Cheri Dale - AQDX

Subject:	Rule 353 applicability to E-85 fuel
Location:	Palo Verde
Start:	Thu 02/18/2010 8:30 AM
End:	Thu 02/18/2010 9:30 AM
Recurrence:	(none)
Meeting Status:	Meeting organizer
Organizer:	Cheri Dale - AQDX
Required Attendees:	Johanna Kuspert - AQDX; Jo Crumbaker - AQDX; Douglas Erwin - AQDX; Lucinda Swann - AQDX; Kathy Houed - AQDX; Randy Ballard - AQDX

* Forward to David Shaw

* Cheri –
Rule is clear
policy reiterates current rule

An inspector inquired if E-85 fuel dispensing facilities are covered under Rule 353. I reviewed the rule (see below) and have determined that E-85 would be covered under the current rule. On July 21, 2009, the Arizona Department of Weights and Measures submitted a letter to the EPA requesting a revision to the SIP to exclude E-85 from the definition of gasoline. My concern is how this letter will or will not affect Maricopa County Air Quality.

E85 VR
orcement Discretior

February 12, 2010

Stage I E-85

South Coast
Rule 461

exempt from Stage II
requirements ONLY

Applicability: Rule 353, Section 204 and 503.

Topic: Inspection of E-85 fuel dispensing facilities.

Issue: How should the Air Quality Division inspect gasoline dispensing facilities that either dispense only E-85 fuel or dispense E-85 fuel along with other petroleum fuel products? Are E-85 fuel dispensing stations exempt from Maricopa County Air Quality Rule 353?

Discussion: 75 fuel ethanol plants in 20 states have been developed, with production capacities ranging from 500,000 to 310 million gallons per year (http://e85.whipnet.net/ .) With the projected increase in the production capacity, the availability and use of E-85 will also increase in Maricopa County.

Per Maricopa County Air Quality Rule 353.204, GASOLINE is defined as any petroleum distillate or blend of petroleum distillate with other combustible liquid(s), such as alcohol, that is used as a fuel for internal combustion engines and has a vapor pressure between 4.0 and 14.7 psi (200 - 760 mm Hg.), as determined by the applicable method pursuant to subsections 503.2 and 504.2. Rule 353, Section 503 allows the Control Officer to accept a manufacturer's data sheet (MSDS), data certified by an officer of the supplying company, or test data for the product as verification of a vapor pressure. In a review of MSDS for E-85, the vapor pressure was as follows:

• Speedway	SSA E85	43-776 mm Mg @ 100°F
• Archer Daniels Midland Company	Fuel Ethanol E85	340-560
• Aventine Renewable Energy	Fuel Ethanol E-85	340-560 @ 35°C

Two additional MSDS were reviewed but no vapor pressure was listed. The three MSDS listed above demonstrate that the E-85 fuel meets the vapor pressure requirement in the MCAQD definition of gasoline.

Rule 535, Section 503.2 discusses the two methods used for determining the vapor pressure of gasoline (reference Section 204). ASTM Method D323-94 includes procedures for the determination of vapor pressure of gasoline, volatile crude oil and other volatile petroleum products. The procedures are based on vapor pressures. For example, using an E-85 vapor pressure of 340 mm Hg, ASTM Method D323-94, Procedure A would be used to determine vapor pressure of the fuel. Method D4953 is the second method listed in Section 503.2 used to determine vapor pressure. Per the scope the "test method covers and is applicable to gasolines…with a vapor pressure range from 35-100kPa (5 to 15 psi)…" The vapor pressure is calculated to approximately 258 to 775 mm Hg. Again, this is within the vapor pressure range stated in the definition of gasoline.

Conclusion: E-85 is not specifically exempted from Rule 353 either in the definition of gasoline or in Section 305 exemptions. E-85 does meet Rule 353 definition of gasoline because of the following:

- E-85 is a "blend of petroleum distillate with other combustible liquid(s), such as alcohol…" as required in the definition of gasoline. E-85 is listed on MSDS as containing at least 80% ethyl alcohol, thus meeting the "…other combustible liquids…" section of the rule.
- The vapor pressure of E-85 listed on three MSDS is between 4 .0 and 14.7 psi (200-760 mm Hg) range as required in the definition of gasoline.

Vapor pressure of E-85 can be determined using methods listed for determining vapor pressure:

- Compliance determination of the vapor pressure of E-85 can be determined by ASTM Method D323-94, Procedure C.
- Compliance determination of the vapor pressure of E-85 can be determined by ASTM Method D4953-93.

Therefore, E-85 is subject to the current Maricopa County Air Quality Regulation III, Rule 353 requirements.

Submitted February 12, 2010, by Cheri Dale, Maricopa County Air Quality Planner

JANICE K. BREWER
GOVERNOR

GENE PALMA
INTERIM DIRECTOR

ARIZONA DEPARTMENT OF WEIGHTS AND MEASURES

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July 21, 2009

To: All Weights and Measures Stakeholders

Re: Stage II Enforcement Discretion for E85 Dispensers:

The Arizona Department of Environmental Quality, ("ADEQ"), and the Arizona Department of Weights and Measures, ("ADWM") will be asking the United States Environmental Protection Agency ("EPA") to take action on a revision to the State Implementation Plan, ("SIP") relating to Stage II Vapor Recovery in Area A.

This revision also includes a change in the definition of gasoline that would exclude E85, (a blend of 85% ethanol and 15% gasoline). If EPA acts upon this request, retailers would no longer be required to install Stage II vapor recovery controls on E85 dispensers.

This enforcement discretion letter will take effect as of the date of this letter. It will remain in effect until EPA takes action on the SIP revision for E85 dispensing facilities in area A, (the vapor control area).

This enforcement discretion is limited to Stage II requirements affecting E85 dispensers in area A. Additionally, please be advised that any discretion exercised is not necessarily representative of any action the EPA may initiate. If you have questions related to this enforcement discretion please contact Duane Yantorno at (602) 771-4933.

Sincerely

Gene Palma
Interim Director
Arizona Department of Weights and Measures

Cc: D. Ehrhart
D. Yantorno

Material Safety Data Sheet

MSDS ID NO.: 0137SPE012
Revision date: 01/30/2004

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: SSA E85
Synonyms: SSA ED75/ED85; E-75; E75; E-85; E85; Ethanol/Gasoline Fuel Blend; Fuel Ethanol ED75/ED85
Chemical Family: Gasoline/Ethanol
Formula: Mixture

Supplier:
Speedway/Superamerica LLC
P O BOX 1500
ENON OH 45501

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

E85 is a mixture of ethyl alcohol and gasoline that is approved for use in an automobile spark ignition engine. Can contain small amounts of dye and other additives (>0.02%) which are not considered hazardous at the concentrations used.

Product information

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
SSA E85	Mixture	100			

Component Information

Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Avoid skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

For use as a motor fuel only. Product should never be used as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

Portable containers of 12 gallons (45 liters) or less should never be filled while they are in or on a motor vehicle or marine craft. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. Containers should be placed on the ground. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers. A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling. Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

Engineering measures:	Local or general exhaust required in an enclosed area or with inadequate ventilation.
Respiratory protection:	Approved organic vapor chemical cartridge or supplied air respirators should be worn for exposures to any components exceeding the TLV or STEL. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.
Skin and body protection:	Use nitrile rubber, viton or PVA gloves for repeated or prolonged skin exposure.
Eye protection:	No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields.
Hygiene measures:	No special protective clothing is normally required. Select protective clothing depending on industrial operations. Use mechanical ventilation equipment that is explosion-proof.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Clear Liquid
Physical state (Solid/Liquid/Gas):	Liquid
Substance type (Pure/Mixture):	Mixture
Color:	Clear or Colored
Odor:	Hydrocarbon
Molecular weight:	Not determined.
pH:	Neutral
Boiling point/range:	90-437 F
Melting point/range:	Not determined.
Decomposition temperature:	Not applicable.
Specific gravity:	0.70-0.77
Density:	5.9-6.3 lbs/gal
Bulk density:	No data available.
Vapor density:	No data available.
Vapor pressure:	43-776 mm Hg @ 100 F
Evaporation rate:	No data available.

Appendix C: Material Safety Data Sheet for E85

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List) Fuel Ethanol E85	Note: Blank spaces not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name: Archer Daniels Midland Company	Emergency Telephone Number: 800/424-9300 or 217/424-5200
Address: (Number, Street, City, State, and ZIP Code) 4666 Fairies Parkway Decatur, Illinois 62526	Telephone Number for Information: 217/362-3980 Date Prepared: 7/5/95 Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity: Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Ethyl Alcohol (200 proof) CAS 0064-17-5	80%	-	-	80%
Gasoline CAS 008-006-619	20%	-	-	20%
Benzene CAS-0071-43-2*	1ppm	10ppm	-	< 1100ppm

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

Section III — Physical/Chemical Characteristics

Boiling Point: 96°-170°F	Specific Gravity (H2O = 1): 0.76-0.78
Vapor Pressure (mm Hg.): 340-560	Melting Point: N/A
Vapor Denisty (AIR - 1): 2.0-4.0	Evaporation Rate (Butyl Acetate = 1): Not Estimated
Solubility in Water: 60-70 gm/100ml	Appearance and Odor: Clear, colorless volatile liquid with ethereal odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used): -20°F to -4°F TCC	Flammable Limits: Not Estimated	LEL 1.4	UEL 19.0

Extinguishing Media: Carbon dioxide dry chemical, water for small fires. Polar solvent foam for large fires.

Special Fire Fighting Procedures: Use necessary protective equipment and breathing apparatus as would normally be used when fighting fires where there may be danger of breathing hazardous products of combustion.

Unusual Fire and Explosion Hazards: Flammable liquid

(Reproduce locally)

OSHA 174, Sept, 1985

Appendix C: Material Safety Data Sheet for E85 - *continued*

Section V — Reactivity Data

Stability	Unstable	Stable X

Conditions to Avoid: None in normal use

Incompatibility (Materials to Avoid): May react vigorously with oxidizing materials.

Hazardous Decomposition or Byproducts: Combustion may produce CO_2, NO_X and reactive hydrocarbons.

Hazardous Polymerization	May Occur	Will Not Occur X

Conditions to Avoid: None in normal use.

Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	(A)	(B)	(C)

Health Hazards (Acute and Chronic):
(A) May cause mucous membrane irritation, unconsciousness, coma, respiratory failure and death.
(B) May cause skin irritation as a result of defatting.
(C) Moderately toxic (LD50 0.5 to 5 G/Kg), gastrointestinal irritation, vomiting, CNX depression, coma.

Carcinogenicity:	NTP?	IARC Monographs	OSHA Regulated?
	Not determined	Not determined	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. Call a physician. If splashed in eyes or on skin, flush immediately with copious amounts 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. Small spills should be flushed with large quantities of water. Large spills should be collected for waste disposal.

Waste Disposal Method: Do not allow to enter sewers where vapors may be ignited. Incinerate in furnace where permitted under appropriate federal, state & local regulations or dispose of in a site stipulated for hazardous materials.

Precautions to Be Taken in Handling and Storage: Keep away from heat, sparks, and open flames. 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 (Specify Type): Air supplied mask for high concentrations

Ventilation	Local Exhaust: Preferred	Special: None
	Mechanical (general): Acceptable	Other: None

Protective Gloves: Rubber

Eye Protection: Goggles

Outer Protective Clothing or Equipment: Eye bath and safety shower

Work/Hygienic Practices: N/A

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*U.S.G.P.O.: 1986-491-529/45775