

Lion Oil Company

Product: UNLEADED GASOLINE + 10% ETHANOL

Revision No. 1



MSDS No. LO0003

Date of Preparation: 05/05/08

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Gasoline, Unleaded with 10% Ethanol

CAS Number: 8006-61-9

Synonyms: 87 Octane Regular + 10 % Ethanol, 89 Octane Mid Grade + 10 % Ethanol, 91 Octane Premium + 10% Ethanol, 92 Octane Premium + 10% Ethanol, 93 Octane Premium + 10% Ethanol, E10, Gasohol, Ethanol Blends

Description: Clear or light yellow colored liquid with characteristic 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 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% vol
Gasoline	8006-61-9	90
Ethanol (Ethyl Alcohol)	64-17-5	10
including:		
Benzene	71-43-2	<4.4
Toluene	108-88-3	4.5-13.5
Xylenes (mixed isomers)	1330-20-7	4.5-12.6
Cyclohexane	110-82-7	0-0.9
Ethylbenzene	100-41-4	0-2.7
n-Hexane	110-54-3	0-4.5
1,2,4-Trimethylbenzene	95-63-6	0-2.7
Naphthalene	91-20-3	0-0.9
Cumene	98-82-8	0-0.9

Section 3 - Hazards Identification

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DANGER!

Highly Volatile and Flammable Liquid

Keep Away From Ignition Sources.

Gasoline vapors are heavier than air.

Vapors may travel some distance to an ignition source and flash back.

CONTAINS BENZENE; Long-Term, repeated exposure to gasoline may cause Cancer, Blood, Kidney, Liver and Nervous System Damage

HARMFUL OR FATAL IF SWALLOWED – Can enter lungs and cause damage

May cause eye and skin irritation.

Use as a motor fuel only. Never use as a solvent.

HMIS III	
H	2
F	4
PH	0
PPE [†]	
†Sec. 8	

Health
Flammability
Physical Haz.

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: Danger, Flammable, eliminate all ignition sources. Equipment used in spill cleanup must be grounded to prevent sparking. Prevent entry into waterways, sewers, and confined areas.

Small Spills: Take up with an absorbent material and place in containers, seal tightly for proper disposal.

Large Spills: Isolate the hazard area at least 150 feet in all directions 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. Wear appropriate respirator and protective clothing. Water fog may be useful in suppressing vapor cloud contain run-off. Remove with vacuum trucks. Soak up residue with sand or other suitable material, place in containers for proper disposal. Flush with water and disposal of flushing solutions as above. Local, state and federal disposal regulations must be followed.

Regulatory Requirements: Recovered non-usable material is regulated by the US EPA as a hazardous waste due to its ignitibility characteristics (D001) and its benzene content (D018).

Section Ref. (4)

Section 7 - Handling and Storage

Handling Precautions: Do not get in eyes, on skin or on clothing. Do not breathe vapors, mists or fumes. Wear protective equipment described in section 8 if exposure conditions warrant. Use only with adequate ventilation.

Storage Requirements: Keep away from open flame, high temperatures, sparks, pilot lights, static electricity, open flames and other sources of ignition. Store in well ventilated area. Store in tightly closed containers. Bond and ground containers during transfer of gasoline.

Section 8 - Exposure Controls / Personal Protection

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Gasoline			300 ppm	500 ppm			
Ethanol	1000ppm		1000ppm		1000ppm		3300ppm 10% LEL
Benzene	1 ppm	5 ppm	0.5 ppm	2.5 ppm	0.1 ppm	1.0 ppm	500 ppm
Toluene	200 ppm	300 ppm	50 ppm		100 ppm	150 ppm	500 ppm
Xylenes (mixed isomers)	100 ppm		100 ppm	150 ppm	100 ppm	150 ppm	900 ppm
Cyclohexane	300 ppm		300 ppm		300 ppm		1300 ppm
Ethylbenzene	100 ppm		100 ppm	125 ppm	100 ppm	125 ppm	800 ppm
n-Hexane	500 ppm		50 ppm		50 ppm		1100 ppm
Trimethylbenzene	N. D.		25 ppm		25 ppm		N. D.
Naphthalene	10 ppm		10 ppm	15 ppm	10 ppm	15 ppm	250 ppm
Cumene	50 ppm		50 ppm		50 ppm		900 ppm

(TWA)-Time Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.

(STEL)-Short Term Exposure Limit is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless time limit is specified.

Engineering Controls

Ventilation: Local exhaust ventilation should be used. Provide explosion proof ventilation to meet TLV requirements in enclosed work areas.

Protective Clothing/Equipment

Contaminated Equipment: Launder or dry-clean contaminated clothing before reuse.

Gloves: Use chemical resistant gloves to prevent skin contact.

Goggles: Wear chemical goggles if eye contact is likely.

Respiratory: Use organic vapor cartridge respirators for exposures over TLV up to 1000 ppm. Use fresh air or self-contained breathing equipment for unknown or high concentrations.

Employees engaged in handling operations involving benzene must be provided with, and required to wear and use, a *half-mask* filter-type respirator for dusts, mists, and fumes. A respirator affording higher levels of protection than this respirator may be substituted.

Airborne Concentration or Condition of Use	Required Respirator
< or = 10 ppm (parts per million)	Half-mask air-purifying respirator with organic vapor cartridge.
< or = 50 ppm	(1) Full-facepiece respirator with organic vapor cartridges; or (2) Full-facepiece gas mask with chin-style canisters*.
< or = 100 ppm	Full-facepiece powered air-purifying respirator with organic vapor canister*.
< or = 1,000 ppm	Supplied-air respirator with full facepiece in positive-pressure mode.
> 1,000 ppm or unknown concentration	(1) Self-contained breathing apparatus with full facepiece in positive-pressure mode; or (2) Full-facepiece positive-pressure supplied-air respirator with auxiliary self-contained air supply.
Escape	(1) Any organic vapor gas mask; or (2) Any self-contained breathing apparatus with full facepiece.
Firefighting	Full-facepiece self-contained breathing apparatus in positive-pressure mode.
* Canisters must have a minimum service life of four (4) hours when tested at 150 ppm benzene, at a flow rate of 64 liters per minute (LPM), 25°C, and 85% relative humidity for non-powered air-purifying respirators. The flow rate shall be 115 LPM and 170 LPM, respectively, for tight-fitting and loose-fitting powered air-purifying respirators.	

Section Ref. (1, 2, 3)

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance and Odor: Clear and light yellow with characteristic light hydrocarbon odor.

Odor Threshold: No Data

Vapor Pressure: 8.5 – 15.0 psi @ 100 F

Vapor Density (Air=1): 3 - 4

Formula Weight: No Data

Specific Gravity (H₂O=1, at 4 °C): 0.70 – 0.77

pH: No Data

Water Solubility: Negligible

Other Solubilities: No Data

Boiling Point: 80 – 430° F

Freezing/Melting Point: NA

Viscosity: No Data

Refractive Index: No Data

Surface Tension: No Data

% Volatile: 100%

Evaporation Rate: >1 (Butyl Acetate = 1)

Section 10 - Stability and Reactivity

Stability: This Material is Stable.

Polymerization: Hazardous Polymerization will not occur.

Chemical Incompatibilities: Keep away from Oxidizing agents.

Conditions to Avoid: Keep away from open flame, high temperatures, and other sources of ignition.

Hazardous Decomposition Products: Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion

Section 11- Toxicological Information

Gasoline

Acute Oral Effects: LD₅₀ (rat) = 0.5 to 5 g/kgs

Eye effects-Man 500 ppm/1H Moderate irritation effects

Archives of Environmental Health. (Heldref Publications, 4000 Albemarle St., N.W., Washington, DC 20016) V.1- 1960-AEHLAU 1, 548, 60

Eye effects-Human 140 ppm/8H Mild irritation effects

Journal of Industrial Hygiene and Toxicology. (Baltimore, MD/New York, NY) V.18-31, 1936-49. For publisher information, see AEHLAUJIHTAB 25, 225, 43

Inhalation-Man TClO: 900 ppm/1H:Eye effects, Central nervous system effects, Pulmonary system effects

Journal of Industrial Hygiene and Toxicology. (Baltimore, MD/New York, NY) V.18-31, 1936-49. For publisher information, see AEHLAUJIHTAB 25, 225, 43

Parenteral-Man TDL₀: 53 mg/kg

Journal of Toxicology, Clinical Toxicology. (Marcel Dekker, POB 11305, Church St. Station, New York, NY 10249) V.19- 1982-JTCTDW 21, 409, 83/84

Inhalation-Rat LC50: 300 g/m³/5M

National Technical Information Service. (Springfield, VA 22161) (Formerly U.S. Clearinghouse for Scientific and Technical Information)NTIS** PB158-508

Inhalation-Mouse LC50: 300 g/m³/5M

National Technical Information Service. (Springfield, VA 22161) (Formerly U.S. Clearinghouse for Scientific and Technical Information)NTIS** PB158-508

Inhalation-Guinea Pig, adult LC50: 300 g/m³/5M

National Technical Information Service. (Springfield, VA 22161) (Formerly U.S. Clearinghouse for Scientific and Technical Information)NTIS** PB158-508

Inhalation-Mammal LCL₀: 30,000 ppm/5M

Naunyn-Schmiedeberg's Archiv fuer Experimentelle Pathologie und Pharmakologie. (Berlin, Germany) V.110-253, 1925-66. For publisher information, see NSAPCCAEPPEAE 138, 65, 28

Section Ref. (5, 10)

Section 12 - Ecological Information

Aquatic Toxicity: 90 ppm/24hr/juvenile American shad/TL_m/fresh water; 91 mg/l/24hr/juvenile American shad/TL_m/salt water.

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.

Fouling to shoreline.

May be dangerous if it enters water intakes.

Notify local health and wildlife officials.

Notify operators of nearby water intakes.

Section Ref. (10)

Section 13 - Disposal Considerations

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

Disposal Regulatory Requirements: Recovered non-usable material is regulated by the US EPA as a hazardous waste due to its ignitibility characteristics (D001) and its benzene content (D018).

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.

DOT Shipping Name: Gasoline

DOT Hazard Class: 3

DOT ID No.: UN1203

DOT Packing Group: II

Hazard Label: Flammable Liquid

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number: D001

RCRA Hazardous Waste Classification (40 CFR 261): D018

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

Compound	CAS Number	RQ
Benzene	71-43-2	10
Toluene	108-88-3	1000
Xylenes (mixed isomers)	1330-20-7	100
Cyclohexane	110-82-7	1000
Ethylbenzene	100-41-4	1000
Hexane	110-54-3	5000
1,2,4-Trimethylbenzene	95-63-6	NE
Naphthalene	91-20-3	100
Cumene	98-82-8	5000

NE- Not Established

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 %
Benzene	71-43-2	<4.4
Toluene	108-88-3	4.5-13.5
Xylenes (mixed isomers)	1330-20-7	4.5-12.6
Cyclohexane	110-82-7	0-0.9
Ethylbenzene	100-41-4	0-2.7
Hexane	110-54-3	0-4.5
1,2,4-Trimethylbenzene	95-63-6	0-2.7
Naphthalene	91-20-3	0-0.9
Cumene	98-82-8	0-0.9

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

TSCA (40 CFR 710): This product or its components are listed on the Toxic Substance Control Act (TSCA) Chemical Substance 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
Ethanol	64-71-5	CA, FL, TX, PA
Benzene	71-43-2	CA, CA65, FL, MA, NY, NJ, TX, IL, IL ₁ , PA
Toluene	108-88-3	CA, CA65, FL, MA, NY, NJ, TX, IL, IL ₁ , PA
Xylenes (mixed isomers)	1330-20-7	CA, FL, MA, NY, NJ, TX, IL ₁ , PA
Cyclohexane	110-82-7	CA, FL, MA, NY, NJ, TX, IL ₁ , PA
Ethylbenzene	100-41-4	CA, FL, MA, NY, NJ, TX, IL, PA
Hexane	110-54-3	CA, FL, MA, NY, NJ, TX, PA
Trimethylbenzene	95-63-6	MA, NJ, TX, PA
Naphthalene	91-20-3	CA, CA65, FL, MA, NY, NJ, TX, IL, IL ₁ , PA
Cumene	98-82-8	CA, FL, MA, NY, NJ, TX, , IL ₁ , PA

CA	-	CALIFORNIA DIRECTOR'S LIST OF HAZARDOUS SUBSTANCE
CA65	-	CALIFORNIA PROPOSITION 65 CARCINOGENS OR REPRODUCTIVE TOXINS
FL	-	FL TOXIC SUBSTANCES IN THE WORKPLACE
MA	-	MASSACHUSETTS "TOXIC CHEMICALS" 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
IL	-	ILLINOIS (WATER) PRIORITY POLLUTANTS
IL ₁	-	ILLINOIS HAZARDOUS WASTE
PA	-	PENNSYLVANIA HAZARDOUS SUBSTANCE LIST

Section Ref. (6)

SECTION 16 - Other Information

Prepared By: Tommy Rowland, 05/05/08

Revision Notes: new issue

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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) 2004 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