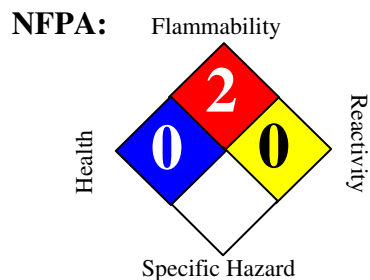


Material Safety Data Sheet

Gas Oil, Virgin



HMIS III:

HEALTH	1
FLAMMABILITY	2
PHYSICAL	0

0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	: Gas Oil, Virgin
Synonyms	: Straight Run; Virgin Gas Oil; VGO, FCC Charge, Desulfurized Gas Oil, Gas Oil, Vacuum Straight Run, Hydrodesulfurized Gas Oil, 888100004794
MSDS Number	: 888100004794 Version : 2.5
Product Use Description	: Fuel
Company	: For: Tesoro Refining & Marketing Co. 300 Concord Plaza Drive, San Antonio, TX 78216-6999
Tesoro Call Center	: (877) 783-7676 Chemtrec (Emergency Contact) : (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Regulatory status	: This material is considered hazardous by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).
Signal Word	: WARNING
Hazard Summary	: Combustible Liquid. Slight to moderate irritant. Skin cancer hazard. Affects central nervous system. Harmful or fatal if swallowed.

Potential Health Effects

Eyes	: May cause eye irritation.
Skin	: May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. May cause dermal sensitization. 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.
Ingestion	: This material has a low order of acute toxicity. If large quantities are ingested, nausea, vomiting and diarrhea may result. Ingestion may also cause effects similar to inhalation of the product. 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. Ingestion may also lead to central nervous system (brain) effects which may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure and death.
Inhalation	: Because of its low vapor pressure, this product presents a minimal inhalation

hazard at ambient temperature. Upon heating, fumes may be evolved. Inhalation of fumes or mist may result in respiratory tract irritation and central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death. Irritating and toxic hydrogen sulfide gas may be present. Greater than 15 - 20 ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50 - 500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500 ppm can cause rapid unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and successfully resuscitated. Greater than 1000 ppm can cause immediate unconsciousness and death if not promptly revived. After-effects from overexposure are not anticipated except what would be expected if the victim was without oxygen for more than 3 to 5 minutes (asphyxiation). The "rotten egg" odor of hydrogen sulfide is not a reliable indicator for warning of exposure, since olfactory fatigue (loss of smell) readily occurs, especially at concentrations above 50 ppm. At high concentrations, the victim may not even recognize the odor before becoming unconscious.

- Chronic Exposure** : Petroleum industry experience indicates that a program providing for good personal hygiene, proper use of personal protective equipment, and minimizing the repeated and prolonged exposure to liquids and fumes, as outlined in this MSDS, is effective in reducing or eliminating the carcinogenic risk of high boiling aromatic oils (polynuclear aromatic hydrocarbons) to humans.
- Target Organs** : Respiratory system, Eyes, Skin, Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash)

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Gas oils (petroleum), straight-run	64741-43-1	100%
Sulfur	7704-34-9	0.5 - 1.5%

SECTION 4. FIRST AID MEASURES

- Inhalation** : Remove to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.
- Skin contact** : Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Wash contaminated clothing before re-use. If symptoms persist, seek medical attention.
- Eye contact** : 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.
- Ingestion** : Do NOT induce vomiting. Do not give liquids. Obtain medical attention. If vomiting does occur naturally, keep head below the hips to reduce the risks of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

Notes to physician : Symptoms: Dizziness, Disorientation, Headache, Nausea, Vomiting, Unconsciousness, Abdominal pain, Diarrhea, Aspiration may cause pulmonary edema and pneumonitis., Kidney disorders, Liver disorders

SECTION 5. FIRE-FIGHTING MEASURES

Form : Liquid

Flash point : > 61 °C (> 142 °F)

Suitable extinguishing media : Water spray, Dry chemical, Foam, Carbon dioxide (CO2), Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting : 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.

Special protective equipment for fire-fighters : Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Further information : Flammable vapor production at ambient temperature in the open is expected to be minimal unless the oil is heated above its flash point. When heated to flash point and mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas.

Environmental precautions : Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material.

Methods for cleaning up : Take up with sand or oil absorbing materials. Carefully vacuum, shovel, scoop or sweep up into a waste container for reclamation or disposal.

SECTION 7. HANDLING AND STORAGE

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.

Advice on protection against fire and explosion : 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-initated 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-initated 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).

Requirements for storage areas and containers

: 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.

Advice on common storage

: Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

Other data

: No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA Z1	Gas Oils (petroleum), straight-run	64741-43-1	PEL	5 mg/m3
	Hydrogen Sulfide	7783-06-4	STEL	20 ppm
ACGIH	Gas Oils (petroleum), straight-run	64741-43-1	TWA	5 mg/m3
	Hydrogen Sulfide	7783-06-4	TWA	10 ppm
			STEL	15 ppm

Engineering measures

: Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Eye protection

: Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Hand protection	: Gloves constructed of nitrile, neoprene, or PVC are recommended.
Skin and body protection	: Chemical protective clothing such as DuPont Tyvek QC, TyChem® 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. Consult manufacturer specifications for further information.
Respiratory protection	: If hydrogen sulfide concentration may exceed permissible exposure limit, a positive-pressure SCBA or Type C supplied air respirator with escape bottle is required as respiratory protection. If hydrogen sulfide concentration is below H2S permissible exposure limit a NIOSH/ MSHA-approved air-purifying respirator with acid gas cartridges may be acceptable for odor control, but continuous air monitoring for H2S is recommended. Protection provided by air-purifying respirators is limited. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection. 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.
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

Form	: Liquid
Appearance	: Yellow to Black
Odor	: Petroleum distillate
Flash point	: > 61 °C (> 142 °F)
Auto Ignition temperature	: 5 °C (41 °F)
Thermal decomposition	: No decomposition if stored and applied as directed.
pH	: Not applicable
Boiling point	: 160 - 370 °C(320 - 698 °F)
Vapor Pressure	: < 0.1 psia @ 21 °C (70 °F)
Relative Vapor Density	: >1
SPECIFIC GRAVITY (H2O = 1)	: < 1.0
Density	: 0.93 g/cm3
Water solubility	: Negligible

Percent Volatiles : 100 %

Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature) : Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products.

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers. Keep away from flame, sparks, excessive temperatures and open flame.

Materials to avoid : Strong oxidizing agents. Peroxides

Hazardous decomposition products : Carbon monoxide, carbon dioxide and noncombusted hydrocarbons (smoke).

Thermal decomposition : No decomposition if stored and applied as directed.

Hazardous reactions : Keep away from oxidizing agents, and acidic or alkaline products. Hazardous polymerization does not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Carcinogenicity

NTP : No component of this product which is present at levels greater than or equal to 0.1 % is identified as a known or anticipated carcinogen by NTP.

IARC : No component of this product which is present at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA : 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.

CA Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

Further information : Liver and kidney injuries may occur. Components of the product may affect the nervous system. This material contains polynuclear aromatic hydrocarbons (PNAs), some of which are animal carcinogens. 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. The presence of carcinogenic PNAs indicates that precautions should be taken to minimize repeated and prolonged inhalation of fumes or mists. Dermal application of gas oil to rats resulted in limited evidence of liver damage (i.e., increased liver weight and changes in hepatic serum enzyme activity) and bone marrow toxicity (hypoplasia and decreased hemoglobin.)

Component:

Petroleum Distillates

64741-43-1

Acute oral toxicity: LD50 rat
Dose: 5,000 mg/kg

Not dangerous goods

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Combustible Liquid
TSCA Status : On TSCA Inventory
DSL Status : All components of this product are on the Canadian DSL list.
SARA 311/312 Hazards : Fire Hazard
PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components**CAS-No.****Gas oils (petroleum), straight-run**

64741-43-1

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

Components**CAS-No.****Gas oils (petroleum), straight-run**

64741-43-1

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

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.

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