

MATERIAL SAFETY DATA SHEET

Revision Date: 04/29/2003

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: GN LS Diesel 2
MSDS NUMBER: 400535E - 2
PRODUCT CODE(S): 00429

MANUFACTURER
Shell Oil Products US
P. O. Box 4453
Houston, TX. 77210-4453

TELEPHONE NUMBERS
Spill Information: (877) 242-7400
Health Information: (877) 504-9351
MSDS Assistance Number: (877) 276-7285

SECTION 2 PRODUCT/INGREDIENTS

INGREDIENTS	CAS#	CONCENTRATION
#2 Diesel	Mixture	100 %weight
Full Range Straight Run Middle Distillate	68814-87-9	0 - 100 %weight
Hydrotreated Middle Distillate	64742-46-7	0 - 100 %weight
Light Catalytic Cracked Distillate	64741-59-9	0 - 40 %weight
Benzene	71-43-2	0.01 - 0.65 %weight
Sulfur	7704-34-9	0 - 0.05 %weight

NOTE: H2S is a naturally occurring constituent in the petroleum stream and is not added separately to the product.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance & Odor: Bright and clear liquid (Tax Exempt Diesels - pale red liquid). Oil-type odor.
Health Hazards: Hydrogen sulfide (H2S), an extremely flammable and toxic gas, may be present. Causes severe skin irritation. Toxic and harmful if inhaled. May be harmful or fatal if swallowed. Do not induce vomiting. May cause aspiration pneumonitis.

Physical Hazards: Combustible Liquid.

NFPA Rating (Health, Fire, Reactivity): 2, 2, 0

Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

Inhalation:

In applications where vapors (caused by high temperature) or mists (caused by mixing or spraying) are created, breathing may cause a mild burning sensation in the nose, throat and lungs. Toxic and harmful if inhaled. Hydrogen Sulfide (H2S) and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. Hydrogen Sulfide is an extremely flammable, toxic gas. Inhalation of vapors, mist or fumes (generated at high temperatures) may cause irritation to the nose, throat and respiratory tract.

Eye Irritation:

May cause slight irritation of the eyes. If irritation occurs, a temporary burning sensation, minor redness, swelling, and/or blurred vision may result.

Skin Contact:

Severely irritating to the skin causing pain, redness and swelling. Other adverse effects not expected from brief skin contact.

Ingestion:

This material may be harmful or fatal if swallowed. Ingestion may result in vomiting; aspiration (breathing) of vomitus into lungs must be avoided as even small quantities may result in aspiration pneumonitis. Generally considered to have a low order of acute oral toxicity.

Other Health Effects:

Carcinogenic in animal tests. It is probable that the material causes cancer in laboratory animals.

Material may release hydrogen sulfide (H₂S), a highly toxic and extremely flammable gas, when heated to 180 Degrees F or higher. H₂S can cause irritation of the eyes and respiratory tract, headache, dizziness, nausea, vomiting, diarrhea, and pulmonary edema. The odor ("rotten egg") threshold is 0.02 ppm. Do not depend on sense of smell for warning; H₂S rapidly deadens the sense of smell.

Refer to Section 11, Toxicological Information, for specific information on the following effects:

Genotoxicity

Signs and Symptoms:

Irritation as noted above. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin); in severe cases death may occur.

For additional health information, refer to section 11.

SECTION 4 FIRST AID MEASURES**Inhalation:**

Vaporization of H₂S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from victim to rescuer. Mechanical ventilation should be used to resuscitate the victim. DO NOT attempt to rescue victim unless proper respiratory protection is worn. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin:

Remove contaminated clothing. Flush with large amounts of water for at least 15 minutes and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye:

Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment.

Ingestion:

DO NOT take internally. In general no treatment is necessary unless large quantities are swallowed, however, get medical advice. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Note to Physician:

If more than 2.0ml/kg body weight has been ingested and vomiting has not occurred, emesis should be induced with supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point [Method]: >125 °F/>51.67 °C [Closed Cup]

Autoignition Temperature: 500 °F/260 °C

Flammability in Air: 0.5 - 4.4 %volume

Extinguishing Media:

Material will float and can be re-ignited on surface of water. Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions:

CAUTION! COMBUSTIBLE. Clear fire area of all non-emergency personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. Cool surrounding equipment, fire-exposed containers and structures with water. Container areas exposed to direct flame contact should be cooled with large quantities of water (500 gallons water per minute flame impingement exposure) to prevent weakening of container structure.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures:

CAUTION! COMBUSTIBLE. Eliminate potential sources of ignition. Handling equipment must be bonded and grounded to prevent sparking.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management:

Shut off source of leak if safe to do so. Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Reporting:

U.S. regulations require reporting releases of this material to the environment which exceed the reportable quantity to the National Response Center at (800)424-8802.

CWA: This product is an oil as defined under Section 311 of EPA's Clean Water Act (CWA). Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 1-800-424-8802.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures:

CAUTION! COMBUSTIBLE. Do not breathe material. Keep container closed. Use only with adequate ventilation. Avoid heat, open flames, including pilot lights, and strong oxidizing agents. Use explosion-proof ventilation to prevent vapor accumulation. Ground all handling equipment to prevent sparking. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Material may release hydrogen sulfide (H₂S), a highly toxic and extremely flammable gas, when heated to 180 Degrees F or higher. H₂S may collect in the headspace of the container.

Handling:

Surfaces that are sufficiently hot may ignite liquid material.

Storage:

Keep liquid and vapor away from heat, sparks and flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors have dissipated. Use explosion-proof ventilation indoors and in laboratory settings.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical	Limit	TWA	STEL	Ceiling	Notation
Benzene	ACGIH TLV	0.6 ppmv	2.5 ppmv		Skin

Benzene	OSHA PEL	1 ppmv	5 ppmv		
Diesel Fuel, as total hydrocarbons	ACGIH TLV	100 mg/m3			

Decomposition Product	Limit	TWA	STEL	Ceiling	Notation
Carbon dioxide	ACGIH - TLV	6000 ppmm	30000 ppmm		
Carbon dioxide	OSHA - PEL		30000 ppmm		
Carbon dioxide	OSHA - PEL IS	10000 ppmm			
Carbon monoxide	OSHA - PEL	35 ppmv		200 ppmv	

Decomposition Product	Method	Condition
Carbon dioxide	Combustion	
Carbon monoxide	Combustion	

Exposure Controls

Adequate explosion-proof ventilation to control airborne concentrations.

Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles - If liquid contact is likely, or Safety glasses with side shields

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by: Neoprene, or Nitrile Rubber

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

Supplied-Air Respirator, Air-Purifying Respirator for Organic Vapors, Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Bright and clear liquid (Tax Exempt Diesels - pale red liquid), Oil-type odor.

Substance Chemical Family: Petroleum Hydrocarbon, Fuel Oil

Auto Ignition Temperature	500 °F	Flammability In Air	0.6 - 4.4 %volume
Flash Point	> 125 °F [Closed Cup]	Specific Gravity	0.85 Typical
Stability	Stable	Vapor Pressure	0.02 mmHg Typical [Calculated]
Viscosity	1.9 - 4.1 cSt @ 40 °C		

SECTION 10 REACTIVITY AND STABILITY

Stability:

Material is stable under normal conditions.

Conditions to Avoid:

Avoid heat and open flames.

Materials to Avoid:

Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products:

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Aldehydes, Carbon Monoxide, Carbon Dioxide, Ketones and other unidentified organic compounds may be formed upon combustion.

SECTION 11	TOXICOLOGICAL INFORMATION
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Acute Toxicity

TEST	Result	OSHA Classification	Material Tested
Dermal LD50	> 5 ml/kg(Rabbit)	Non-Toxic	Based on similar material(s)
Eye Irritation	Non-Irritating [Rabbit]	Non-Irritating	Based on similar material(s)
Oral LD50	9 ml/kg(Rat)	Non-Toxic	Based on similar material(s)
Skin Irritation Draize	Extremely Irritating [Rabbit]	Irritating	Based on similar material(s)

Carcinogenicity Classification

Chemical Name	NTP	IARC	ACGIH	OSHA
#2 Diesel	No	No	No	No
Benzene	Yes	Carcinogen (1)	A1	Yes
Light Catalytic Cracked Distillate	No	Possible Carcinogen (2B)	No	No

Carcinogenicity	Related materials have caused the development of skin tumors in lifetime mouse skin painting studies. However, these tumors have a long latency period and may be associated with the repeated severe irritation caused by the test materials. Prolonged and repeated exposure to high concentrations (10s to 100s ppm) of benzene may cause serious injury to blood-forming organs and is associated with anemia (depletion of blood cells) and is linked to the later development of acute myelogenous leukemia (AML).
Genotoxicity	A closely related component (Hydrodesulfurized Middle Distillate) did not cause detectable mutations in two different in vivo (live animal) studies. Some evidence of genotoxicity was seen in separate in vitro (test tube) studies, usually in cases where the test material was metabolically activated.

SECTION 12	ECOLOGICAL INFORMATION
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Environmental Impact Summary:

There is no ecological data available for this product.

SECTION 13	DISPOSAL CONSIDERATIONS
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RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures,

processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal.

SECTION 14 TRANSPORT INFORMATION

US Department of Transportation Classification

Proper Shipping Name: Diesel Fuel
Identification Number: NA1993
Hazard Class/Division: Combustible Liquid
Packing Group: III
Hazardous Substance/Material RQ: Benzene / 1546.2005 lbs

Oil: This product is an oil under 49CFR (DOT) Part 130. If shipped by rail or highway in a tank with a capacity of 3500 gallons or more, it is subject to these requirements. Mixtures or solutions containing 10% or more of this product may also be subject to this rule.

Emergency Response Guide # 128

International Air Transport Association

Hazard Class/Division: 3 (Flammable Liquid)
Identification Number: UN1202
Packing Group: III
Proper Shipping Name: Diesel Fuel

International Maritime Organization Classification

Hazard Class/Division: 3 (Flammable Liquid)
Identification Number: UN1202
Packing Group: III
Proper Shipping Name: Diesel Fuel

SECTION 15 REGULATORY INFORMATION

Federal Regulatory Status

OSHA Classification:

Product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA):

Benzene RQ 10 lbs Reportable Spill => 10 lbs or 1.41 gal

Ozone Depleting Substances (40 CFR 82 Clean Air Act):

This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

Superfund Amendment & Reauthorization Act (SARA) Title III:

SARA Extremely Hazardous Substances (302/304):

Hydrogen sulfide RQ 100 lbs Reportable Spill => 711012.800477 lbs or 100334.13 gal

SARA Hazard Categories (311/312):

Immediate Health	Delayed Health	Fire	Pressure	Reactivity
YES	YES	YES	NO	NO

SARA Toxic Release Inventory (TRI) (313):
Benzene**Toxic Substances Control Act (TSCA) Status:**

This material is listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories:

Australian AICS, Canadian DSL, European EINECS, Korean Inventory,

State Regulation

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

New Jersey Right-To-Know Chemical List:

Benzene (71-43-2)	0.01 - 0.65 %weight	Carcinogen
Benzene (71-43-2)	0.01 - 0.65 %weight	Mutagen
Light Cat Cracked Distillate	0 - 40 %weight	Mutagen

Pennsylvania Right-To-Know Chemical List:

Benzene (71-43-2)	0.01 - 0.65 %weight	Spec Haz Sub/Env Hazardous
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SECTION 16 OTHER INFORMATION**Revision#: 2****Revision Date: 04/29/2003**

Revisions since last change (discussion): This Material Safety Data Sheet (MSDS) has been newly reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-1998). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

SECTION 17 LABEL INFORMATION

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT

CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 00429

GN LS Diesel 2

WARNING!

COMBUSTIBLE LIQUID! MAY BE FATAL IF INHALED. CAUSES SEVERE SKIN IRRITATION. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS BENZENE WHICH IS A CANCER HAZARD - LINKED TO DEVELOPMENT OF ACUTE MYELOGENOUS LEUKEMIA.

Refer to Section 11, Toxicological Information, for specific information on the following effects:
Genotoxicity

Precautionary Measures: Avoid heat and open flames. Hydrogen Sulfide and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. Hydrogen Sulfide is an extremely flammable, toxic gas. Respiratory protection should be worn when venting tanks. Avoid breathing of vapors, fumes, or mist. Do not take internally. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Keep container closed when not in use. Wash thoroughly after handling.

FIRST AID

Inhalation: DO NOT attempt to rescue victim unless proper respiratory protection is worn. Vaporization of H₂S that has been trapped in clothing can be dangerous to rescuers. Maintain respiratory protection to avoid contamination from victim to rescuer. Mechanical ventilation should be used to resuscitate the victim. If the victim has difficulty breathing or tightness of the chest, is dizzy, vomiting or unresponsive, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.

Skin Contact: Remove contaminated clothing. Flush with large amounts of water for at least 15 minutes and follow by washing with soap if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

Eye Contact: Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision or swelling occur, transport to nearest medical facility for additional treatment.

Ingestion: DO NOT take internally. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

FIRE

In case of fire, Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water. Material will float and can be re-ignited on surface of water.

SPILL OR LEAK

Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Full Range Straight Run Middle Distillate, 68814-87-9; Hydrotreated Middle Distillate, 64742-48-7; Light Catalytic Cracked Distillate, 64741-59-9; Benzene, 71-43-2; Sulfur, 7704-34-9

NFPA Rating (Health, Fire, Reactivity): 2, 2, 0

TRANSPORTATION**US Department of Transportation Classification**

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Name and Address

Shell Oil Products US
 P. O. Box 4453
 Houston, TX 77210-4453

ADMINISTRATIVE INFORMATION

MANUFACTURER ADDRESS: Shell Oil Products US, P. O. Box 4453, Houston, TX. 77210-4453
Company Product Stewardship & Regulatory Compliance Contact: David Snyder
Phone Number: (281) 874-7728

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