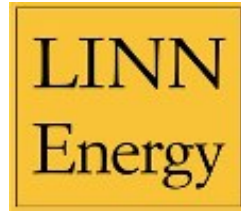


## Safety Data Sheet



## Section 1: Identification

## Product identifier

## Product Name

- Crude Oil

## Synonyms

- Crude; Petroleum; Petroleum Oil; Rock Oil

## CAS Number

- 8002-05-9

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

## Recommended use

- Industrial Use

## Details of the supplier of the safety data sheet

## Manufacturer

- Linn Operating, Inc.  
600 Travis  
Suite 5100 Houston, TX 77002  
United States  
www.linnenergy.com

Telephone (General) • 281-840-4000 - EHS Telephone No.

## Emergency telephone number

## Manufacturer

- 1-866-951-9825 - Company Emergency Telephone No. (3E)

## Section 2: Hazard Identification

## United States (US)

According to OSHA 29 CFR 1910.1200 HCS

## Classification of the substance or mixture

## OSHA HCS 2012

- Flammable Liquids 1 - H224  
Skin Irritation 2 - H315  
Eye Irritation 2A - H319  
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336  
Specific Target Organ Toxicity Repeated Exposure 2 - H373

## Label elements

## OSHA HCS 2012

**DANGER**



**Hazard statements** • Extremely flammable liquid and vapour - H224  
Causes skin irritation - H315

Causes serious eye irritation - H319  
 May cause drowsiness or dizziness - H336  
 May cause damage to organs (skin, thymus, bone marrow, and blood) through prolonged or repeated exposure via skin - H373

## Precautionary statements

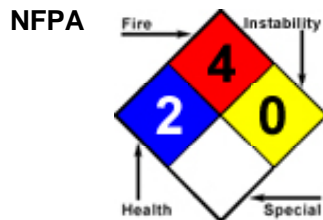
- Prevention** • Keep away from heat, sparks, open flames and/or hot surfaces. - P210  
 Keep container tightly closed. - P233  
 Ground and/or bond container and receiving equipment. - P240  
 Use explosion-proof electrical/ventilating/lighting/equipment. - P241  
 Use only non-sparking tools. - P242  
 Take precautionary measures against static discharge. - P243  
 Do not breathe mist/vapours/spray. - P260  
 Wash thoroughly after handling. - P264  
 Do not eat, drink or smoke when using this product. - P270  
 Use only outdoors or in a well-ventilated area. - P271  
 Wear protective gloves/protective clothing/eye protection/face protection. - P280
- Response** • In case of fire: Use appropriate media for extinction. - P370+P378  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340  
 Call a POISON CENTER or doctor/physician if you feel unwell. - P312  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. - P303+P361+P353  
 Wash with plenty of soap and water. - P352  
 If skin irritation occurs: Get medical advice/attention. - P332+P313  
 Wash contaminated clothing before reuse. - P363  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338  
 If eye irritation persists: Get medical advice/attention. - P337+P313  
 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. - P309+P311  
 Specific treatment, see supplemental first aid information. - P321
- Storage/Disposal** • Store locked up. - P405  
 Store in a well-ventilated place. Keep container tightly closed. - P403+P233  
 Keep cool. - P235  
 Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

## Other hazards

### OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

## Other information



## Section 3 - Composition/Information on Ingredients

### Substances

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Crude Oil	CAS:8002-05-9	100%	Ingestion/Oral-Rat LD50 • >4300 mg/kg	OSHA HCS 2012: Flam. Liq. 1; Eye Irrit. 2A; Skin Irrit. 2; STOT SE 3: Narc.; STOT RE 2 (dermal) - Blood, Thymus, Bone Marrow, Skin	NDA

## Mixtures

- Material does not meet the criteria of a mixture.

## Section 4: First-Aid Measures

### Description of first aid measures

#### Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

#### Skin

- Wash skin with soap and water. Remove and isolate contaminated clothing and shoes. If irritation develops and persists, get medical attention.

#### Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Remove contact lenses if worn. If irritation develops and persists, get medical attention.

#### Ingestion

- Get medical attention.

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

- Refer to Section 11 - Toxicological Information.

### Indication of any immediate medical attention and special treatment needed

#### Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## Section 5: Fire-Fighting Measures

### Extinguishing media

**Suitable Extinguishing Media** • Extinguish with foam, carbon dioxide, dry powder or water fog.

**Unsuitable Extinguishing Media** • No data available

### Special hazards arising from the substance or mixture

#### Unusual Fire and Explosion Hazards

- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Containers may explode when heated. Vapor explosion hazard indoors, outdoors or in sewers. Many liquids are lighter than water. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Runoff to sewer may create fire or explosion hazard. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

#### Hazardous Combustion Products

- Carbon Oxides, Hydrogen Sulfide.

### Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA).

Move containers from fire area if you can do it without risk.  
 FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.  
 LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.  
 FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.  
 FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.  
 FIRE INVOLVING TANKS: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

#### Personal Precautions

- Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not get in eyes or on skin or clothing. Do not breathe mist/vapors/spray.

#### Emergency Procedures

- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet) ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

### Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

#### Containment/Clean-up Measures

- Stop leak if you can do it without risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. A vapor suppressing foam may be used to reduce vapors. All equipment used when handling the product must be grounded. LARGE SPILLS: Dike far ahead of liquid spill for later disposal. LARGE SPILLS: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

## Section 7 - Handling and Storage

### Precautions for safe handling

#### Handling

- Avoid contact with heat and ignition sources. Use only with adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing vapor. Avoid prolonged or repeated contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

### Conditions for safe storage, including any incompatibilities

#### Storage

- Keep away from heat, sparks and flame. Keep container tightly closed and in a well ventilated place. Comply with all national, state, and local codes pertaining to storage, handling and disposal of flammable liquids. Keep away from incompatible materials.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

Exposure Limits/Guidelines		
	Result	NIOSH
Crude Oil	Ceilings	1800 mg/m <sup>3</sup> Ceiling (15 min)

(8002-05-9)

TWAs

350 mg/m3 TWA

**Exposure controls****Engineering Measures/Controls**

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Equipment****Respiratory**

- Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**

- Wear chemical splash safety goggles.

**Skin/Body**

- Wear suitable protective clothing, gloves.

**Environmental Exposure Controls**

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

**Key to abbreviations**

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

NIOSH = National Institute of Occupational Safety and Health

**Section 9 - Physical and Chemical Properties****Information on Physical and Chemical Properties****Material Description**

Physical Form	Liquid	Appearance/Description	Light yellow to dark viscous liquid with hydrocarbon, may have rotten egg odor.
Color	Light yellow to dark.	Odor	Hydrocarbon, may have rotten egg odor.

**General Properties**

Boiling Point	12 to 593 C(53.6 to 1099.4 F)	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	0.7 to 1.1 Water=1 @ 4 C(39.2 F)	Water Solubility	Negligible
Viscosity	Data lacking		

**Volatility**

Vapor Pressure	35 to 42 (Reid) (Approximate)	Vapor Density	Data lacking
Evaporation Rate	Data lacking		

**Flammability**

Flash Point	-6 to 32 C(21.2 to 89.6 F)	UEL	8 % (Approximate)
LEL	1 % (Approximate)	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		

**Environmental**

Octanol/Water Partition coefficient	Data lacking		
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**Section 10: Stability and Reactivity**

**Reactivity**

- No dangerous reaction known under conditions of normal use.

**Chemical stability**

- Stable under normal temperatures and pressures.

**Possibility of hazardous reactions**

- Hazardous polymerization will not occur.

**Conditions to avoid**

- Keep away from heat, sparks and flame. Prevent buildup of vapors or gases to explosive concentrations.

**Incompatible materials**

- Strong oxidizing agents.

**Hazardous decomposition products**

- No data available.

**Section 11 - Toxicological Information****Information on toxicological effects**

	CAS	
Crude Oil	8002-05-9	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • >4300 mg/kg; <b>Irritation:</b> Eye-Rabbit • 100 mg • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Moderate irritation

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Irritation 2
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 2
STOT-SE	OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Eye Irritation 2A

**Target Organs**

- Blood, Thymus, Bone Marrow

**Route(s) of entry/exposure**

- Inhalation, Skin, Eye, Ingestion

**Potential Health Effects****Inhalation****Acute (Immediate)**

- May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

**Chronic (Delayed)**

- No data available.

**Skin**

**Acute (Immediate)**

- Causes skin irritation.

**Chronic (Delayed)**

- Repeated exposure may cause skin dryness or cracking. Repeated and prolonged exposure may affect the blood, thymus, and bone marrow.

**Eye****Acute (Immediate)**

- Causes serious eye irritation.

**Chronic (Delayed)**

- No data available.

**Ingestion****Acute (Immediate)**

- Ingestion may cause vomiting, nausea, diarrhea or other systemic effects.

**Chronic (Delayed)**

- No data available.

**Key to abbreviations**

LD = Lethal Dose

MLD = Mild

MOD = Moderate

**Section 12 - Ecological Information****Toxicity**

- Material data lacking.

**Persistence and degradability**

- Material data lacking.

**Bioaccumulative potential**

- Material data lacking.

**Mobility in Soil**

- Material data lacking.

**Other adverse effects**

- No studies have been found.

**Section 13 - Disposal Considerations****Waste treatment methods****Product waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Section 14 - Transport Information**

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN1267	Petroleum crude oil	3	I	NDA

**Special precautions for user**

- None known.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

- Not relevant.

## Section 15 - Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**SARA Hazard Classifications** ● Fire, Acute, Chronic

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## Section 16 - Other Information

**Last Revision Date** ● 24/June/2014

**Preparation Date** ● 24/June/2014

**Disclaimer/Statement of Liability** ● This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

**Key to abbreviations**

NDA = No data available

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