



# Material Safety Data Sheet

**SECTION 1 PRODUCT AND COMPANY IDENTIFICATION**

## DISTILLATE MARINE GAS OIL (DMA)

**Product Use:** Gas Oil  
**Product Number(s):** 32782  
**Company Identification**  
Chevron Marine Products LLC  
1500 Louisiana Street  
Houston, TX 77002  
United States of America

**Transportation Emergency Response**  
USA: CHEMTREC (800) 424-9300 or (703) 527-3887  
Asia: +65 6883 1111

**Health Emergency**  
Chevron Emergency Information Center: Emergency Information Centers are located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

**Product Information**  
Product Information: USA: 832-854-6000  
MSDS Requests: USA: 832-854-6000

**SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS**

COMPONENTS	CAS NUMBER	AMOUNT
Fuels, diesel	68334-30-5	100 %weight

**SECTION 3 HAZARDS IDENTIFICATION**

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### EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- MAY CAUSE RESPIRATORY TRACT IRRITATION IF INHALED
- MAY CAUSE LUNG DAMAGE IF SWALLOWED
- CAUSES SKIN IRRITATION
- MAY CAUSE CANCER BASED ON ANIMAL DATA
- TOXIC TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

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### IMMEDIATE HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation.  
**Skin:** Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed

through the skin.

**Ingestion:** Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

**Inhalation:** The vapor or fumes from this material may cause respiratory irritation. Mists of this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing.

#### **DELAYED OR OTHER HEALTH EFFECTS:**

**Cancer:** Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Prolonged or repeated exposure to this material may cause cancer.

See Section 11 for additional information. Risk depends on duration and level of exposure.

### **SECTION 4 FIRST AID MEASURES**

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person. If swallowed, get medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

**Inhalation:** Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.

**Note to Physicians:** Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

### **SECTION 5 FIRE FIGHTING MEASURES**

See Section 7 for proper handling and storage.

#### **FIRE CLASSIFICATION:**

OSHA Classification (29 CFR 1910.1200): Combustible liquid.

**NFPA RATINGS:** Health: 1 Flammability: 2 Reactivity: 0

#### **FLAMMABLE PROPERTIES:**

**Flashpoint:** (Pensky-Martens Closed Cup) 62 °C (143 °F) Minimum

**Autoignition:** 350 °C (662 °F)

**Flammability (Explosive) Limits (% by volume in air):** Lower: 1 Upper: 6 (Estimated)

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

#### **PROTECTION OF FIRE FIGHTERS:**

**Fire Fighting Instructions:** For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F).

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Do not breathe mist. Wash thoroughly after handling.

**Unusual Handling Hazards:** WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

**General Storage Information:** DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces. USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:**

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.

**Respiratory Protection:** Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.

When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

**Occupational Exposure Limits:**

Component	Agency	TWA	STEL	Ceiling	Notation
Fuels, diesel	ACGIH	100 mg/m <sup>3</sup>	--	--	Skin A3 total hydrocarbon
Fuels, diesel	CVX	--	1000 mg/m <sup>3</sup>	--	--

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Attention: the data below are typical values and do not constitute a specification.

**Color:** Amber

**Physical State:** Liquid

**Odor:** Petroleum odor

**pH:** Not Applicable

**Vapor Pressure:** 0.04 kPa (Approximate) @ 40 °C (104 °F)

**Vapor Density (Air = 1):** >1

**Boiling Point:** 160°C (320°F) - 400°C (752°F)

**Solubility:** Insoluble

**Freezing Point:** Not Applicable

**Melting Point:** Not Applicable

**Density:** 810 - 890 kg/m<sup>3</sup> @ 15°C (59°F)

**Viscosity:** 1.5 mm<sup>2</sup>/s @ 40°C (104°F) Minimum

**SECTION 10 STABILITY AND REACTIVITY**

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Conditions to Avoid:** Avoid contact with heat, sparks, fire and oxidizing agents

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The Draize eye irritation mean score in rabbits for a 24-hour exposure was: <10/110.

**Skin Irritation:** For a 24-hour exposure, the Primary Irritation Score (PIS) in rabbits is: >5 / 8.0.

**Skin Sensitization:** This material did not cause skin sensitization reactions in a Buehler guinea pig test.

**Acute Dermal Toxicity:** LD50: >5ml/kg (rabbit).

**Acute Oral Toxicity:** LD50: >5 ml/kg (rat)

**Acute Inhalation Toxicity:** 4 hour(s) LC50: >5mg/kg (rat).

### ADDITIONAL TOXICOLOGY INFORMATION:

The National Institute of Occupational Safety and Health (NIOSH) has recommended that whole diesel exhaust be regarded as potentially causing cancer. This recommendation was based on test results showing increased lung cancer in laboratory animals exposed to whole diesel exhaust.

This product contains gas oils.

CONCAWE (product dossier 95/107) has summarized current health, safety and environmental data available for a number of gas oils, typically hydrodesulfurized middle distillates, CAS 64742-80-9, straight-run middle distillates, CAS 64741-44-2, and/or light cat-cracked distillate CAS 64741-59-9.

**CARCINOGENICITY:** All materials tested have caused the development of skin tumors in mice, but all featured severe skin irritation and sometimes a long latency period before tumors developed.

Straight-run and cracked gas oil samples were studied to determine the influence of dermal irritation on the carcinogenic activity of middle distillates. At non-irritant doses the straight-run gas oil was not carcinogenic, but at irritant doses, weak activity was demonstrated. Cracked gas oils, when diluted with mineral oil, demonstrated carcinogenic activity irrespective of the occurrence of skin irritation. Gas oils were tested on male mice to study tumor initiating/promoting activity. The results demonstrated that while a straight-run gas oil sample was neither an initiator or promotor, a blend of straight-run and FCC stock was both a tumor initiator and a promotor.

**GENOTOXICITY:** Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly positive in in-vitro bacterial mutagenicity assays. Mouse lymphoma assays on straight-run gas oils without subsequent hydrodesulphurization gave positive results in the presence of S9 metabolic activation. In-vivo bone marrow cytogenetics and sister chromatic exchange assay exhibited no activity for straight-run components with or without hydrodesulphurization. Thermally or catalytically cracked gas oils tested with in-vitro bacterial mutagenicity assays in the presence of S9 metabolic activation were shown to be mutagenic. In-vitro sister chromatic exchange assays on cracked gas oil gave equivocal results both with and without S9 metabolic activation. In-vivo bone marrow cytogenetics assay was inactive for two cracked gas oil samples. Three hydrocracked gas oils were tested with in-vitro bacterial mutagenicity assays with S9, and one of the three gave positive results. Twelve distillate fuel samples were tested with in-vitro bacterial mutagenicity assays & with S9 metabolic activation and showed negative to weakly positive results. In one series, activity was shown to be related to the PCA content of samples tested. Two in-vivo studies were also conducted. A mouse dominant lethal assay was negative for a sample of diesel fuel. In the other study, 9 samples of No 2 heating oil containing 50% cracked stocks caused a slight increase in the number of chromosomal aberrations in bone marrow cytogenetics assays. **DEVELOPMENTAL TOXICITY:** Diesel fuel vapor did not cause fetotoxic or teratogenic effects when pregnant rats were exposed on days 6-15 of pregnancy. Gas oils were applied to the skin of pregnant rats daily on days 0-19 of gestation. All but one (coker light gas oil) caused fetotoxicity (increased resorptions, reduced litter weight, reduced litter size) at dose levels that were also maternally toxic.

This product may contain significant amounts of Polynuclear Aromatic Hydrocarbons (PAH's) which have been shown to cause skin cancer after prolonged and frequent contact with the skin of test animals. Brief or intermittent skin contact with this product is not expected to have serious effects if it is washed from the skin. While skin cancer is unlikely to occur in human beings following use of this product, skin

contact and breathing, of mists, vapors or dusts should be reduced to a minimum.

**SECTION 12 ECOLOGICAL INFORMATION**

**ECOTOXICITY**

48 hour(s) Water Accomodated Fraction: 20-210 mg/l (Daphnia magna)  
72 hour(s) Water Accomodated Fraction: 2.6-25 mg/l (Raphidocellus subcapitata)  
96 hour(s) Water Accomodated Fraction: 21-210 mg/l (Salmo gairdneri)  
This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

**ENVIRONMENTAL FATE**

This material is not expected to be readily biodegradable. On release to the environment the lighter components of diesel fuel will generally evaporate but depending on local environmental conditions (temperature, wind, mixing or wave action, soil type, etc.) the remainder may become dispersed in the water column or absorbed to soil or sediment. Diesel fuel would not be expected to be readily biodegradable. In a modified Strum test (OECD method 301B) approximately 40% biodegradation was recorded over 28 days. However, it has been shown that most hydrocarbon components of diesel fuel are degraded in soil in the presence of oxygen. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

**SECTION 13 DISPOSAL CONSIDERATIONS**

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

**SECTION 14 TRANSPORT INFORMATION**

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** UN1202, GAS OIL, COMBUSTIBLE LIQUID, III

**IMO/IMDG Shipping Description:** MAY BE REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO

**SECTION 15 REGULATORY INFORMATION**

<b>EPCRA 311/312 CATEGORIES:</b>  YES	1.	Immediate (Acute) Health Effects:	YES	YES
	2.	Delayed (Chronic) Health Effects:	YES	
	3.	Fire Hazard:		
	4.	Sudden Release of Pressure Hazard:	NO	
	5.	Reactivity Hazard:		NO

**REGULATORY LISTS SEARCHED:**

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Fuels, diesel 07

**CHEMICAL INVENTORIES:**

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

**NEW JERSEY RTK CLASSIFICATION:**

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: DIESEL FUEL

<b>SECTION 16 OTHER INFORMATION</b>
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**NFPA RATINGS:** Health: 1 Flammability: 2 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, \*- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 1, 16.

**Revision Date:** June 24, 2009

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.
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The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.