



# Safety Data Sheet

**Material Name: Low Gravity Residual Fuel Oil**

**SDS No. 15063**  
EU/CLP GHS

**Synonyms:** Residual Fuel Oil

## \*\*\* Section 1 - Product and Company Identification \*\*\*

### Manufacturer Information

Hess Corporation  
1 Hess Plaza  
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS  
Emergency # 800-424-9300 CHEMTREC  
[www.hess.com](http://www.hess.com) (Environment, Health, Safety Internet Website)

## \*\*\* Section 2 - Hazards Identification \*\*\*

### GHS Classification:

Carcinogenicity - Category 1B

### GHS LABEL ELEMENTS

#### Symbol(s)



#### Signal Word

Danger

#### Hazard Statements

May cause cancer.

#### Precautionary Statements

##### Prevention

Wear protective gloves/protective clothing/eye protection/face protection.  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.

##### Response

IF exposed or concerned: Get medical advice/attention.

##### Storage

Store locked up.

##### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## \*\*\* Section 3 - Composition / Information on Ingredients \*\*\*

CAS #	Component	Percent
68476-33-5	Fuel oil	100
Not Available	Polycyclic aromatic compounds (PACs)	<1.5
7783-06-4	Hydrogen sulfide	<1

A complex combination of hydrocarbons produced by the distillation of products from crude oil and/or the fluidized catalytic cracking (FCC) process [up to 100% cat cracked clarified oil (CAS NUMBER: 64741-62-4)] with carbon numbers predominantly greater than C20 and boiling above 662 °F.

Hydrogen Sulfide (H2S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H2S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H2S by weight in liquid may produce 100 ppm or more H2S in the vapor headspace of the storage tank.

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

### First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

### First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

### First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

### General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When 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.

# Safety Data Sheet

**Material Name: Low Gravity Residual Fuel Oil**

**SDS No. 15063**

CAUTION: flammable vapor production at ambient temperature in the open is expected to be minimal unless the oil is heated above its flash point. However, industry experience indicates that light hydrocarbon vapors can build up in the headspace of storage tanks at temperatures below the flash point of the oil, presenting a flammability and explosion hazard. Tank headspaces should be regarded a potentially flammable, since the oil's flash point cannot be regarded as a reliable indicator of the potential flammability in tank headspaces.

## Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

## Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, fire fighting foam, CO<sub>2</sub>, and other gaseous agents.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

## Unsuitable Extinguishing Media

None

## Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. 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. 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.

<b>* * * Section 6 - Accidental Release Measures * * *</b>
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## Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

## Materials and Methods for Clean-Up

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

## Emergency Measures

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 confirm spill areas.

## Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

## Environmental Precautions

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. The use of fire fighting foam may be useful in certain situations to reduce vapors.

## Prevention of Secondary Hazards

None

# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Product is generally transported and stored hot (typical 110 - 140 °F). Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

### Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. 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 prior to entry.

### Incompatibilities

Keep away from strong oxidizers.

# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## \*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*

### Component Exposure Limits

#### Hydrogen sulfide (231-977-3)

ACGIH:	5 ppm STEL 1 ppm TWA
Austria:	10 ppm STEL [KZW]; 15 mg/m <sup>3</sup> STEL [KZW] 10 ppm TWA [TMW]; 15 mg/m <sup>3</sup> TWA [TMW]
Belgium:	10 ppm STEL; 14 mg/m <sup>3</sup> STEL 5 ppm TWA; 7 mg/m <sup>3</sup> TWA
Denmark:	10 ppm TWA; 15 mg/m <sup>3</sup> TWA
Finland:	10 ppm STEL; 14 mg/m <sup>3</sup> STEL; 15 ppm STEL (blasting and quarrying); 20 mg/m <sup>3</sup> STEL (blasting and quarrying) 5 ppm TWA; 7 mg/m <sup>3</sup> TWA; 10 ppm TWA (blasting and quarrying); 15 mg/m <sup>3</sup> TWA (blasting and quarrying)
France:	10 ppm STEL [VLCT]; 14 mg/m <sup>3</sup> STEL [VLCT] 5 ppm TWA [VME]; 7 mg/m <sup>3</sup> TWA [VME]
Germany:	5 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 2); 7.1 mg/m <sup>3</sup> TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 2) 5 ppm TWA MAK; 7.1 mg/m <sup>3</sup> TWA MAK 10 ppm Peak; 14.2 mg/m <sup>3</sup> Peak
Greece:	15 ppm STEL; 21 mg/m <sup>3</sup> STEL 10 ppm TWA; 15 mg/m <sup>3</sup> TWA
Ireland:	10 ppm STEL; 14 mg/m <sup>3</sup> STEL 5 ppm TWA; 7 mg/m <sup>3</sup> TWA
Netherlands:	2.3 mg/m <sup>3</sup> TWA
Portugal:	10 ppm TWA [VLE-MP]
Spain:	15 ppm STEL [VLA-EC]; 21 mg/m <sup>3</sup> STEL [VLA-EC] 10 ppm TWA [VLA-ED]; 14 mg/m <sup>3</sup> TWA [VLA-ED]
Sweden:	10 ppm LLV; 14 mg/m <sup>3</sup> LLV 15 ppm CLV; 20 mg/m <sup>3</sup> CLV

### Engineering Measures

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

### Personal Protective Equipment: Respiratory

If a hydrogen sulfide hazard is present (that is, exposure potential above H<sub>2</sub>S permissible exposure limit), use a positive-pressure SCBA or Type C supplied air respirator with escape bottle.

Where it has been determined that there is no hydrogen sulfide exposure hazard (that is, exposure potential below H<sub>2</sub>S permissible exposure limit), a NIOSH-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied 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.

# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

## Personal Protective Equipment: Eyes

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

## Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

## \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

<b>Appearance:</b>	Black, viscous	<b>Odor:</b>	Heavy, petroleum/asphalt-type odor
<b>Physical State:</b>	Liquid	<b>pH:</b>	ND
<b>Vapor Pressure:</b>	<0.1 psia @ 70 °F (21 °C)	<b>Vapor Density:</b>	NA
<b>Boiling Point:</b>	>500 °F (>260 °C)	<b>Melting Point:</b>	ND
<b>Solubility (H2O):</b>	Negligible	<b>Specific Gravity:</b>	0.876-1.000 (API 30.0-10.0)
<b>Evaporation Rate:</b>	Negligible	<b>VOC:</b>	ND
<b>Octanol/H2O Coeff.:</b>	ND	<b>Flash Point:</b>	>141 °F (>60 °C) minimum
<b>Flash Point Method:</b>	ASTM D-93	<b>Upper Flammability Limit (UFL):</b>	ND
<b>Lower Flammability Limit (LFL):</b>	ND	<b>Burning Rate:</b>	ND
<b>Auto Ignition:</b>	>765°F (>407°C)		

## \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

### Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

### Incompatible Products

Keep away from strong oxidizers.

### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

## \*\*\* Section 11 - Toxicological Information \*\*\*

### Acute Toxicity

#### A: General Product Information

Harmful if swallowed.

#### B: Component Analysis - LD50/LC50

##### Hydrogen sulfide (7783-06-4)

Inhalation LC50 Rat 0.701 mg/L 4 h; Inhalation LC50 Rat 0.99 mg/L 1 h

# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## Potential Health Effects: Skin Corrosion Property/Stimulativeness

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 hot (typically 110 - 120 °F) which could cause 1st, 2nd, or 3rd degree thermal burns.

## Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild to moderate irritation.

## Potential Health Effects: 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 may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

## Potential Health Effects: 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.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

WARNING: Irritating and toxic hydrogen sulfide gas may be found in confined vapor spaces. Greater than 15 - 20 ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50 - 500 ppm can cause headache, nausea, and dizziness, loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500 ppm can cause rapid or immediate unconsciousness due to respiratory paralysis and death by suffocation unless the victim is removed from exposure and successfully resuscitated. 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.

## Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

## Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects. Materials of similar composition have been positive in mutagenicity studies.

## Carcinogenicity

### A: General Product Information

May cause cancer.

This material contains polynuclear aromatic hydrocarbons (PNAs), some of which are animal carcinogens. Studies have shown that similar products produce 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 vapors or mists.

### B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

## Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

## Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

## Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

## Other Toxicological Information

Trace amounts of nickel, vanadium, and other metals in slurry oil can become concentrated in the oxide form in combustion ash deposits. Vanadium is a toxic metal affecting a number of organ systems. Nickel is a suspect human carcinogen (lung, nasal, sinus), an eye, nose, and throat irritant, and can cause allergic skin reaction in some individuals.

* * * <b>Section 12 - Ecological Information</b> * * *
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## Ecotoxicity

### A: General Product Information

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

#### Fuel oil (68476-33-5)

##### Test & Species

96 Hr LC50 Pimephales promelas

35 mg/L [flow-through]

##### Conditions

96 Hr LC50 Brachydanio rerio

48 mg/L [semi-static]

#### Hydrogen sulfide (7783-06-4)

##### Test & Species

96 Hr LC50 Lepomis macrochirus

0.0448 mg/L [flow-through]

##### Conditions

96 Hr LC50 Pimephales promelas

0.016 mg/L [flow-through]

96 Hr LC50 Gammarus pseudolimnaeus

0.022 mg/L

## Persistence/Degradability

No information available.

## Bioaccumulation

No information available.

## Mobility in Soil

No information available.



# Safety Data Sheet

Material Name: Low Gravity Residual Fuel Oil

SDS No. 15063

## \*\*\* Section 13 - Disposal Considerations \*\*\*

### Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

### Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

## \*\*\* Section 14 - Transportation Information \*\*\*

### IATA Information

Shipping Name: Not Regulated

### ICAO Information

Shipping Name: Not Regulated

### IMDG Information

Shipping Name: Not Regulated

## \*\*\* Section 15 - Regulatory Information \*\*\*

### Regulatory Information

### Component Analysis – Inventory

Component/CAS	EC #	EEC	CAN	TSCA
Fuel oil 68476-33-5	270-675-6	EINECS	DSL	Yes
Hydrogen sulfide 7783-06-4	231-977-3	EINECS	DSL	Yes

## \*\*\* Section 16 - Other Information \*\*\*

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

### Literature References

None

# Safety Data Sheet

**Material Name: Low Gravity Residual Fuel Oil**

**SDS No. 15063**

## Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet