration

Abbreviations:

- ACGIH - American Conference of Governmental Industrial Hygienists;
- CAS - Chemical Abstracts Service;
- EC - European Community;
- EC₅₀ - Effective concentration of substance that causes 50 % of the maximum response;
- 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%;
- LD₅₀ - Lethal Dose 50%;
- NIOSH - National Institute for Occupational Safety and Health;
- TLV - Threshold Limit Value;
- TWA - Time Weighted Average;

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

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UN - United Nations.

Bibliographic references:

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, 2023.

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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.

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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.

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