Lion Oil Company

Product: 12 Product (ULSD) **Revision No. 2**

MSDS No. LO0455 **Date of Preparation: 04/13/11**

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: 12 Product (ULSD)
Chemical Formula: Mixture
CAS Number: 68476-34-6
Synonyms: Ultra Low Sulfur Diesel, ULSD, S 15 Diesel
Description: Yellow-Green color with distinct hydrocarbon odor
Manufacturer or Distributor: Lion Oil Co., 1000 McHenry St., El Dorado, AR 71730; (870) 862-8111
24-hr Emergency Phone Number: "FOR CHEMICAL EMERGENCY" Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC – Day or Night 800-424-9300
MSDS CONTACT: Beverly McFarland, 870-864-1306

Section 2 - Hazards Identification

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆☆☆☆☆☆

Health
Fammability
Physical Haz.

HMIS	
H	1*
F	2
R	0
PPE†	
†Sec. 8	

Warning !

Combustible liquid, moderate fire hazard
May cause moderate eye and skin irritation
Long term, prolonged or repeated skin contact may increase the risk of skin cancer
Harmful or fatal if swallowed – can enter lungs and cause damage
May be harmful if absorbed through skin

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ **Potential Health Effects** ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Primary Entry Routes: Inhalation, Skin and/or Eye contact.
Target Organs: Skin, Nervous System
Carcinogenicity: IARC has classified diesel fuel as a group 2B carcinogen, sufficient evidence in animals, possibly carcinogenic to humans. Prolonged or repeated contact with this material can cause cancer. Contains Polynuclear aromatics, which has been designated as a carcinogen by IARC (group 1). Risk of cancer depends on duration and level of exposure. IARC has classified diesel engine exhaust as a group 2A carcinogen, sufficient evidence in animals, probably carcinogenic to humans.

Acute Effects

Inhalation: Irritation, dizziness, headaches, and nausea. Excessive breathing may cause central nervous system effects.
Eye: May cause irritation of the eye.
Skin: Excessive skin contact may cause irritation and dermatitis.
Ingestion: Do Not Induce Vomiting. Causes nausea, vomiting, and cramping; depression of central nervous system ranging from mild headache to anesthesia, coma, and death; pulmonary irritation secondary to exhalation of solvent; signs of kidney and liver damage may be delayed.
Aspiration into Lungs: Causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; later, signs of bronchopneumonia and pneumonitis; acute onset of central nervous system excitement followed by depression.

Chronic Effects

Prolonged or repeated contact with this material can cause cancer. IARC has classified diesel fuel as a group 2B carcinogen, sufficient evidence in animals, possibly carcinogenic to humans. Contains Polynuclear aromatics, which has been designated as a carcinogen by IARC (group 1). Risk of cancer depends on duration and level of exposure.

Section Ref. (3, 10)

Section 3 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% Vol
Diesel Fuel	68476-34-6	100
Including:		
Polynuclear Aromatic Compounds	----------	<0.10
Naphthalene	91-20-3	0–1.0
Ethyl benzene	100-41-4	<0.10
Xylenes	1330-20-7	<0.20
Toluene	108-88-3	<0.10
1,2,4 Trimethylbenzene	95-63-6	<0.10
Cumene	98-82-8	<0.10
Cyclohexane	110-82-7	<0.10

Section 4 - First Aid Measures

Inhalation: Move to fresh air. If breathing is irregular or has stopped, start resuscitation, and then administer oxygen if available. Seek medical attention.
Eye Contact: Flush with water for 15 minutes. Seek medical attention.
Skin Contact: Wash with soap and water. Remove any contaminated clothing, launder or dry-clean clothing before reuse.
Ingestion: Do not induce vomiting. Vomiting may cause aspiration into lungs. If spontaneous vomiting is about to occur, place victim's head below knees. Seek medical attention.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures

Flash Point: >140°F
Flash Point Method: PM
Autoignition Temperature: No Data
LEL: 0.9
UEL: 7.0
Flammability Classification: Combustible liquid

NFPA rating ®	
H	1
F	2
R	0

Extinguishing Media: Extinguish with dry chemical, CO2, foam and water fog. Solid streams of water may be ineffective. Cool affected containers and vessels with flooding quantities of water. Apply water from as great a distance as possible. Keep run off water out of sewers and water sources. Minimize breathing of gases, vapor, fumes, or decomposition products. Use self-contained breathing apparatus for enclosed or confined spaces or as otherwise needed.
Unusual Fire or Explosion Hazards: Do not store near strong oxidants or open flame.
Hazardous Combustion Products: Under fire conditions – May form toxic materials; carbon dioxide and monoxide, oxides of sulfur and H2S, and other decomposition products, in the case of incomplete combustion.
Fire-Fighting Instructions: Extinguish with dry chemical, CO2, foam and water fog. Solid streams of water may be ineffective. Cool affected containers and vessels with flooding quantities of water. Apply water from as great a distance as possible. Keep run off water out of sewers and water sources. Minimize breathing of gases, vapor, fumes, or decomposition products.
Special Fire-Fighting Procedures: Use self-contained breathing apparatus for enclosed or confined spaces or as otherwise needed. Cool exposed containers and vessels with water.

Section 6 - Accidental Release Measures

"FOR CHEMICAL EMERGENCY" Spill, Leak, Fire, Exposure or Accident
CALL CHEMTREC – Day or Night 800-424-9300
Spill /Leak Procedures: Shut off sources of ignition. Shut off leak, if possible without risk. Take up with sand or other non-combustible, absorbent material.

Small Spills: Take up with an absorbent material and place in containers, seal tightly for proper disposal.
Large Spills: Isolate the hazard area and restrict entry to unnecessary personnel. Shut off source of leak only if it can be done so safely or dike and contain the spill. Keep run off out of sewers and water sources. Wear appropriate respirator and protective clothing. If possible remove product with vacuum trucks. Soak up residue with sand or other suitable material, place in containers for proper disposal. Local, state and federal disposal regulations must be followed.
Regulatory Requirements: Report any spills that could reach any surface waters to the U.S. Coast Guard National Response Center (800) 424-8802.

Section 7 - Handling and Storage

Handling Precautions: Do not handle or store near heat, sparks, or flame.
Storage Requirements: Do not store near strong oxidants or open flames. Avoid water contamination.
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-initiated 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 gasoline or naphtha).
(3) Storage tank level floats must be effectively bonded. For more information on precautions to prevent static-initiated 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).

Section 8 - Exposure Controls / Personal Protection

Ingredient	OSHA PEL TWA	OSHA PEL STEL	ACGIH TLV TWA	ACGIH TLV STEL	NIOSH REL TWA	NIOSH REL STEL	NIOSH IDLH
Diesel Fuel			100 mg/m3		100 mg/m3		
Polynuclear aromatics	0.2 mg/m3		0.2 mg/m3		0.1 mg/m3		
Naphthalene	10 ppm		10 ppm	15 ppm	10 ppm	15 ppm	250 ppm
Ethyl benzene	100 ppm		100 ppm	125 ppm	100 ppm	125 ppm	800 ppm
Xylenes	100 ppm		100 ppm	150 ppm	100 ppm	150 ppm	900 ppm
Toluene	200 ppm	300 ppm	50 ppm		100 ppm	150 ppm	500 ppm
1,2,4 Trimethylbenzene	N. D.		25 ppm		25 ppm		N. D.
Cumene	50 ppm		50 ppm		50 ppm		900 ppm
Cyclohexane	300 ppm		300 ppm		300 ppm		1300 ppm

Engineering Controls
Ventilation: General mechanical with local exhaust; sufficient to maintain exposure levels below recommended TLV.
Protective Clothing/Equipment
Gloves: Use chemical resistant gloves to avoid prolonged or repeated skin contact.
Goggles: Chemical-type goggles or face shield.
Respiratory: Self-contained, positive-pressure breathing apparatus when used in confined or enclosed space or when exposure limits are exceeded. Organic vapor respirators can be used with good ventilation when organic vapors are less than 1000 ppm or ten (10) times permissible exposure limit, which ever is less.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Yellow-Green color with distinct hydrocarbon odor
Odor Threshold: No Data
Vapor Pressure: 0.19 psi @ 100°F
Vapor Density (Air=1): 4+
Formula Weight: No Data
Specific Gravity (H_2O=1, at 4 °C): 0.83 –0.86
pH: No Data

Water Solubility: Negligible
Other Solubilities: No Data
Boiling Point: 320°F -680°F
Viscosity: 2.6 cst @ 40°C
Refractive Index: No Data
Surface Tension: No Data
% Volatile: <2
Evaporation Rate: 0.02 (Butyl Acetate = 1)

Section 10 - Stability and Reactivity

Stability: Material is stable.
Polymerization: Will not occur.
Chemical Incompatibilities: Do not store near strong oxidants.
Conditions to Avoid: Do not store near open flames.
Hazardous Decomposition Products: Under fire conditions – May form toxic materials; carbon dioxide and monoxide, oxides of sulfur and nitrogen, H2S, and other decomposition products, in the case of incomplete combustion.

Section 11- Toxicological Information

Toxicity by ingestion: Grade 1; LD50 = 5–15 g/kg
Skin-Rabbit, adult 500 mg/24H Moderate irritation effects
Eye effects-Rabbit, adult 100 mg/30S Mild irritation effects
"Toxicology of Petroleum Hydrocarbons, Proceedings of the Symposium, 1st, 1982" MacFarland, H.N., et al., eds., Washington, DC, American Petroleum Institute, 198352MLA2 1,1,83
Skin-Mouse TDLo: 243 g/kg/97W-I: Carcinogenic effects
Fundamental and Applied Toxicology (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1981- FAATDF 9, 297, 87
Oral-Rat LD50:14,500 mg/kg
"Toxicology of Petroleum Hydrocarbons, Proceedings of the Symposium, 1st, 1982" MacFarland, H.N., et al., eds., Washington, DC, American Petroleum Institute, 198352MLA2 1,1,83

Diesel Exhaust:
Inhalation-Rat TCLo: 2200 mg/m3/16H/2Y-I: Neoplastic effects
Developments in Toxicology and Environmental Science. (Elsevier, Scientific Publishing Co., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1977-DTESD7 13, 471, 86
Inhalation-Rat TC: 8300 mg/m3/6H/86W-I: Equivocal tumorigenic agent
American Industrial Hygiene Association Journal. (AIHA, 475 Wolf Ledges Pkwy., Akron, OH 44311) V.19- 1958-AIHAAP 42, 382, 81
Inhalation-Rat TC: 7 mg/m3/7H/2Y-I: Equivocal tumorigenic agent
Annals of the American Conference of Governmental Industrial Hygienists. (American Conference of Governmental Industrial Hygienists, Inc., 6500 Glenway Ave., Bldg. D-5, Cincinnati, OH, 54211) V.1- 1981- ACGHD2 13,3,85

Section 12 - Ecological Information

Ecotoxicity: Dangerous to aquatic life in high concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes. May foul shoreline.
Aquatic toxicity: 204 mg/1/24 hr/juvenile American shad/TLm/salt water.
Waterfowl toxicity: 20 mg/kg LD50
Waterfowl toxicity: (mallard)
Biological oxygen demand: NA

Section 13 - Disposal Considerations

Disposal: Local, state and federal disposal regulations must be followed.

Container Cleaning and Disposal: "Empty" Container Warning: "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description information.

Transportation Information for Bulk Shipments:

DOT Shipping Name: Diesel Fuel
DOT Hazard Class: 3
DOT ID No.: UN 1202
DOT Packing Group: III
Hazard Label: Flammable Liquid

Section 15 - Regulatory Information

CERCLA Reportable Quantity (RQ) (40 CFR 302.4):

Compound	CAS Number	RQ
Toluene	108-88-3	1000
Xylenes (mixed isomers)	1330-20-7	100
Cyclohexane	110-82-7	1000
Ethylbenzene	100-41-4	1000
Trimethylbenzene	95-63-6	-----
Naphthalene	91-20-3	100
Cumene	98-82-8	5000

SARA 311/312 Codes (40 CFR 370 / 29 CFR 1910.1200):

Fire	Yes
Pressure	No
Reactivity	No
Immediate (acute)	Yes
Delayed (chronic)	Yes

SARA Toxic Chemical (40 CFR 372) Section 313:

Compound	CAS Number	Concentration %
Toluene	108-88-3	0-0.1
Xylenes (mixed isomers)	1330-20-7	0-0.2
Cyclohexane	110-82-7	0-0.1
Ethyl benzene	100-41-4	0-0.1
Trimethylbenzene	95-63-6	0-0.1
Naphthalene	91-20-3	0-1.0
Cumene	98-82-8	0-0.1

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): None

TSCA (40 CFR 710): All components of this product are listed on the TSCA Inventory.

State Regulations: The following chemicals are specifically listed by individual states, for details on each states regulatory requirements you should contact the appropriate agency in that state.

Compound	CAS Number	States
Toluene	108-88-3	CA, CA65, MA, NJ, TX, FL, IL, PA
Xylenes (mixed isomers)	1330-20-7	CA, MA, NY, NJ, TX, FL, IL, PA
Cyclohexane	110-82-7	CA, MA, NJ, TX, FL, IL, PA
Ethyl benzene	100-41-4	CA, MA, NJ, TX, FL, IL, PA
Trimethylbenzene	95-63-6	MA, TX, FL, PA
Naphthalene	91-20-3	CA, MA, NJ, TX, FL, IL, PA
Cumene	98-82-8	CA, MA, NJ, TX, FL, IL, PA

CA – CALIFORNIA STATE SUPERFUND HAZARDOUS SUBSTANCE
CA65 – CALIFORNIA PROPOSITION 65 CARCINOGENS OR REPRODUCTIVE TOXINS
MA – MASSACHUSETTS SUBSTANCE LIST
NY – NEW YORK HAZARDOUS SUBSTANCE BULK STORAGE LIST
NJ – NEW JERSEY RIGHT TO KNOW HAZARDOUS SUBSTANCE
TX – TEXAS AIR CONTAMINANTS WITH HEALTH EFFECTS SCREENING LEVEL
FL – FLORIDA TOXIC SUBSTANCE LIST
IL – TOXIC SUBSTANCE DISCLOSURE TO EMPLOYEES LIST
PA – PENNSYLVANIA HAZARDOUS SUBSTANCE LIST

SECTION 16 - Other Information

Prepared By: Tommy Rowland 4/13/2011
Revision Notes Moved Sections 2 and 3.

Hazardous Materials Information System (U.S.A.)

HMIS	
H	1
F	2
PH	0
PPE†	
†Sec. 8	

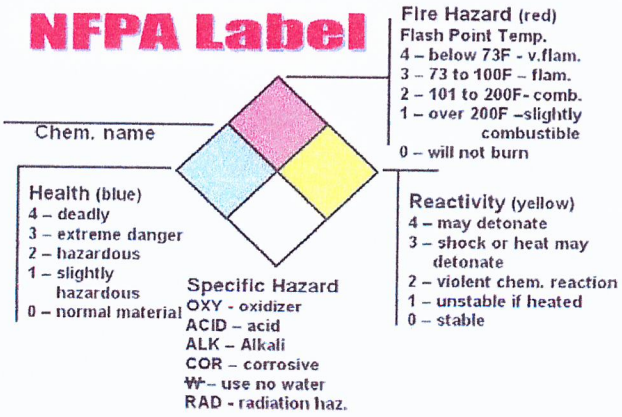
Hazard Ratings

H – Health
F – Fire Hazard
PH – Physical Hazard

4 – Extreme
3 – Serious
2 – Moderate
1 – Slight
0 – Minimal

*** Chronic Hazard** - Chronic (long-term) health effects may result from repeated over exposure.

National Fire Protection Association



Disclaimer: LION OIL COMPANY PROVIDES THIS INFORMATION FOR THE USER'S CONSIDERATION. LION OIL COMPANY BELIEVES THIS INFORMATION IS ACCURATE, BUT NOT ALL INCLUSIVE IN ALL CIRCUMSTANCES. USER SHOULD ENSURE THAT USER HAS CURRENT DATA RELEVANT FOR ITS PURPOSES. NO WARRANTY, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY, FITNESS OR OTHERWISE IS GIVEN.

Reference and research:

(1) The International Chemical Safety Card - http://www.cdc.gov/niosh/ipcs/icstart.html

(2) NIOSH Pocket Guide to Chemical Hazards - http://www.cdc.gov/niosh/npg/

(3) 2007 Guide to Occupational Exposure Values – Compiled by ACGIH

(4) 2008 Emergency Response Guidebook - http://hazmat.dot.gov/pubs/erg/unidnum.htm

(5) Sax's Dangerous Properties of Industrial Materials, 9th Edition; Edited by Richard J. Lewis, Sr.; Version 1.6; Copyright © 1997 by John Wiley & Sons, Inc.

(6) Touchstone Environmental, Inc.; Chemcheck Handbook (educational resource)

(7) Hawley's Condensed Chemical Dictionary, 13th Edition; Edited by Richard J. Lewis, Sr.; Version 1.1 Copyright© 1997 by John Wiley & Sons, Inc.

(8) Environmental Contaminant Reference Databook; VOLUMES I, II and III; by Jan. C. Prager; Version 2.0; Copyright © 1997 by John Wiley & Sons, Inc.

(9) Fire Protection Guide to Hazardous Materials, Twelfth Edition; National Fire Protection Association (NFPA 325) Guide to Hazardous Chemical Properties of Flammable Liquids, Gases, and Volatile Solids. 1994 edition.

(10) Hazardous Materials Handbook; Richard P. Pohanish and Stanley A. Greene, Version 1.3 Copyright© 1997 by Richard P. Pohanish and Stanley A. Greene