

BUNGE-ERGON VICKSBURG, LLC

Fuel Ethanol

MSDS No. BEV03

Date of Preparation: **April 6, 2009**

Revision No. 3

Section 1 – Chemical Product and Company Information

Product/Chemical Name:	Fuel Ethanol, Denatured
Chemical Formula:	C ₂ H ₅ OH
CAS Number:	Mixture
Other Designations:	Denatured Ethanol, Ethyl Alcohol-Denatured, Fuel-Grade Alcohol
General Use:	Motor vehicle fuel
Manufacturer:	Bunge-Ergon Vicksburg, LLC, 1833 Haining Road, Vicksburg, Mississippi 39183, (601) 636-1976; Hours of Operation 8:00 am – 5:00 pm; ERGON 24 Hour Emergency Phone Number 1-800-222-7122; CHEMTREC 1-800-424-9300.

Section 2 – Composition / Information on Ingredients

Ingredient Name	CAS Number	% Vol
Ethanol (ethyl alcohol)	0064-17-5	95-98
Gasoline	8030-30-8	2-5
Benzene	0071-43-2	<0.1

INGREDIENT	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Ethanol (ethyl alcohol)	1000 ppm	None estab.	1000 ppm	None estab.	1000 ppm	None estab.	3300 ppm
Gasoline	None estab.	None estab.	300 ppm	500 ppm	None estab.	None estab.	None estab.
Benzene	1 ppm	5 ppm	0.5 ppm	2.5 ppm	0.1 ppm	1 ppm	500 ppm

Section 3 – Hazards Information

EMERGENCY OVERVIEW

HMIS H-1 F-3 R-1 PPE* * Sec.8

POTENTIAL HEALTH EFFECTS

Primary Entry Routes: Inhalation, ingestion, and absorption.
Target Organs: Skin, Eye, Lung, Liver, Kidney, Nervous system.
Acute Effects:

When inhaled or absorbed in harmful quantities, may produce central nervous system depression characterized by headaches, nausea, dizziness, loss of balance and coordination, and stupor. Vapors or spray mists may be irritating to nasal and respiratory tract. Product may be irritating to skin and eyes resulting in redness, itching or burning. Introduction of solvents, as in aspiration of vomitus fluid, may produce chemical pneumonia.

Carcinogenicity: Product components listed as a IARC, NTP, ACGIH, or OSHA carcinogen:

- Benzene, CAS# 0071-43-2
 - ACGIH: A1 - Confirmed Human Carcinogen
 - California: carcinogen, initial date 2/27/87
 - NTP: Known carcinogen
 - IARC: Group 1 carcinogen

Medical Conditions Aggravated by Long-Term Exposure: Repeated exposure to ethanol may aggravate liver injury produced from other causes.

Chronic Effects: Dermal contact, especially if prolonged or repeated, may cause redness, itching, or blistering of the skin.

Section 4 – First Aid Measures

Inhalation: Leave area to breathe fresh air. Avoid further overexposure. If breathing has stopped, give artificial respiration. If symptoms persist, get medical attention.

Eye Contact: Flush with water for at least 15 minutes while holding eye lids apart. Get medical attention immediately.

Section 4 continued on next page....

Section 4 – First Aid Measures - Continued

Skin Contact: Clean area of contact thoroughly using soap and water. If irritation, rash or other disorders develop, get medical attention immediately.

Ingestion: If swallowed, do not induce vomiting. Call nearest Poison Control Center or Physician immediately.

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

Special Precautions/Procedures: The concentrations of volatile compounds in this product require that the precautions outlined in this MSDS be followed to minimize personnel exposure. Provide adequate ventilation to keep vapors below allowable exposure levels. Use PPE appropriate for the task.

Section 5 – Fire Fighting Measures

Flash Point: -5 °F (-20.5 °C)

Flash Point Method: Tag Open Cup

Auto ignition Temperature: >689 °F (365 °C)

LEL: 3.3

UEL: 19.0

Flammability Classification: Class III

Extinguishing Media: Dry chemical, "alcohol resistant" foam, carbon dioxide and water for small fires. Polar solvent foam or large quantities of water for large fires.

Unusual Fire or Explosion Hazards: Flammable liquid. Flame is invisible in daylight. Extremely flammable materials may release vapors that are heavier than air and travel long distance, ignite and flash back.

Hazardous Combustion Products: Combustion may produce carbon monoxide, carbon dioxide, aldehydes and ketones.

Fire-Fighting Instructions: Water is not effective until the alcohol contains approx. 80% water. Water may be ineffective on flames but may be used to cool fire-exposed container.

Fire-Fighting Equipment: Wear full firefighting protective clothing, including self-contained breathing apparatus (SCBA) in enclosed places.



Section 6 – Accidental Release Measures

Spill/Leak Procedures: Use appropriate protective equipment. Avoid contact with material. Remove sources of ignition immediately. Stop flow of material if safe to do so. Contain spill and keep out of sewers and waterways. Ventilate area.

Small Spills: Stop spill at source if possible. Isolate and confine by diking, or similar method. Remove discharged material.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: Mix with inert absorbent material such as soil, sand, or oil dry, to stabilize.

Regulatory Requirements: This product as produced is not specifically listed as an EPA RCRA hazardous waste according to federal regulations (40 CFR 261). However, when discarded or disposed of, it may meet the criteria of an "ignitable" hazardous waste (D001). This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Section 7 – Handling and Storage

Handling Precautions: Prevent inhalation of vapor, ingestion, and contact with skin eyes and clothing. Keep container closed when not in use. Precautions also apply to emptied containers. Do not smoke, weld, generate sparks, or use flame near container. Do not use in confined or poorly ventilated areas. Use explosion-proof electrical equipment and non-sparking tools. Ground and cross bond all containers when pouring or transferring.

Storage Requirements: Do not store at temperature above 120°F or in direct sunlight. Do not puncture or incinerate containers. Store away from heat, sparks and flame.

Section 8 – Exposure Controls / Personal Protection

Engineering Controls: Use only in well ventilated areas. Provide maximum ventilation in enclosed areas. Use local exhaust when the general ventilation is inadequate.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Respiratory Protection: NIOSH approved respirator for organic vapors if ventilation is not adequate. Air-supplied mask for high concentrations. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear a self-contained breathing apparatus (SCBA). *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes: procedures for selecting respirators; medical evaluation; fit testing; use in routine and emergency situations; cleaning, disinfecting, storing, inspecting, repairing, discarding and maintaining respirators; adequate air quality, quantity and flow; training in respiratory hazards; training in use of respirators; evaluation of effectiveness of respiratory program.

Protective Clothing/Equipment: Use suitable impervious nitrile or neoprene gloves and protective apparel to reduce exposure. Wear appropriate eye protection (chemical safety goggles and/or face shield) to prevent eye contact per OSHA eye- and face-protection regulations (29 CFR 1910.133). Do not wear contact lenses. Do not touch eyes with contaminated body parts or materials. Prevent contact with shoes and clothing.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, or smoking.

Section 9 – Physical and Chemical Properties

Physical State: Liquid

Appearance and Odor: Clear, colorless liquid; characteristic odor

Odor Threshold:

Vapor Pressure (mm Hg.) at 20°C: 96

Vapor Density (Air = 1) at 78°C: 1.6

Reid Vapor Pressure, psi, 38°C: 3.5

Density: Est. 6.58 lb/gal

Specific Gravity (H₂O = 1, at 60 °F): 0.79

pH: No data.

Water Solubility: Completely miscible

Other Solubilities: No data.

Boiling Point: 165-175 °F (74-79 °C)

Freezing/Melting Point: No data.

Viscosity: No data.

Refractive Index: No data.

Surface Tension: No data.

% Volatile: 100%

Evaporation Rate (Butyl Acetate = 1): 3.2

Section 10 – Stability and Reactivity

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization will not occur under normal conditions.

Chemical Incompatibilities: May react vigorously with heat, oxidizing materials, such as nitrates, peroxides and acids.

Conditions to Avoid: High heat, sparks, open flames, excessive storage temperatures and/or open containers.

Hazardous Decomposition Combustion may produce carbon monoxide, carbon dioxide, aldehydes and ketones.

Section 11 – Toxicological Information

Eye Effects (ethanol):

Draize test, rabbit, eye: 500 mg Severe

Draize test, rabbit, eye: 500 mg/24H Mild

Draize test, rabbit, skin: 20 mg/24H Moderate

Acute Inhalation Effects (ethanol): LC₅₀ /4h – 31,623 ppm, rat

Skin Effects: May result in skin sensitivity, such as irritation, rashes, and dermatitis.

Acute Oral Effects (ethanol) :

LD₅₀ – 3,450 mg/kg, mouse

LD₅₀ – 6300 mg/kg, rabbit

Carcinogenicity: Benzene listed by ACGIH, IARC, NTP, and CA Prop 65 (see Section 3)

Mutagenicity (ethanol): DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

Teratogenicity (ethanol): Oral, Human - woman: TDLo = 41 gm/kg (female 41 weeks after conception). Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Chronic Effects: Dermal contact, especially if prolonged or repeated, may cause redness, itching, or blistering of the skin.

Epidemiology: Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".

Section 12 – Ecological Information

Ecotoxicity (ethanol):

Fish: Rainbow trout: LC₅₀ = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C.

Fish: Rainbow trout: LC₅₀ = 11200 mg/L; 24 Hr; Fingerling (Unspecified)

Bacteria: Phytobacterium phosphoreum: EC₅₀ = 34900 mg/L; 5-30 min; Microtox test.

When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

Environmental Fate:

Environmental Transport: When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

Environmental Degradation: No data.

Soil Absorption/Mobility: No data.

Section 13 – Disposal Considerations		
<p>Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.</p> <p>Disposal Regulatory Requirements: Subject to hazardous waste treatment, storage, and disposal requirements under RCRA. Follow Federal, state, and local regulations for disposal of solid waste.</p> <p>Container Cleaning and Disposal: Recommend using a non-hazardous solvent to remove the product. Follow Federal, state, and local regulations for disposal of the waste material, regardless of its waste classification.</p>		
Section 14 – Transport Information		
<p>Shipping Name: Alcohol n.o.s. (Ethanol, gasoline), Flammable Liquid</p> <p>Shipping Symbols: NA</p> <p>Hazard Class: 3</p> <p>ID No.: UN1987</p> <p>Packing Group: II</p> <p>Label: 3</p> <p>Special Provisions (172.102): 172, IB2, T7, TP1, TP8, TP28</p>	<p>Packaging Authorizations:</p> <p>a) Exceptions: 173.150</p> <p>b) Non-bulk Packaging: 173.202</p> <p>c) Bulk Packaging: 173.242</p>	<p>Quantity Limitations:</p> <p>a) Passenger, Aircraft, or Railcar: 5 L</p> <p>b) Cargo Aircraft Only: 60 L</p> <p>Vessel Stowage Requirements:</p> <p>a) Vessel Stowage: B</p> <p>b) Other: NA</p>
Section 15 – Regulatory Information		
<p>EPA Regulations:</p> <p>RCRA</p> <p>RCRA Hazardous Waste Numbers: Not listed</p> <p>RCRA Hazardous Waste Classification (40 CFR 261): D001 (Characteristic of ignitability): Reportable Quantity = 100 lbs. This classification applies only to the material as it was originally produced.</p>		
<p>Federal Regulatory Information:</p> <p>CERCLA: Benzene</p> <p>CERCLA Reportable Quantity (RQ): This product contains benzene (0071-43-2): 10 lb final RQ (receives an adjustable RQ of 10 lbs based on potential carcinogen). If spilled into waters of the U.S., it may be reportable under the Clean Water Act.</p> <p>TSCA</p> <p>Benzene (0071-43-2) and gasoline (8006-61-9) are listed on the TSCA inventory.</p> <p>SARA</p> <p>SARA 313 Components: This material contains Benzene (71-43-2), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.</p> <p>SARA Toxic Chemical: Not listed.</p> <p>SARA 311/312 Hazards: Acute Health Hazard Chronic Health Hazard Fire Hazard</p> <p>SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed.</p> <p>Clean Air Act:</p> <p>Benzene (71-43-2) is listed as a hazardous air pollutant (HAP).</p> <p>OSHA Regulations</p> <p>Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): See Table in Section 2.</p> <p>OSHA Specifically Regulated Substance: No</p> <p>State Regulations: Benzene (0071-43-2) can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts. Contains chemicals known to the State of California to cause cancer, birth defects and/or other reproductive harm: Benzene (0071-43-2). Gasoline (8006-61-9) can be found on the New Jersey right to know list.</p>		

Section 16 – Other Information

Revision Notes:

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