



MATERIAL SAFETY DATA SHEET

Ethanol, for Gasoline Blending

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ethanol, for Gasoline Blending

Product Code: Multiple

Synonyms: Conoco - MSDS#MISC0032
200 Proof Fuel Ethanol
Denatured Anhydrous Ethanol
Denatured Fuel Ethanol
Ethanol for Fuel Blending
Ethanol for Gasoline
Ethanol, Denatured
Ethyl Alcohol, Denatured

Intended Use: Gasoline Blendstock

Responsible Party: ConocoPhillips
P.O. Box 2197
Houston, TX
77252

For Additional MSDSs 800-762-0942

Technical Information: 918-661-1672

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident

California Poison Control System: (800) 356-3129

Call CHEMTREC

North America: (800)424-9300

Others: (703)527-3887 (collect)

Health Hazards/Precautionary Measures: A component may be harmful or fatal if swallowed. Possible cancer hazard based on animal data. Vapor harmful. Causes eye and skin irritation. A component is a birth defect hazard. Use ventilation adequate to keep exposure below recommended limits, if any. Avoid exposure during pregnancy. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Extremely flammable liquid and vapor. Vapor can cause flash fire. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Colorless

Physical form: Liquid

Odor: Gasoline or Alcohol

NFPA Hazard Class:

Health: 2 (Moderate)

Flammability: 3 (High)

Reactivity: 0 (Least)

HMIS Hazard Class

Health: 2* (Moderate)

Flammability: 3 (High)

Physical Hazard: 0 (Least)

*Indicates possible chronic health effects.

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>HAZARDOUS COMPONENTS</u>	<u>% VOLUME</u>	<u>EXPOSURE GUIDELINE</u>		
		<u>Limits</u>	<u>Agency</u>	<u>Type</u>
Ethanol CAS# 64-17-5	95-98	1000 ppm 1000 ppm	ACGIH OSHA	TWA TWA
Gasoline CAS# None	2-5	300 ppm 500 ppm	ACGIH ACGIH	TWA STEL
Benzene CAS# 71-43-2	0-0.2	0.5 ppm 2.5 ppm 1 ppm 5 ppm 500 ppm	ACGIH ACGIH OSHA OSHA NIOSH	TWA-SKIN STEL-SKIN TWA STEL IDLH

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

Contains benzene. If exposure concentrations exceed the 0.5 ppm action level, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028). Also see Section 4.

All components are listed on the TSCA inventory.

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Eye irritant. Contact may cause stinging, watering, redness, and swelling.

Skin: Skin irritant. Contact may cause redness, itching, burning, and skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): Low to moderate degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, vomiting, flushing, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue), blurred vision, drunkenness, stupor, tremors, respiratory failure, unconsciousness, convulsions and death.

Cancer: Known cancer hazard (see Sections 11 and 15).

Target Organs: Overexposure may cause injury to the central nervous system, stomach, liver, male reproductive system and heart (see Section 11).

Developmental: Potential hazard to the fetus (see Section 11).

Other Comments: Most adverse health effects associated with ethanol, a component of this material, are related to the chronic ingestion of alcoholic beverages. Alcoholism has been associated with liver, stomach, heart, and nervous system damage, cancer, adverse reproductive effects, and effects on the developing fetus. Many of these effects may be related to the profound metabolic changes that result from constantly high blood levels of alcohol. This exposure pattern is significantly different from that of persons handling industrial ethanol in the workplace or from refueling cars with gasoline containing ethanol.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders, respiratory (asthma-like) disorders and liver disorders.

4. FIRST AID MEASURES

Eye: Move victim away from exposure and into fresh air. If irritation or redness develops, flush eyes with clean water and seek medical attention. For direct contact, hold eyelids apart and flush the affected eye(s) with clean water for at least 15 minutes. Seek medical attention.

Skin: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): If swallowed, seek emergency medical attention. If victim is drowsy or unconscious and vomiting, place on the left side with the head down and do not give anything by mouth. If victim is conscious and alert and ingestion occurred within the last hour, vomiting should be induced for ingestions of large amounts (more than 5 ounces in an adult) preferably under direction from a physician or poison center. If possible, do not leave victim unattended and observe closely for adequacy of breathing.

Note To Physicians: Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammable Properties:

- Flash Point: -5°F/-21°C (TCC)
- OSHA Flammability Class: Flammable Liquid
- LEL%: 3.3 / UEL%: 19.0
- Autoignition Temperature: >689°F/>365°C

Unusual Fire & Explosion Hazards: This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or alcohol-resistant foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Use water sparingly to reduce disposal requirements. Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2). Cartridges have short service life at 10 times the TLV.

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, absorption, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance: Colorless

Physical State: Liquid

Odor: Gasoline or Alcohol

pH: Not applicable

Vapor Pressure (mm Hg): 45

Vapor Density (air=1): >1

Boiling Point/Range: 165-175°F / 74-79°C

Freezing/Melting Point: <-173°F / <-114°C

Solubility in Water: Miscible

Specific Gravity: 0.79

Percent Volatile: 100 vol.%

Evaporation Rate (nBuAc=1): 3.20

Viscosity: Not Determined

Bulk Density: 6.58 lbs/gal

Flash Point: -5°F / -21°C (TCC)

Flammable/Explosive Limits (%): LEL: 3.3 / UEL: 19.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon, nitrogen and sulfur oxides.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Ethanol (CAS# 64-17-5)

Carcinogenicity: Ingestion of alcoholic beverages has been classified by IARC as "carcinogenic to humans" (Group 1). Occupational exposures to ethanol and exposures other than by ingestion (i.e., dermal and inhalation) have not been associated with cancer in humans.

Target Organ(s): Chronic alcoholism has been associated with damage to the liver in humans (e.g., cirrhosis of the liver). Excessive consumption of alcoholic beverages has also been associated with adverse effects on the central nervous system, digestive system, cardiovascular system, and the reproductive system including reduced sperm count and motility and loss of libido in men, abnormal menstrual function, and decreased plasma estradiol and progesterone levels in women.

Developmental: Excessive consumption of alcoholic beverages during pregnancy has been associated with effects on the developing fetus referred to collectively as the fetal alcohol syndrome. The effects most frequently manifested include psychomotor dysfunction, growth retardation and a characteristic cluster of facial anomalies.

Mutagenicity: Excessive consumption of alcoholic beverages has been associated with chromosomal aberrations in white blood cells. Depending on the animal species being tested, ethanol may produce chromosomal damage, DNA damage and mutation in both somatic and germ cells.

Gasoline (CAS# None)

Carcinogenicity: Two year inhalation studies of wholly vaporized unleaded gasoline produced increased incidences of kidney tumors in male rats and liver tumors in female mice. Follow-up studies suggest that occurrence of the kidney tumors may be linked to alpha-2-u-globulin nephropathy, and most likely unique to the male rat. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma, or kidney cancer from gasoline exposure. Unleaded gasoline has been identified as a possible carcinogen by IARC.

Because solvent extracts of gasoline exhaust particulates caused skin cancer in laboratory animals, IARC has categorized gasoline engine exhaust as a possible human cancer hazard.

Target Organ(s): A two year inhalation study of wholly vaporized unleaded gasoline produced nephropathy in male rats, characterized by the accumulation of alpha-2-u-globulin in epithelial cells of the proximal tubules, and necrosis and hyperplasia of surrounding cells. Follow-up studies have demonstrated that these changes are unique to the male rat. Although prolonged exposure to n-hexane, a component of gasoline, has resulted in adverse male reproductive effects in experimental animal studies, no adverse male reproductive effects were found in studies conducted with gasoline.

Developmental: No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to up to 9,000 ppm vapor of unleaded gasoline via inhalation.

Benzene (CAS# 71-43-2)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the spilled or released material impacts soil, water, or other media, characteristic testing of the contaminated materials may be required prior to their disposal. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Ethanol,3,UN1170,II
Non-Bulk Package Marking: Ethanol, 3, UN1170
Non-Bulk Package Label: Flammable liquid
Bulk Package Placard/Marking: Flammable liquid/1170
Hazardous Substance/RQ * See Section 15 for RQ's
Packaging References 49 CFR 173.150, 173.202, 173.242
Emergency Response Guide: 127

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: Yes
Chronic Health: Yes
Fire Hazard: Yes
Pressure Hazard: No
Reactive Hazard: No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
Benzene	71-43-2	0-0.2

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant
Unleaded Gasoline (wholly vaporized)	Cancer

Carcinogen Identification:

Alcoholic beverages containing ethanol have been identified as a carcinogen by IARC.

EPA (CERCLA) Reportable Quantity:

RQ #1 Benzene
10 lb equal to 4278 lb, (650 gal), of this material.

Canada - Domestic Substances List: Listed

WHMIS Class:

B2-Flammable Liquid
D2B-Materials causing other toxic effects - Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Issue Date: 01/15/03
Previous Issue Date: 01/01/02
Product Code: Multiple
Revised Sections: 1, 2, 3, 5, 7, 8, 11, 13, 14, 16
Previous Product Code: Multiple
MSDS Number: 404070
Status: Final

Disclaimer of Expressed and Implied Warranties:

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