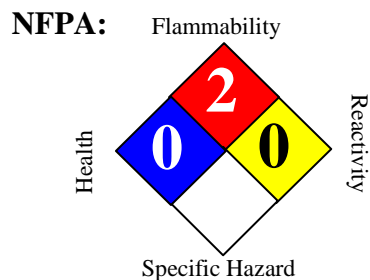


# Safety Data Sheet

## Marine Gas Oil



### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product name</b>	:	Marine Gas Oil			
<b>Synonyms</b>	:	MGO, MDO, Marine Diesel oil, DMA, DMB, Marine Diesel Fuel, 888100005492			
<b>SDS Number</b>	:	888100005492	<b>Version</b>	:	1.12
<b>Product Use Description</b>	:	Fuel			
<b>Company</b>	:	For: Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway, San Antonio, TX 78259			
<b>Tesoro Call Center</b>	:	(877) 783-7676	<b>Chemtrec (Emergency Contact)</b>	:	(800) 424-9300

### SECTION 2. HAZARDS IDENTIFICATION

<b>Classifications</b>	:	Flammable Liquid – Category 3 Aspiration Hazard – Category 1 Carcinogenicity – Category 2 Acute Toxicity - Inhalation – Category 4 Chronic Aquatic Toxicity – Category 2
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**Pictograms**



<b>Signal Word</b>	:	<b>Danger</b>
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<b>Hazard Summary</b>	:	Flammable liquid and vapor. May be fatal if swallowed and enters airways – do not siphon diesel by mouth. Suspected of causing skin cancer if repeated and prolonged skin contact occurs. Suspected of causing cancer in the respiratory system if repeated and prolonged over-exposure by inhalation occurs. Harmful if inhaled. May cause damage to liver, kidneys and nervous system by repeated and prolonged inhalation. Causes eye irritation by eye contact with liquid. Repeated or prolonged skin contact can cause skin irritation and dermatitis. May cause drowsiness or dizziness by inhalation.
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**Precautionary statements:**

**Prevention:**

- : Keep away from heat, sparks, open flames, welding and hot surfaces.
- No smoking.
- Keep container tightly closed.
- Ground and/or bond container and receiving equipment.
- Use explosion-proof electrical equipment.
- Use only non-sparking tools if tools are used in flammable atmosphere.
- Take precautionary measures against static discharge.
- Wear gloves, eye protection and face protection as needed to prevent skin and eye contact with liquid.
- Wash hands or liquid-contacted skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Do not breathe vapors or mists.
- Use only outdoors or in a well-ventilated area.

**Response:**

In case of fire: Use dry chemical, CO<sub>2</sub>, water spray or fire fighting foam to extinguish.

If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If skin or eye irritation persists, get medical attention.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call or doctor or emergency medical provider.

**Storage:** Store in a well ventilated place. Keep cool. Keep container tightly closed . Use only approved containers.

**Disposal:** Dispose of contents/containers to approved disposal site in accordance with local, regional, and national regulations.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No.	Weight %
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6	100%
Naphthalene	91-20-3	1 - 5%
Xylene	1330-20-7	1 - 5%
Nonane	111-84-2	0.75 - 1%
1,2,4-Trimethylbenzene	95-63-6	0.75 - 1%

Sulfur	7704-34-9	1.5% Maximum-DMA 2.5% Maximum-DMB
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#### SECTION 4. FIRST AID MEASURES

<b>Inhalation</b>	: Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.
<b>Skin contact</b>	: Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention.
<b>Eye contact</b>	: Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.
<b>Ingestion</b>	: Do NOT induce vomiting. Ingestion may result in nausea, vomiting, diarrhea and restlessness. Aspiration may cause pulmonary edema and pneumonitis. Seek medical attention immediately.
<b>Notes to physician</b>	: Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Lung edema, Liver disorders, Kidney disorders. Aspiration may cause pulmonary edema and pneumonitis.

#### SECTION 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media</b>	: SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO <sub>2</sub> , water spray or fire fighting foam. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Keep containers and surroundings cool with water spray.
<b>Specific hazards during fire fighting</b>	: Fire Hazard Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray.
<b>Special protective equipment for fire-fighters</b>	: Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.
<b>Further information</b>	: Exposure to decomposition products may be a hazard to health. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	: Consider wind direction; stay upwind and uphill, if possible. Evacuate nonessential personnel and remove or secure all ignition sources. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact. Ensure adequate ventilation. Use personal protective equipment.
<b>Environmental precautions</b>	: Carefully contain and stop the source of the spill, if safe to do so. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain

situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities.

- Methods for cleaning up** : Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

## SECTION 7. HANDLING AND STORAGE

- Precautions for safe handling** :
- Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.
  - Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initiated fire or explosion during transfer, storage or handling, include but are not limited to these examples:
    - (1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.
    - (2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha).
    - (3) Storage tank level floats must be effectively bonded.
- For more information on precautions to prevent static-initiated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).
- Conditions for safe storage, including incompatibilities** :
- Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".
- Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid vapors when opening hatches and dome covers. Confined spaces should be ventilated and gas tested prior to entry.
- Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.
  - No decomposition if stored and applied as directed.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines**

List	Components	CAS-No.	Type:	Value
OSHA Z1	Petroleum Distillates	N.A.	PEL	500 ppm 2000 mg/m3
	Naphthalene	91-20-3	PEL	10 ppm 50 mg/m3
	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
ACGIH	Diesel Fuel	68476-30-2	TWA	100 mg/m3
ACGIH	Naphthalene	91-20-3	TWA	10 ppm
		91-20-3	STEL	15 ppm
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Nonane	111-84-2	TWA	200 ppm

- Engineering measures** : Use only intrinsically safe electrical equipment approved for use in classified areas.
- Eye protection** : Safety glasses with side-shields reference to 29 CFR 1910.133
- Hand protection** : Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for further information.
- Skin and body protection** : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.
- Respiratory protection** : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. NIOSH/MSHA approved positive-pressure self-contained breathing apparatus (SCBA) or Type C positive-pressure supplied air with escape bottle must be used for gas concentrations above occupational exposure limits, for potential of uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere.
- Work / Hygiene practices** : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance** Clear to straw colored liquid

<b>Odor</b>	Characteristic petroleum or kerosene-like odor	
<b>Odor threshold</b>	0.1 - 1 ppm typically reported	
<b>pH</b>	Not applicable	
<b>Melting point/freezing point</b>	Gel point can be about -15°F; freezing requires laboratory condition	
<b>Initial boiling point &amp; range</b>	154 - 372 °C (310° - 702 °F)	
<b>Flash point</b>	52°C Minimum	
<b>Evaporation rate:</b>	Higher initially and declining as lighter components evaporate	
<b>Flammability (solid, gas)</b>	Flammable vapor released by liquid	
<b>Upper explosive limit</b>	5 %(V)	
<b>Lower explosive limit</b>	0.7 %(V)	
<b>Vapor pressure</b>	< 2 mm Hg at 20 °C	
<b>Vapor density (air = 1)</b>	> 4.5	
<b>Relative density (water = 1)</b>	0.86 g/mL	
<b>Solubility (in water)</b>	0.0005 g/100 mL	
<b>Partition coefficient (n-octanol/water)</b>	> 3.3 as log Pow	
<b>Auto-ignition temperature</b>	257 °C (495 °F)	
<b>Decomposition temperature</b>	Will evaporate or boil and possibly ignite before decomposition occurs.	
<b>Kinematic viscosity</b>	3 to 6 mm <sup>2</sup> /s range reported at ambient temperatures	
<b>Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature)</b>	Diesel Fuel Oils at terminal load rack:	At least 25 pS/m
	Ultra Low Sulfur Diesel (ULSD) without conductivity additive:	0 pS/m to 5 pS/m
	ULSD at terminal load rack with conductivity additive:	At least 50 pS/m
	JP-8 at terminal load rack:	150 pS/m to 600 pS/m

## SECTION 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Can react with strong oxidizing agents, peroxides, acids and alkalies.
<b>Conditions to avoid</b>	Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
<b>Hazardous decomposition products</b>	Ignition and burning can release carbon monoxide, carbon dioxide, non-combusted hydrocarbons (smoke) and, depending on formulation, trace amounts of sulfur dioxide. Diesel exhaust particulates may be a lung hazard (see Section 11).

## SECTION 11. TOXICOLOGICAL INFORMATION

<b>Inhalation</b>	: Vapors or mists from this material can irritate the nose, throat, and lungs, and can cause signs and symptoms of central nervous system depression, depending on the
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concentration and duration of exposure.

**Skin contact**

Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. Long-term, repeated skin contact may cause skin cancer.

**Eye contact**

Eye irritation may result from contact with liquid, mists, and/or vapors.

**Ingestion**

Harmful or fatal if swallowed. Do NOT induce vomiting. This material can irritate the mouth, throat, stomach, and cause nausea, vomiting, diarrhea and restlessness. Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death.

**Target organ**

Central nervous system, Eyes, Skin, Kidney, Liver

**Further information**

Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation. Positive mutagenicity results have been reported. Repeated over-exposure may cause liver and kidney injury. Components of the product may affect the nervous system. IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

**Component:**

**Fuels, diesel, No 2; Gasoil - unspecified**

68476-34-6

Acute oral toxicity: LD50 rat  
Dose: 5,001 mg/kg

Acute dermal toxicity: LD50 rabbit  
Dose: 2,001 mg/kg

Acute inhalation toxicity: LC50 rat  
Dose: 3.4 mg/l (aerosol, not vapor)  
Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.  
Result: Severe skin irritation

Eye irritation: Classification: Irritating to eyes.  
Result: Mild eye irritation

**Naphthalene**

91-20-3

Acute oral toxicity: LD50 rat  
Dose: 2,001 mg/kg

Acute dermal toxicity: LD50 rat  
Dose: 2,501 mg/kg

Acute inhalation toxicity: LC50 rat  
Dose: 101 mg/l  
Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.  
Result: Mild skin irritation

Eye irritation: Classification: Irritating to eyes.  
Result: Mild eye irritation

<b>Nonane</b>	111-84-2	<p><u>Acute oral toxicity:</u> LD50 mouse Dose: 218 mg/kg</p> <p><u>Acute inhalation toxicity:</u> LC50 rat Exposure time: 4 h</p>
<b>1,2,4-Trimethylbenzene</b>	95-63-6	<p><u>Acute inhalation toxicity:</u> LC50 rat Dose: 18 mg/l Exposure time: 4 h</p> <p><u>Skin irritation:</u> Classification: Irritating to skin. Result: Skin irritation</p>
<b>Xylene</b>	1330-20-7	<p><u>Acute oral toxicity:</u> LD50 rat Dose: 2,840 mg/kg</p> <p><u>Acute dermal toxicity:</u> LD50 rabbit Dose: ca. 4,500 mg/kg</p> <p><u>Acute inhalation toxicity:</u> LC50 rat Dose: 6,350 mg/l Exposure time: 4 h</p> <p><u>Skin irritation:</u> Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.</p> <p><u>Eye irritation:</u> Classification: Irritating to eyes. Result: Mild eye irritation</p>

**Carcinogenicity**

<b>NTP</b>	Naphthalene (CAS-No.: 91-20-3)
<b>IARC</b>	Naphthalene (CAS-No.: 91-20-3)
<b>OSHA</b>	No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.
<b>CA Prop 65</b>	WARNING! This product contains a chemical known to the State of California to cause cancer: naphthalene (CAS-No.: 91-20-3)

**SECTION 12. ECOLOGICAL INFORMATION**

**Additional ecological information** : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

**Component:**

<b>Naphthalene</b>	91-20-3	<p><u>Toxicity to algae:</u> EC50 Species: Dose: 33 mg/l Exposure time: 24 h</p>
<b>1,2,4-Trimethylbenzene</b>	95-63-6	<p><u>Toxicity to fish:</u> LC50 Species: Pimephales promelas (fathead minnow) Dose: 7.72 mg/l Exposure time: 96 h</p> <p><u>Acute and prolonged toxicity for aquatic invertebrates:</u></p>



EC50  
 Species: Daphnia  
 Dose: 3.6 mg/l  
 Exposure time: 48 h

Sulfur 7704-34-9

Acute and prolonged toxicity for aquatic invertebrates:  
 EC0  
 Species: Daphnia magna (Water flea)  
 Dose: > 10,000 mg/l  
 Exposure time: 24 h

### SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal** : Consult federal, state and local waste regulations to determine appropriate waste characterization of material and allowable disposal methods.

### SECTION 14. TRANSPORT INFORMATION

#### CFR

Proper shipping name : DIESEL FUEL  
 UN-No. : 1202  
 Class : 3  
 Packing group : III

#### TDG

Proper shipping name : DIESEL FUEL  
 UN-No. : UN1202  
 Class : 3  
 Packing group : III

#### IATA Cargo Transport

UN UN-No. : UN1202  
 Description of the goods : DIESEL FUEL  
 Class : 3  
 Packaging group : III  
 ICAO-Labels : 3  
 Packing instruction (cargo aircraft) : 366  
 Packing instruction (cargo aircraft) : Y344

#### IATA Passenger Transport

UN UN-No. : UN1202  
 Description of the goods : DIESEL FUEL  
 Class : 3  
 Packaging group : III  
 ICAO-Labels : 3  
 Packing instruction (passenger aircraft) : 309  
 Packing instruction (passenger aircraft) : Y309

#### IMDG-Code

UN-No. : UN 1202

Description of the goods : DIESEL FUEL  
 Class : 3  
 Packaging group : III  
 IMDG-Labels : 3  
 EmS Number : F-E S-E  
 Marine pollutant : No

## SECTION 15. REGULATORY INFORMATION

TSCA Status : On TSCA Inventory  
 DSL Status : All components of this product are on the Canadian DSL list.  
 SARA 311/312 Hazards : Fire Hazard  
 Acute Health Hazard  
 Chronic Health Hazard

### CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

#### Components

#### CAS-No.

**Naphthalene** 91-20-3  
**Xylene** 1330-20-7  
**1,2,4-trimethylbenzene** 95-63-6

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

#### Components

#### CAS-No.

**Sulfur** 7704-34-9  
**1,2,4-trimethylbenzene** 95-63-6  
**Nonane** 111-84-2  
**Xylene** 1330-20-7  
**Naphthalene** 91-20-3  
**Fuels, diesel, No 2; Gasoil - unspecified** 68476-34-6

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

#### Components

#### CAS-No.

**Sulfur** 7704-34-9  
**1,2,4-Trimethylbenzene** 95-63-6  
**Nonane** 111-84-2

Xylene 1330-20-7

Naphthalene 91-20-3

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

**Components** CAS-No.

Sulfur 7704-34-9

1,2,4-Trimethylbenzene 95-63-6

Nonane 111-84-2

Xylene 1330-20-7

Naphthalene 91-20-3

Fuels, diesel, No 2; Gasoil - unspecified 68476-34-6

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

## SECTION 16. OTHER INFORMATION

### Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

Revision Date : 11/17/2012

1260, 1320, 1321, 1323, 1620