

**ATTACHMENT 29 – MATERIAL SAFETY DATA SHEET ADM FUEL ETHANOL**



# Ethanol

## MATERIAL SAFETY DATA SHEET

(Complies with 29 CFR 1910.1200)

**PRODUCT NAME:** FUEL ETHANOL  
**ADM PRODUCT CODE:** 017609  
**SYNONYMS:** Denatured Ethanol, Ethyl Alcohol – Denatured  
**CHEMICAL FORMULA:** C<sub>2</sub>H<sub>5</sub>OH

### SECTION I

**MANUFACTURER:** Archer Daniels Midland  
4666 Faries Parkway  
Decatur, IL 62526  
**EMERGENCY NUMBER:** (800) 424-9300 Chemtrec (USA)  
(217) 424-5200 ADM Corporate  
**INFORMATION:** (888) 371-4408 or (563) 244-5208  
**DATE:** July 27, 2009

### SECTION II Hazardous Ingredients/Identity Information

#### COMPONENTS:

	<u>CAS Number</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Volume</u>
Ethanol (Ethyl Alcohol) 200 proof	0064-17-5			95-98%
Natural Gasoline	8006-61-9			2-5%
*Benzene	0071-43-2	1 ppm	10 ppm	<0.1%

\*A chemical known to the State of California to cause cancer

### SECTION III – Physical/Chemical Characteristics

Boiling Point, °F	165-175
Reid Vapor Pressure, psi, 100°F	3.5
Vapor Density (Air = 1) at 172°F	1.6
Specific Gravity (H <sub>2</sub> O=1) at 60°F	0.79
Evaporation Rate (Butyl Acetate=1)	3.2
Solubility in Water	Completely miscible
Appearance and Odor	Clear, colorless liquid; characteristic odor

### SECTION IV – Fire and Explosion Hazard Data

Flash Point (Method Used):	Minus 5°F, Tag Open Cup
Auto ignition temperature:	>689°F
Flammable Limits (LEL):	3.3
Flammable Limits (UEL):	19.0
Extinguishing Media:	CO <sub>2</sub> , dry chemical or water for small fires; polar solvent foam for large fires.
Special Fire Fighting Procedures:	Water is not effective until the alcohol contains approx. 80% water.
Unusual Fire and Explosion Hazards:	Flammable liquid.

### SECTION V – Reactivity Data

Stability: Stable

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

Incompatibility (Materials to Avoid): Strong oxidizers

Hazardous Decomposition of By-products: Aldehydes, carbon monoxide.

Hazardous Polymerization: Will not occur

### SECTION VI – Health Hazard Data

Routes of Entry: Inhalation, skin, ingestion

Health Hazards (Acute and Chronic): Unconsciousness; coma; respiratory failure and death. removes natural oils and fats from skin. Moderately toxic (LD50 >5 gm/kg).

Carcinogenicity:

NTP: Not determined

IARC Monographs: Not determined

OSHA Regulated: Yes

Signs and Symptoms of Exposure: May cause dizziness, loss of balance and coordination

Medical Conditions Generally Aggravated by Exposure: Not determined

Emergency and First Aid Procedures: If swallowed, do not induce vomiting. If inhaled, remove person to fresh air. Give artificial respiration if breathing has stopped. Get immediate medical attention. If splashed in eyes or on skin, flush immediately with copious amount of water.

### SECTION VII – Precautions for Safe Handling and Use

Steps to be taken in Case Material is Released or Spilled: Eliminate all sources of ignition. Spills should be collected for disposal.

Waste Disposal Method: Do not allow to enter sewers where vapors may become ignited. Incinerate in a furnace where permitted under appropriate federal, state and local regulations.

Precautions to be taken in Handling and Storing: Keep away from heat, sparks and open flame. Keep container closed. Use with adequate ventilation.

Other Precautions: Use explosion proof electrical equipment and non-sparking tools. Ground electrical equipment.

### SECTION VIII – Control Measures

Respiratory Protection: Self-contained breathing air mask for high concentrations.

Ventilation: Local exhaust ventilation should be used; mechanical exhaust acceptable

Protective Gloves: Rubber

Eye Protection: Chemical splash goggles

Other Protective Clothing or Equipment: Eye bath, safety shower

Work/Hygienic Practices: Practice good housekeeping.

#### HMIS Hazard Rating Index

<b>1</b>	<b>HEALTH (Chronic effects)</b>
<b>3</b>	<b>FLAMMABILITY</b>
<b>0</b>	<b>REACTIVITY</b>
<b>H</b>	<b>PROTECTIVE EQUIPMENT</b>

#### NFPA D.O.T. Disposal

<b>1</b>	<b>HEALTH</b>
<b>3</b>	<b>FLAMMABILITY</b>
<b>0</b>	<b>REACTIVITY</b>
<b>N/A</b>	<b>OTHER</b>

### SECTION IX – Transportation Information

#### U.S. Dept. of Transportation

<b>ID Number</b>	<b>UN 1987</b>
<b>Proper Shipping Name</b>	<b>Alcohols, n.o.s. (Ethanol, gasoline)</b>
<b>Hazard Class</b>	<b>3</b>
<b>Packing Group</b>	<b>II</b>
<b>Label Statement</b>	<b>Flammable Liquid</b>

#### Water Transportation

<b>ID Number</b>	<b>UN 1987</b>
<b>Proper Shipping Name</b>	<b>Alcohols, n.o.s. (Ethanol, gasoline)</b>
<b>Hazard Class</b>	<b>3</b>
<b>Packing Group</b>	<b>II</b>

\*\*\*\*\*

The information in this data sheet does not constitute any contractual warrant as to product properties and is based on the current state of knowledge. For all chemical emergencies, call Chemtrec at 1-800-424-9300.