

# CONSOLIDATED ENERGY COMPANY LLC

910 MAIN STREET

Jesup, Iowa 50648

## MATERIAL SAFETY DATA SHEET

### 1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

TRADE NAME **ETHYL ALCOHOL (FUEL GRADE)**  
CAS NUMBER 64-17-5  
MSDS NUMBER 5393  
PRODUCT CODE 1501  
SYNONYM(S) ETHANOL

MANUFACTURE/  
SUPPLIERS  
Flint Hills Resources, LP P.O. Box 2917, Wichita, KS 67201  
Frontier Oil and Refining Company, 4610 S. Ulster, Suite 200; Denver  
CO. 80237  
Cenex, A division of CHS Cooperatives, P.O. Box 64089, Mail Station  
525, St Paul, MN 55164  
Citgo Petroleum Corporation, P.O. Box 3758. Tulsa, OK 74102  
Exxomobile Oil Corp., 3225 Gallows Road, Fairfax VA. 22037  
Gary-Williams Energy Corp., 1207 Sovereign Row. OKC, OK 73108  
Lion Oil Co., 1000 McHenry St., ElDorado, AK 71730  
Marathon Ashland Petroleum LLC., 539 South Main St., Findlay, OH 45840  
Conoco/Phillips, Bartlesville, OK 74004  
Valero Marketing and Supply Co., P.O. Box 500, San Antonio, TX 78292  
F.C. Stone Trading, 10330 NW Prairieview RD., Kansas City, MO 64153  
SRP, 8101 E. Prentice Ave., Suite 704, Greenwood Village, CO 80111  
Western Petroleum Company, 9531 West 78<sup>th</sup> St., Eden Prairie, MN 55344  
TransMontaigne Product Services, Inc, 370 S17th Street, Suite 2750, Denver, Co.  
80202  
Premcor Refining Group Inc., 8182 Maryland Ave. Clayton, MO 63105  
Center Marketing Company, 600 Mason Ridge Center Drive, St. Louis, Mo. 63141  
Apex Oil Co., 8235 Forsyth, 4<sup>th</sup> Floor, St Louis, Mo 63105

### TELEPHONE NUMBERS-24 HOUR EMERGENCY ASSISTANCE

Chemtrec 800-633-8253  
Consolidated Energy Company 800-399-1562

### 2 COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>CAS Number</u>	<u>Concentration*</u>	<u>Exposure limits/Health Hazards</u>
ETHYL ALCOHOL	64-17-5	92.1-97%	1000 ppm 8-Hour TWA ((OSHA) 1000 ppm 8-Hour TWA(ACGIH)
NATURAL GASOLINE	68425-31-0	1-5%	ND
T-BUTYL ALCOHOL	75-65-0	1-4%	100- ppm. 8-Hour TWA (OSHA) 100- ppm 8-Hour TWA (ACGIH)
BENZNE	71-43-2	<1400 PPM	1 - ppm 8-Hour TWA (OSHA) 5 - ppm 15-Min STEL (OSHA) 0.5 - ppm 8-Hour TWA (ACGIH) 2.5 - ppm15-Min STEL (ACGIH)

\*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

### **COMPOSITION COMMENTS**

This Material Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specific information. For product specific information, contact your Pawnee Petroleum Products representative.

## **3 HAZARDS IDENTIFICATION**

### **EMERGENCY OVERVIEW**

**WARNING!**

#### **HEATH HAZARDS**

**MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT**

**MAY BE HARMFUL OR FATAL IF SWALLOWED OR INHALED**

**OVEREXPOSURE MAY CAUSE CNS DEPRESSION**

**ASPIRATION HAZARD IF SWALLOWED-CAN ENTER LUNGS AND CAUSE DAMAGE**

**POTENTIAL CANCER HAZARD**

**POTENTIAL REPRODUCTIVE HAZARD**

**DANGER-CONTAINS BENZENE-CANCER HAZARD**

**SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION**

#### **FLAMMABILITY HAZARDS**

**EXTREMELY FLAMMABLE**

**FORMS EXPLOSIVE MIXTURES WITH AIR**

**MAY CAUSE FLASH FIRE, SEE SECTION 5**

#### **REACTIVITY HAZARDS**

**STABLE**

### **POTENTIAL HEALTH EFFECTS, SKIN**

**MODERATELY IRRITATING.** Contacts may cause reddening, itching and inflammation. Repeated or prolonged contact may result in drying, reddening, itching, pain, inflammation, cracking and possible secondary infection with tissue damage. Defatting agent.

Absorption from prolonged or repeated skin contact may cause systemic toxicity.

### **POTENTIAL HEALTH EFFECTS, EYE**

**MODERATELY IRRITATING.** Exposure to vapors fumes or mists may cause irritation. Direct contact may Cause pain, tears, burns, sensitivity to light, swelling and possible corneal damage.

### **POTENTIAL HEALTH EFFECTS, INHALATION**

**SLIGHTLY TOXIC.** Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure.

Repeated or prolonged exposure may cause behavioral changes.

May cause cardiac sensitization, including arrhythmia (irregular hart beat) and death due to cardiac arrest.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

#### **POTENTIAL HEALTH EFFECTS, INGESTION**

**SLIGHTLY TOXIC.** May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

May cause central nervous system depression of effects. Symptoms may include headache, excitation, euphoria, dizziness, drowsiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the amount swallowed.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

## **4 FIRST AID MEASURES**

### **SKIN**

Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

### **EYE**

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

### **INHALATION**

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen.

Keep affected person warm and at rest. **GET IMMEDIATE MEDICAL ATTENTION**

### **INGESTION**

Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Gastric lavage should be preformed only by qualified medical personnel.

Keep affected person warm and at rest. **GET IMMEDIATE MEDICAL ATTENTION.**

### **NOTES TO PHYSICAN**

Gastric lavage may be indicated if ingested. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

In cases of acute poisoning, artificial respiration with administration of oxygen is useful for support. **DO NOT GIVE EPINEPHRINE, EPHEDRINE, OR SIMILAR ADRENERGIC DRUGS. THEY MAY INDUCE FATAL VENTRICULAR FIBILLATION.** Electrocardiographic monitoring should be carried out with severely ill patients to anticipate possible cardiac arrest.

Anemia may require the usual supportive measures. Medical evaluation of acute overexposure should include hematological determinations until stable. In severe acute and chronic poisoning, both renal and hepatic damage may occur and should be anticipated in such cases. Respiratory and pulmonary problems may require special attention. After sever acute symptoms have been alleviated, it may be advisable to consider periodic monitoring of the patient until such time as the likelihood of the other adverse effects can be discounted.

**INHALATION ABUSE:** Gasoline in the one of the solvents used by chemical substance abusers. These patients may present acute or chronic CNS signs or symptoms as well as arrhythmias.

## **5 FIRE FIGHTING MEASURES**

### **HAZARDOUS COMBUSTION PRODUCTS**

Combustion may produce CO<sub>x</sub>, NO<sub>x</sub>, SO<sub>x</sub>, reactive hydrocarbons, and irritating vapors

### **EXTINGUISHING MEDIA**

Use water spray, dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.

### **BASIC FIRE FIGHTING PROCEDURES**

Shut off source if possible

Evacuate area and fight fire from safe distance.

If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop leak.

Use water to cool adjacent structures and to protect personnel. Shut off source flow if possible. Stay away from storage tank ends.

Containers can build up pressure if exposed to heat (fire). Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Be aware that a BLEVE (Boiling Liquid Expanding Vapor Explosion) may occur unless surfaces are kept cool with water.

Firefighters must wear MSHA/NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

### **UNUSUAL FIRE & EXPLOSIN HAZARDS**

Extremely flammable. Vapors from flammable or explosive mixtures with air at room temperature. Vapor or gas may spread to distant ignition sources and flash back.

Explosion hazard if exposed to extreme heat or to physical or thermal shock.

Fires involving this product may release CO<sub>x</sub>, NO<sub>x</sub>, SO<sub>x</sub>, reactive hydrocarbons and irritating vapors.

Flash Point -5.8 \*F (-21 \*C) TAG OPEN CUP

Autoignition Temperature	810 *F (432 *C)
Flammability Limits in Air, Lower, % by Volume	3.3%
Flammability Limits in Air, Upper, % by Volume	19.5%

## **6 ACCIDENTAL RELEASE MEASURES**

### **EMERGENCY ACTION**

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary. People away; isolate hazard area and deny entry. Stay upwind. Isolate for ½ mile in all directions if tank, railcar or tank truck is involved in fire. Evacuate area endangered by release as required. (See Exposure Control/Personal Protection – Section 8).

### **ENVIRONMENTAL PRECAUTIONS**

Eliminate all sources of ignition. Isolate hazard areas and deny entry.

If material is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local authorities and the National Response Center, if required.

### **SPILL OR LEAK PROCEDURE**

Keep unnecessary people away. Isolate area for at least 25-50 meters (80-160 feet) to preserve public Safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet).

Keep ignition sources out of the area and shut off all ignition sources. Absorb spill with inert material (e.g. dry sand, or earth) then place in chemical waste container. Large spills: Dike far ahead of liquid spill for later disposal. Stop leak when safe to do so.

Use vapor suppressing foam to reduce vapors. Stop leak when safe to do so.

See Exposure Control/Personal Protection (Section 8).

## **7 HANDLING AND STORAGE**

### **HANDLING**

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. DO not cut, grind, drill, weld, or reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink, or smoke in areas of use or storage.

### **STORAGE**

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers.

Empty containers may contain product residue. Do not reuse without adequate precautions.

## **8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

### **ENGINEERING CONTROLS**

Ventilation and other forms of engineering controls are the preferred means of controlling exposures.

### **EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)**

Wear chemical safety goggles and face shield. Have eye wash facilities readily available where eye contact can occur.

### **SKIN PROTECTION: PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling.

Use good personal hygiene.

### **RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)**

A NIOSH approve air purifying respirator with an appropriate cartridge or canister may be appropriate under circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

## **9 PHYSICAL & CHEMICAL PROPERTIES**

### **ODOR AND APPEARANCE**

CLEAR, COLORLESS TO LIGHT COLORED LIQUID WITH AROMATIC ODOR

Boiling Point	172.2 *F (77.9 *C)
Specific Gravity	0.8118 AT 68.0 *F (20.0 *C)
Melting Point	ND
Percent Volatile	100%
Vapor Pressure	47 mm Hg AT 68.0 *F (20.0 *C)
Vapor Density	1.6 AT 172.4 *F (78.0 *C)
Bulk Density	ND
Solubility in Water	100 %
Octanol/Water Partn	ND
Volatile Organic	ND
Pour Point	ND
pH Value	ND
Freezing Point	-173 *F (-114 *C)
Viscosity	0.0141 poise 68.0 *F (20.2 *C)
Evaporation Rate	3.3 (Butyl Acetate =1)
Molecular Formula	C2H5OH
Molecular Weight	46.0700
Chemical Family	ALCOHOL
Odor Threshold	ND

## **10 STABILITY & REACTIVITY**

### **STABILITY/INCOMPABILITY**

Incompatible with oxidizing agents. See precautions under handling & Storage (Section 7).

### **HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS**

Combustion may produce COx, NOx, SOx, reactive hydrocarbons, and irritating vapors.

## 11 TOXICOLOGICAL INFORMATION

### ROUTES OF EXPOSURE

Inhalation, ingestion, skin and eye contact

### TOXICOLOGICAL DATA

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: liver, kidney, spleen, pancreas, pituitary, thyroid, adrenals, thymus, cardiovascular, respiratory and nervous system.

Exposure to components of this material may cause the following specific symptoms, depending on the Concentration and duration of exposure: anemia.

Repeated ingestion of ethanol can result in alcohol abuse, causing behavioral changes, memory loss, impaired judgment, decreased appetite, irregular heartbeats and decreased fertility. Prolonged and repeated ingestion of ethanol has been associated with cancers of the mouth, pharynx, esophagus, and liver. Ethanol ingestion by pregnant women can cause miscarriage, low birth weight, premature birth and fetal alcohol syndrome. In males, acute and chronic alcohol ingestion may affect gonadal hormone levels. It may also affect the liver, kidney, brain, blood and cardiovascular system.

This material contains tert-butyl alcohol. Chronic exposure to tert-butyl alcohol (TBA) by the oral route produced some evidence of cancer in male rats, and female mice, equivocal evidence in male mice and no evidence in female rats. Overexposure may also effect the central nervous system, heart, liver, kidney, and urinary bladder. Exposure by both inhalation and oral routes to experimental animals has produced some evidence of reproductive and fetal effects (in some cases with maternal toxicity).

This material may contain benzene. Acute benzene poisoning causes central nervous system depression. Chronic exposure affects the hematopoietic system causing blood disorders including anemia and pancytopenia.

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometime referred to as solvent or painter's syndrome). Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.

**WARNING:** The use of any hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products and inadequate oxygen levels.

### CARCINOGENICITY

IARC has determined that there is inadequate evidence for the carcinogenicity of the ethanol in experimental animals. (IARC Class 2B)

IARC has determined tht there is sufficient evidence for the carcinogenicity of alcohol beverages in humans. (IARC Class 1)

This material contains natural gasoline. Wholly vaporized unleaded gasoline produced an increased incidence of liver cancers in female mice and kidney cancers in male rats following a two year inhalation period. Subsequent investigations indicate that the kidney damage, linked to kidney cancer, may be specific to the male rat. IARC had determined that these is limited evidence for the carcinogenicity of the unleaded gasoline in experimental animals and inadequate evidence in humans. (IARC Class 2B). Solvent extracts of gasoline exhaust particles produced skin cancer in laboratory animals leading IARC to categorize gasoline engine exhaust as a possible human cancer hazard.

This material may contain benzene. Benzene is carcinogenic to laboratory animals when given by intubation or by inhalation. There is an association between occupational exposure to benzene and human leukemia.

Carcinogenic determinations: IARC human positive and animal suspected carcinogen; NTP known carcinogen; ACGIH suspected carcinogen; OSHA carcinogen. (IARC Class 1)

### **TERATOGENICITY, MUTAGENICITY, OTHER REPRODUCTIVE EFFECTS**

Ingestion of alcoholic beverages by pregnant women is associated with fetal alcohol syndrome in offspring..

This material may contain benzene. Mutagenic and classrogenic in mammalian and non-mammalian test systems. Reproductive or developmental toxicant only at doses that are maternally toxic, based on tests with animals.

### **PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE**

Pre-existing medical conditions which may be aggravated by exposure include disorders of the kidney, liver, skin, blood, respiratory and cardiovascular systems.

## **12 ECOLOGICAL INFORMATION**

ND

## **13 DISPOSAL CONSIDERATIONS**

### **WASTE DISPOSAL**

This material, as supplied, when discarded or disposed of, is a hazardous waste according to Federal regulations (40CFR 261) due to its ignitability and benzene content. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268, and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make waste management information presented in this MSDA incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

## **14 TRANSPORT INFORMATION**

### **BILL OF LADING – BULK (U.S. DOT)**

Alcohols, n.o.s. (Ethanol, Gasoline) 3, UN1987, PG III

### **BILL OF LADING – NON-BULK (U.S. DOT)**

Alcohols, n.o.s. (Ethanol, Gasoline) 3, UN1987, PG III

#### **U.S. Department of Transportation (DOT) Requirements**

##### **General Transportation Information for Bulk Shipments**

Proper Shipping Name	Alcohols, n.o.s. (Ethanol, Gasoline)		
Hazard Class	3	UN/NA Code	UN 1987
Packaging Group	PG III		
Labels Required	Flammable Liquid		
Placards Required	Flammable Liquid, UN 1987		
Reportable Quantity	See Regulatory Information (Section 15)		

##### **General Transportation Information for Non-Bulk Shipments**

Proper Shipping Name	Alcohols, n.o.s. (Ethanol, Gasoline)		
Hazard Class	3	UN/NA Code	UN1987
Packaging Group	PG III		

Labels Required  
Placards Required  
Reportable Quantity

Flammable Liquid  
Flammable Liquid, UN 1987  
See Regulatory Information (Section 15)

#### COMMENTS

The above description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information.

## 15 REGULATORY INFORMATION

### FEDERAL REGULATIONS

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

Consult OSHA's Benzene standard 29 CFR 1910.1028 for provisions on air monitoring, employee training, medical monitoring, etc.

This material, as supplied, contains benzene, a Hazardous Substance as per 40 CFR Part 302.4. The reportable quantity for benzene is 10 pound(s). Any release of this material that results in a release of benzene equal to or exceeding the reportable quantity must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in the 40 CFR Part 302.6 and 40 CFR 355.40, respectively. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

This material contains one or more components designated as hazardous substances to toxic pollutants pursuant to the Federal Clean Water Act (40 CFR 116.4 Table A; 40 CFR 401.15). Any unpermitted introduction material into a facility stormwater or wastewater discharge may constitute a violation of the Clean Water Act. Facilities must notify the appropriate the permitting agency prior to introducing this material into the aforementioned discharges.

This material contains one or more substances listed as hazardous, toxic, or flammable air pollutants under Section 112 of the Clear Air Act.

There may be specific regulations at the local, regional or state/provincial level that pertain to this material.

### STATE REGULATIONS

#### SARA TITLE III RATINGS

Immediate Hazard:	X	Delayed Hazard:	X	Fire hazard:	X	Pressure Hazard:	-
Reactivity Hazard	-						

#### NFPA RATINGS

Health	0	Flammability	3	Reactivity	0	Special Hazards	
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#### HMIS RATINGS

Health	1*	Flammability	3	Reactivity	0
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#### Following ingredients of this product are listed in SARA313

SARA Listed Ingredient Name	CAS Number	Maximum %
T-Butyl ALCOHOL	75-65-0	4.0
BENZENE	71-43-2	0.1

## 16 OTHER INFORMATION

### DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of the preparation of this Material Safety Data Sheet. However, an MSDS may not be used as a commercial specification sheet of manufacture or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.