MATERIAL SAFETY DATA SHEET
DMA

1. Product and Company Name

Product
DMA
Alternative Names: Marine Gas Oil, MGO, Gas Oil, F76, DMAXX, DMALS

Application
Fuel for diesel engines or heating/boiler plant

Company
KG Bominflot Gesellschaft für Mineralöle mbH & Co
Hanseviertel
Grosse Bleichen 30
20354 Hamburg
Germany

Emergency Telephone Number
+49 (0) 180 100 31 28

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2. Composition/Information on Ingredients

Chemical Composition
Complex mixture of middle distillate hydrocarbons, with carbon numbers in C10 to C28 range.
Performance enhancing additives may be included.

Hazardous Components
Cracked components containing polycyclic aromatic hydrocarbon compounds may be present.

Fuels, diesel:	*- EINECS No: 269-822-7*
	- CAS No: 68334-30-5
	- 90 % Wt
R 40	*Limited evidence of a carcinogenic effect*
R 51/53	*Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.*
R 65	*Harmful: may cause lung damage if swallowed*
R 66	*Repeated exposure may cause skin dryness or cracking*

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3. Hazards Identification

Possible risk of irreversible effects following prolonged and repeated skin exposure.
May enter lungs and cause damage if swallowed.
May cause irritation to eyes and respiratory tract.

Hydrogen sulphide may be released when heated.
Exposure to vapour/mist may cause dizziness and drowsiness.

Acute effects of exposure to man

Inhalation	*Vapours or mist may cause irritation of the nose and throat, headache nausea, vomiting, dizziness, drowsiness, euphoria, loss of coordination and disorientation. In poorly ventilated areas or confined spaces, unconsciousness and asphyxiation may result. Inhalation of vapours or mist may result in the absorption of potentially harmful amounts of material.*
Skin contact	*Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling. Believed not to be a skin sensitiser.*
Eye contact	*May cause irritation, experienced as mild discomfort and seen as slight excess redness of the eye.*
Ingestion	*If more than several mouthfuls are swallowed, abdominal discomfort, nausea and diarrhoea may occur.*

Chronic effects of exposure to man

Medical conditions aggravated by exposure	*Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).*
Other remarks	*Prolonged or widespread skin contact may result in the absorption of potentially harmful amounts of material.*

Effects of exposure to the environment

Some short-term toxicity to aquatic and marine organisms, may cause long-term adverse effects in the aquatic environment.

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4. First Aid Measures

Eyes

Wash eye thoroughly with copious quantities of water, ensuring eyelids are held open. Obtain medical advice if any pain or redness develops or persists.

Skin

Wash skin thoroughly with soap and water as soon as reasonably practicable. Remove heavily contaminated clothing and wash underlying skin.
Medical advice must be obtained urgently if product under high pressure has been injected through the skin.

Ingestion

If contamination of the mouth occurs, wash out thoroughly with water. If larger amounts are swallowed, do not induce vomiting; transport casualty together with the product container, its label or the safety data sheet urgently to hospital.

Inhalation

If inhalation of mists, fumes or vapour causes irritation to the nose or throat, or coughing, remove to fresh air. If symptoms persist obtain medical advice.

Medical Advice
Treatment should in general be symptomatic and directed to relieving any effects.

Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discoloured and extremely painful with extensive subcutaneous necrosis.
Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimise tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Other recommendations
Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

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5. Fire Fighting Measures

For major fires call the Fire Service. Ensure an escape path is always available from any fire.
There is a danger of flashback if sparks or hot surfaces ignite vapour.

Use foam, dry powder or water fog. ***DO NOT USE*** *water jets.*

Fires in confined spaces should be dealt with by trained personnel wearing approved breathing apparatus and fire-resistant clothing.

Combustion Products
Toxic fumes may be evolved on burning or exposure to heat (See Stability and Reactivity, Section 10).

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6. Accidental Release Measures

In the event of spillages contact the appropriate authorities.
Any spillage should be regarded as a potential fire risk.
Isolate spillage from all ignition sources including road traffic.
Ensure good ventilation.
Evacuate all non essential personnel from the immediate area.
Wear protective clothing (See Exposure Controls/Personal Protection, section 8).
Spilled material may make surfaces slippery.
Recovery of large spillages should be effected by specialist personnel.
Large and uncontained spillages should be smothered with foam to reduce the risk of ignition.
Protect drains from potential spills to minimise contamination. Do not wash product into drainage system.
Vapour is heavier than air and may travel to remote sources of ignition (e.g. along drainage systems, in basements etc.).
Vapour may collect in any confined space.
If spillage has occurred in a confined space, ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry.

In the case of spillage on water, prevent the spread of product by the use of suitable barrier equipment. Recover product from the surface. Protect environmentally sensitive areas and water supplies.
In the case of spillage at sea approved dispersants may be used where authorised by the appropriate government/regulatory authorities.

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7. Handling and Storage

Handling

Ensure good ventilation and avoid as far as reasonably practicable the inhalation and contact with vapours, mists or fumes which may be generated during use. If such vapour, mists or fumes are generated, their concentration in the workplace air should be controlled to the lowest reasonably practicable level.
Do not siphon product by mouth.
Avoid contact with skin and observe good personal hygiene. Wash hands thoroughly after contact.
Avoid contact with eyes. If splashing is likely to occur wear a full face visor or chemical goggles as appropriate.
Whilst using do not eat, drink or smoke.
Use disposable cloths and discard when soiled. Do not put soiled cloths into pockets.
The product may contain volatile hydrocarbons which may accumulate in the container headspace, thereby creating a flammable or explosive atmosphere.

Storage

Store and dispense only in well ventilated areas away from heat and sources of ignition.
Containers must be properly labelled and kept closed when not in use.
Protect containers against static electricity, lighting and physical damage.
Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapour concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume.
Confined spaces contaminated with hydrogen sulphide must always be considered as constituting potentially life threatening environments. Entry into such spaces must never be undertaken except under extreme emergency when no alternative is possible and then only by trained operators wearing air-supplied breathing apparatus of an approved type and following procedures strictly in accordance with the Statutory Regulations governing such entry (See Exposure Controls/Personal Protection, section 8).
Always have sufficient people standing by outside the tank with appropriate breathing apparatus and equipment to effect a quick rescue.

Fire Prevention

Light hydrocarbon vapours can build up in the headspace of tanks. Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks.
Will present a flammability hazard if heated above flash point but bulk liquids at normal storage temperatures will present virtually no fire hazard. If fuel contacts hot surfaces, or leaks from high pressure fuel pipes, the vapour and/or mists generated will create a flammability or explosion hazard.
When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure.
Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.
Empty containers represent a fire hazard as they may contain some remaining flammable product and vapour. Never cut, weld, solder or braze empty containers.

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8. Exposure Controls/Personal Protection

Exposure Limits
There is no appropriate occupational exposure limit for this material.
Avoid, as far as reasonably practicable, inhalation of vapour, mists or fumes generated during use.
If vapour, mists or fumes are generated, their concentration in the workplace air should be controlled to the lowest reasonably practicable level.

Protective Clothing
Wear face visor or goggles in circumstances where eye contact can accidentally occur.
If skin contact is likely, wear impervious protective clothing and/or gloves.
Protective clothing should be regularly inspected and maintained; overalls should be dry-cleaned, laundered and preferably starched after use.

Respiratory Protection
If operations are such that exposure to vapour, mist or fume may be anticipated, then suitable approved respiratory equipment should be worn.
The use of respiratory equipment must be strictly in accordance with the manufacturers' instructions and any statutory requirements governing its selection and use.
Oxygen levels should be at least 19.5 % in confined spaces or other work areas.

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9. Physical and Chemical Properties

Typical Values

	Test Method	Units	
Physical state			liquid
Colour			clear [may be dyed to comply with local regulations/ requirements]
Odour			characteristic hydrocarbon
Density @ 15°C	ASTM D 1298	kg/m³	890 (max)
Kinematic viscosity @ 40°C	ASTM D 445	mm²/s	1.5 - 6
Flash point (PMC)	ASTM D 93	°C	55 min

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10. Stability and Reactivity

Stable at ambient temperatures.
Hazardous polymerisation reactions will not occur.

Conditions to avoid
Sources of ignition such as naked flames, sparks, hot surfaces.
Avoid storage at or near flash point.

Materials to avoid
Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products
Thermal decomposition products will vary with conditions.
Incomplete combustion will generate smoke, carbon dioxide and hazardous gases, including carbon monoxide.
Hydrogen sulphide (H_2S) may released on heating and may accumulate in confined spaces.

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11. Toxicological Information

Acute

Eyes	*Unlikely to cause more than transient stinging or redness if accidental eye contact occurs.*
Skin	*Unlikely to cause harm to the skin on brief or occasional contact but prolonged or repeated exposure may lead to dermatitis.*
Ingestion	*Unlikely to cause harm if accidentally swallowed in small doses, though larger quantities may cause nausea and diarrhoea.* *Will injure the lungs if aspiration occurs, e.g. during vomiting.*
Inhalation	*May cause irritation to eyes, nose and throat due to exposure to vapour, mists or fumes.*

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

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12. Ecological Information

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

Persistence and degradability
According to EC criteria: not readily biodegradable.

Potential to bioaccumulate
This product is expected to bioaccumulate.

Aquatic toxicity
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

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13. Disposal Considerations

Dispose of by incineration or other suitable means under conditions approved by the local authority or via a licensed waste disposal contractor.
At sea, used or unwanted product should be stored for eventual discharge into port approved waste oil disposal facilities.
Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

14. Transport Information

Sea Transport

Flammable Liquids	
IMO/IMDG	Gas oil
UN No.	1202
IMO, IMDG Class	3.3
Classification Code	F1
Packing Group	III
Marine pollutant	No
EmS No	3-07
MFAG Table No	311

Road/Rail Transport

Flammable liquids	
ADR/RID	Gas oil
UN No.	1202
ADR/RID Class	3,31 (c)
Classification Code	F1
Packing Group	III
Hazard Identification No.	30
CEFIC Tremcard No	26
UK Emergency action code	3Z
Pollutant to the aquatic Environment	No

Inland waterways

Flammable liquids	
ADNR	Gas oil
UN No.	1202
ADNR Class	3,31 (c)
Packing Group	III

Air Transport

Flammable liquids	
IATA/ICAO	Gas oil
UN No.	1202
IATA/ICAO Class	3
Packing Group	III

15. Regulatory Information

EU Category of Danger

Carcinogenic category 3
Harmful
Dangerous for the environment

EU Labelling

Symbol	St. Andrew's Cross Dead tree and fish
Indication of danger	Harmful Dangerous for the environment Contains: Fuels, Diesel

Risk (R) Phrases

R40	Limited evidence of a carcinogenic effect.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking

Safety (S) Phrases

S2	Keep out of the reach of children
S24	Avoid contact with skin
S36/37	Wear suitable protective clothing and gloves.
S43	In case of fire, use foam, dry powder, CO_2. Never use water jets.
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Hazardous ingredients

Fuels, diesel

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16. Other Information

Hazardous concentrations of hydrogen sulphide (H_2S) gas can accumulate in storage and rundown tanks, marine vessel compartments, sump pits or other confined spaces. When opening valves, hatches and dome covers, stand upwind, keep face as far from the opening as possible and avoid breathing any gases or vapours. When exposure concentrations are unknown and respiratory protection is not used, personal H_2S warning devices should be worn, These devices should not be relied on to warn of life threatening concentrations. H_2S fatigues the sense of smell rapidly. The rotten egg odour of H_2S disappears quickly, even though high concentrations are still present. The ACGIH TLV/TWA for H_2S is 10 ppm, the STEL 15 ppm.

The company recommends that all exposures to this product be minimized by strictly adhering to recommended occupational control procedures to avoid any potential adverse health effects.

All information contained in this Material Safety Data Sheet and, in particular, the health and safety and environmental information is accurate to the best of our knowledge and belief as at the date of issue specified. However, the company makes no warranty or representation, express or implied, as to the accuracy or completeness of such information.

The provision of this Material Safety Data Sheet is not intended, of itself, to obviate the need for all users to satisfy themselves that the product described is suitable for their individual purposes and that the safety precautions and environmental advice are adequate for their individual purposes and situation. Further, it is user's obligation to use this product safely and to comply with all applicable laws and regulations concerning the use of the product.

The company accepts no responsibility for any injury, loss or damage, consequent upon any failure to follow the safety and other recommendations contained in this Material Safety Data Sheet, nor from any hazards inherent in the nature of the material, nor from any abnormal use of the material.