

## Section 1. Identification

**Product name** : Gas Oil - Flammable  
**Product code** : Not available.  
**Synonyms** : Atmospheric Gas Oil (AGO), Cat Charge, Deasphalted Oil (DAO), Deasphalted Oil (PDA Overhead), FCC Charge (Sweet Gas oil), FCC Combined Feed, FCC Feed, Fuel Oil (Heavy Ends), GHC Charge (Sour Gas oil), HCGO - Heavy Coker Gas Oil, Heavy Atmospheric Gas Oil, Heavy Vacuum Gas Oil (HVGO), LEF, LEU Rafinate, Light Vacuum Gas Oil (LVGO), Medium Vacuum Gas Oil (MVGO), Refinery Heavy Slop, Vacuum Gas Oil (VGO), W-150 (lube base oil), W-450 (lube base oil), W-650 (lube base oil), W-70 (lube base oil), W-850 (lube base oil)

### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : Industrial: Intermediate.  
**Area of application** : Industrial applications.

**Manufacturer** : HollyFrontier Refining & Marketing LLC  
2828 North Harwood  
Suite 1300  
Dallas, Texas 75201  
USA  
Customer Service: 1-214-954-6720

**e-mail address of person responsible for this SDS** : hfcsds@hollyfrontier.com  
**Emergency telephone number** : CHEMTREC® (800) 424-9300  
CCN 201319

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : H226 FLAMMABLE LIQUIDS - Category 3  
H332 ACUTE TOXICITY (inhalation) - Category 4  
H315 SKIN IRRITATION - Category 2  
H350 CARCINOGENICITY - Category 1B  
H361 TOXIC TO REPRODUCTION - Category 2  
H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
H304 ASPIRATION HAZARD - Category 1

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

<b>Hazard statements</b>	: <ul style="list-style-type: none"> <li>H226 - Flammable liquid and vapor.</li> <li>H304 - May be fatal if swallowed and enters airways.</li> <li>H315 - Causes skin irritation.</li> <li>H332 - Harmful if inhaled.</li> <li>H350 - May cause cancer.</li> <li>H361 - Suspected of damaging fertility or the unborn child.</li> <li>H373 - May cause damage to organs through prolonged or repeated exposure. (blood system, bone marrow, liver, spleen, thymus) (dermal)</li> </ul>
<b>Precautionary statements</b>	
<b>Prevention</b>	: <ul style="list-style-type: none"> <li>Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash thoroughly after handling.</li> </ul>
<b>Response</b>	: <ul style="list-style-type: none"> <li>If exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention.</li> </ul>
<b>Storage</b>	: Store in a well-ventilated place. Keep cool.
<b>Disposal</b>	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: Avoid contact with skin and clothing. Wash thoroughly after handling. Heated material can cause thermal burns.
<b>Hazards not otherwise classified</b>	: Prolonged or repeated contact may dry skin and cause irritation. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

### Section 3. Composition/information on ingredients

**Substance/mixture** : Multi-constituent substance

#### CAS number/other identifiers

**CAS number** : Not available.

Ingredient name	Other names	%	CAS number
Distillates (petroleum), straight-run middle	-	0 - 100	64741-44-2
Clarified oils (petroleum), catalytic cracked	-	0 - 100	64741-62-4
Gas oils (petroleum), heavy vacuum	-	0 - 100	64741-57-7
Gas oils (petroleum), light vacuum	-	0 - 100	64741-58-8
hydrogen sulphide	-	0.0001	7783-06-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention. Continue to rinse for at least 15 minutes.

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Slightly irritating to the eyes. Possible tearing, burning sensation and redness.
- Inhalation** : Harmful if inhaled. Mist/high concentrations: Inhalation may cause irritation to the nose, throat, upper respiratory tract and lungs.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : May be fatal if swallowed and enters airways.

#### Over-exposure signs/symptoms

- Eye contact** : pain or irritation; watering; redness
- Inhalation** : respiratory tract irritation; coughing
- Skin contact** : irritation; redness; dryness; cracking
- Ingestion** : nausea or vomiting

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of medical responders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## **Section 5. Fire-fighting measures**

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

<b>Hazardous thermal decomposition products</b>	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
<b>Special protective actions for fire-fighters</b>	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<b>Special protective equipment for fire-fighters</b>	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.
<b>For emergency responders</b>	: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
<b>Environmental precautions</b>	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

<b>Small spill</b>	: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
<b>Large spill</b>	: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, waterways, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

<b>Protective measures</b>	: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. High pressure skin injections are serious medical emergencies. Injury will not appear serious at first. Within a few hours, tissue will become swollen,
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**Advice on general occupational hygiene**

discolored and extremely painful. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities**

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

**Control parameters****Occupational exposure limits**

Ingredient name	Exposure limits
Distillates (petroleum), straight-run middle Clarified oils (petroleum), catalytic cracked Gas oils (petroleum), heavy vacuum	None. None. <b>NIOSH REL (United States, 10/2016).</b> TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Mist STEL: 10 mg/m <sup>3</sup> 15 minutes. Form: Mist
Gas oils (petroleum), light vacuum hydrogen sulphide	None. <b>ACGIH TLV (United States, 3/2020).</b> TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes. <b>OSHA PEL Z2 (United States, 2/2013).</b> CEIL: 20 ppm AMP: 50 ppm 10 minutes. <b>NIOSH REL (United States, 10/2016).</b> CEIL: 10 ppm 10 minutes. CEIL: 15 mg/m <sup>3</sup> 10 minutes.

**Appropriate engineering controls**

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

**Environmental exposure controls**

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures****Hygiene measures**

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin protection**

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

- Physical state** : Liquid. [Viscous]
- Color** : Black./Dark brown.
- Odor** : Asphalt
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point, initial boiling point, and boiling range** : 86 to 311°C (186 to 591°F)
- Flash point** : Closed cup: ≤60°C (≤140°F)
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not applicable.
- Vapor pressure** : Not available.
- Relative vapor density** : Not available.
- Relative density** : 0.86 to 0.94
- Density** : Not available.
- Solubility** : Insoluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : ☒ Not applicable.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): 0.029 to 0.979 cm<sup>2</sup>/s (2.9 to 97.9 cSt)
- Flow time (ISO 2431)** : Not available.
- Particle characteristics**
- Median particle size** : ☒ Not applicable.
- Additional information**
- Physical/chemical properties comments** : No additional information.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerization will not occur.

**Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatible materials** : Reactive or incompatible with the following materials:  
oxidizing materials

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), straight-run middle	LC50 Inhalation Dusts and mists	Rat	1.78 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Clarified oils (petroleum), catalytic cracked	LC50 Inhalation Dusts and mists	Rat	4 mg/l	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Gas oils (petroleum), heavy vacuum	LC50 Inhalation Dusts and mists	Rat	4 mg/l	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Gas oils (petroleum), light vacuum	LC50 Inhalation Dusts and mists	Rat	≥4.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>4300 mg/kg	-
	LD50 Oral	Rat	>7600 mg/kg	-
hydrogen sulphide	LC50 Inhalation Gas.	Rat	444 ppm	4 hours

**Conclusion/Summary** : Based on CONCAWE assessment of straight-run gas oils.  
Based on CONCAWE assessment of heavy fuel oil components.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels.

#### Irritation/Corrosion

Not available.

#### Conclusion/Summary

##### Skin

: Based on CONCAWE assessment of straight-run gas oils. Non-irritating to the skin.  
Based on CONCAWE assessment of heavy fuel oil components. Slight irritant.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. Irritating to skin.

##### Eyes

: Based on CONCAWE assessment of straight-run gas oils. Non-irritating to the eyes.  
Based on CONCAWE assessment of heavy fuel oil components. May cause slight transient irritation.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. Non-irritating to the eyes.

**Sensitization****Conclusion/Summary****Skin**

: Based on CONCAWE assessment of straight-run gas oils. Not sensitizing.  
Based on CONCAWE assessment of heavy fuel oil components. Not sensitizing.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. Not sensitizing.

**Respiratory**

: No data available.

**Mutagenicity****Conclusion/Summary**

: Based on CONCAWE assessment of straight-run gas oils. No mutagenic effect.  
Based on CONCAWE assessment of heavy fuel oil components. No mutagenic effect.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. No mutagenic effect.

**Carcinogenicity****Conclusion/Summary**

: Based on CONCAWE assessment of straight-run gas oils. Weak carcinogenic potential.  
Based on CONCAWE assessment of heavy fuel oil components. Carcinogenic.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. Suspected of causing cancer.

**Reproductive toxicity****Conclusion/Summary**

: Based on CONCAWE assessment of straight-run gas oils. Not considered to be toxic to the reproductive system.  
Based on CONCAWE assessment of heavy fuel oil components. Not considered to be toxic to the reproductive system.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. Not considered to be toxic to the reproductive system.

**Teratogenicity****Conclusion/Summary**

: Based on CONCAWE assessment of straight-run gas oils. No teratogenic effect.  
Based on CONCAWE assessment of heavy fuel oil components. Developmental effects.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels. No teratogenic effect.

**Specific target organ toxicity (single exposure)**

Name	Category	Route of exposure	Target organs
hydrogen sulphide	Category 3 Category 3	-	Respiratory tract irritation Narcotic effects

**Specific target organ toxicity (repeated exposure)**

Name	Category	Route of exposure	Target organs
Gas Oil - Flammable	Category 2	dermal	blood system, bone marrow, liver, spleen, thymus
Distillates (petroleum), straight-run middle	Category 2	dermal	bone marrow, liver, spleen
Clarified oils (petroleum), catalytic cracked	Category 2	dermal	blood system, liver, thymus
Gas oils (petroleum), heavy vacuum	Category 2	dermal	blood system, liver, thymus
Gas oils (petroleum), light vacuum	Category 2	dermal	bone marrow, liver, thymus
hydrogen sulphide	Category 2	inhalation	lungs

**Aspiration hazard**

Name	Result
Gas Oil - Flammable	ASPIRATION HAZARD - Category 1
Distillates (petroleum), straight-run middle	ASPIRATION HAZARD - Category 1
Clarified oils (petroleum), catalytic cracked	ASPIRATION HAZARD - Category 1
Gas oils (petroleum), heavy vacuum	ASPIRATION HAZARD - Category 1
Gas oils (petroleum), light vacuum	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

#### Delayed and immediate effects and also chronic effects from short and long term exposure

##### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

##### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

##### Potential chronic health effects

**Conclusion/Summary** : Based on CONCAWE assessment of straight-run gas oils.  
Based on CONCAWE assessment of heavy fuel oil components.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels.

**General** : May cause damage to organs through prolonged or repeated exposure in contact with skin. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : Suspected of damaging the unborn child.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

#### Numerical measures of toxicity

##### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Gas Oil - Flammable	N/A	N/A	N/A	N/A	2.3
Distillates (petroleum), straight-run middle	N/A	2500	N/A	N/A	1.78
Clarified oils (petroleum), catalytic cracked	N/A	N/A	N/A	N/A	4
Gas oils (petroleum), heavy vacuum	N/A	2500	N/A	N/A	4
Gas oils (petroleum), light vacuum	N/A	2500	N/A	N/A	1.5
hydrogen sulphide	N/A	N/A	444	N/A	N/A

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Clarified oils (petroleum), catalytic cracked	Acute EC50 <1 mg/l	Algae	72 hours
Gas oils (petroleum), heavy vacuum	Chronic NOEL 0.1 mg/l Acute EC50 <1 mg/l	Daphnia Algae	21 days 72 hours
Gas oils (petroleum), light vacuum	Chronic NOEL 0.1 mg/l Acute EC50 2 to 100 mg/l	Daphnia Algae	21 days 72 hours
hydrogen sulphide	Acute EC50 2 to 100 mg/l Acute LC50 2 to 100 mg/l Acute EC50 62 µg/l Fresh water	Daphnia Fish Crustaceans - Gammarus pseudolimnaeus	48 hours 96 hours 2 days
	Acute LC50 2 µg/l Fresh water	Fish - Coregonus clupeaformis - Yolk-sac fry	96 hours

**Conclusion/Summary** : Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels.  
Based on CONCAWE assessment of heavy fuel oil components.  
Based on CONCAWE assessment of straight-run gas oils. Read across information from vacuum gas oils, hydrocracked oils and distillate fuels.

### Persistence and degradability

**Conclusion/Summary** : Based on CONCAWE assessment of straight-run gas oils.  
Based on CONCAWE assessment of heavy fuel oil components.  
Based on CONCAWE assessment of vacuum gas oils, hydrocracked gas oils, and distillate fuels.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), straight-run middle	-	-	Inherent
Clarified oils (petroleum), catalytic cracked	-	-	Inherent
Gas oils (petroleum), heavy vacuum	-	-	Inherent
Gas oils (petroleum), light vacuum	-	-	Inherent

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Distillates (petroleum), straight-run middle	≥4	-	high
Clarified oils (petroleum), catalytic cracked	4 to 6	-	high
Gas oils (petroleum), heavy vacuum	4 to 6	-	high
Gas oils (petroleum), light vacuum	>4	-	high

### Mobility in soil





**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1202	UN1202	UN1202
UN proper shipping name	Gas oil	GAS OIL	Gas oil
Transport hazard class(es)	3 	3  	3 
Packing group	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.

### Additional information

#### DOT Classification

- : This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials.

**Limited quantity** Yes.

**Packaging instruction** Exceptions: 150. Non-bulk: 203. Bulk: 242.

**Quantity limitation** Passenger aircraft/rail: 60 L. Cargo aircraft: 220 L.

**Special provisions** 144, B1, IB3, T2, TP1

#### IMDG

- : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

**Emergency schedules** F-E, S-E

#### IATA

- : The environmentally hazardous substance mark may appear if required by other transportation regulations.

**Quantity limitation** Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355.

Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344.


**Special provisions** A3

- Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information


**U.S. Federal regulations** :  **United States inventory (TSCA 8b)**: All components are active or exempted.  
 **Clean Water Act (CWA) 311**: hydrogen sulphide

[Department of homeland security \(DHS\), Chemical Facility Anti-terrorism Standards \(6 CFR 27\), Appendix A, Chemicals of Interest](#)

	Name	%	Status
Security	 hydrogen sulphide	0.0001	Listed


### SARA 302/304

#### Composition/information on ingredients


Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
 hydrogen sulphide	0.0001	Yes.	500	-	100	-

**SARA 304 RQ** : 100000000 lbs / 45400000 kg [13326012.4 gal / 50444444.4 L]

### SARA 311/312

**Classification** :  **FLAMMABLE LIQUIDS** - Category 3  
**ACUTE TOXICITY (inhalation)** - Category 4  
**SKIN IRRITATION** - Category 2  
**CARCINOGENICITY** - Category 1B  
**TOXIC TO REPRODUCTION** - Category 2  
**SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE)** - Category 2  
**ASPIRATION HAZARD** - Category 1  
**HNOC** - Defatting irritant

#### Composition/information on ingredients

Name	%	Classification
 Distillates (petroleum), straight-run middle	0 - 100	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
Clarified oils (petroleum), catalytic cracked	0 - 100	ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
Gas oils (petroleum), heavy vacuum	0 - 100	ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
Gas oils (petroleum), light vacuum	0 - 100	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1
hydrogen sulphide	0.0001	HNOC - Defatting irritant FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas ACUTE TOXICITY (inhalation) - Category 2

Gas Oil - Flammable		HF Sinclair
		EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

#### SARA 313

Not applicable.

#### State regulations

- Massachusetts** : The following components are listed: OIL MIST, MINERAL
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED)
- Pennsylvania** : None of the components are listed.
- California Prop. 65**

☒ This product does not require a Safe Harbor warning under California Prop. 65.

#### International regulations

##### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

##### Montreal Protocol

Not listed.

##### Stockholm Convention on Persistent Organic Pollutants

Not listed.

##### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

##### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

#### Inventory list

- Australia** : ☒ All components are listed or exempted.
- Canada** : ☒ All components are listed or exempted.
- China** : ☒ All components are listed or exempted.
- Europe** : ☒ All components are listed or exempted.
- Japan** : ☒ **Japan inventory (CSCL)**: Not determined.  
**Japan inventory (ISHL)**: Not determined.
- Malaysia** : ☒ Not determined
- New Zealand** : ☒ Not determined.
- Philippines** : ☒ Not determined.
- Republic of Korea** : ☒ All components are listed or exempted.
- Taiwan** : ☒ All components are listed or exempted.
- Turkey** : ☒ Not determined.

## Section 16. Other information

### Hazardous Material Information System (U.S.A.)

Health	3
Flammability	2
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### National Fire Protection Association (U.S.A.)



### Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 ASPIRATION HAZARD - Category 1	On basis of test data Calculation method Calculation method Calculation method Calculation method Expert judgment On basis of test data

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**Version** : 3

**Key to abbreviations** :

- ATE = Acute Toxicity Estimate
- AMP = Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- UN = United Nations

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named manufacturer, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.