

OFFICE OF THE STATE FIRE MARSHAL  
STATE OF ILLINOIS

Statute, Rule or Standard Policy Interpretation:

Policy Number: 06-PCS-005                      E-85 Compatibility                      Effective Date: October 1, 2006

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Title:                      41 Il. Adm. Code  
Part:                      170  
Subpart:                      Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances  
Subpart Title:                      Underground Storage Tanks – Technical Requirements  
Section Number:                      470  
Section Title:                      UST Compatibility with Product Stored

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Purpose:                      This instruction provides for current policy and guidance to ensure uniform enforcement of 41 Il. Adm. Code 170.470 as it pertains to E-85 product only.

Scope:                      Statewide

Current Code:                      Owners or operators shall use a UST system made of, or lined with, materials that are compatible with the product stored in the UST system. (Owners and operators storing alcohol blends may use the following codes, incorporated by reference in Section 170.410, to comply with the requirements of this Section: API Recommended Practice 1626 and 1627.)

Policy Interpretation:                      Office of the Illinois State Fire Marshal  
Ethanol Compatible Underground Storage Tank (UST) Systems

As higher percentages of ethanol (greater than 10% ethanol by volume) are blended with gasoline, owners and operators must ensure their UST systems are compatible. What may have been compatible with E10 may not be compatible with a higher percent ethanol blend. Before you store or dispense a higher percent blend of ethanol, such as E85, it is your obligation as the owner/operator to ensure that the UST system is compatible with the product you intend to store in the UST.

The administrative rules for United States Environmental Protection Agency (USEPA) [40 CFR 280.32] and the Office of the Illinois State Fire Marshal [40 Il. Admin Code 170.470] are identical and state that "Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system."

*The Handbook for Handling, Storing, and Dispensing E85 (April 2006)* prepared by the U.S. Department of Energy acknowledges that E85 does not have the same compatibility characteristics of conventional fuels when it comes to storage and dispensing. Soft metals such as zinc, brass, lead and aluminum, which are commonly found in conventional fuel storage and dispensing systems, will degrade over time and are not compatible with E85. Some nonmetallic materials that degrade when in contact with ethanol include natural rubber, polyurethane, cork gasket material, leather, polyvinyl

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chloride (PVC), polyamides, methyl-methacrylate plastics, certain thermoplastic and thermoset polymers and adhesives (used in older fiberglass piping).

Based on the current information available the OSFM is adopting the following policy with respect to the storage and dispensing of E85:

1. Notification of Product Being Stored

It is the owner/operators responsibility to notify the agency of the product being stored in the UST System and when a UST System begins storing a different product. The "Notification of Underground Storage Tank Form" can be obtained at [www.state.il.us/osfm](http://www.state.il.us/osfm). Proceed to the OSFM link of Petroleum and Chemical Safety, then to "Downloadable Applications" then choose "UST Notification Form" or contact the Division of Petroleum and Chemical Safety at (217)785-1020.

2. Use of E85 in New UST Systems Installed After January 1, 2007

The agency will permit the distribution of E85 only in those UST Systems that have been certified by the manufacturer or registered professional engineer as E85 Compatible. Such UST system includes the tank, piping, components, auto shutoff, overfill valves, submersible pump, pump impeller, leak detection equipment, dispenser, adhesives/glues, gaskets, bushings, and couplings.

Existing UST Systems Installed Prior to January 1, 2007

New Conversions to E85

The tank and piping must be certified by the manufacturer as E85 compatible. In lieu of such manufacturers' certification, the OSFM will permit E85 to be stored in steel tanks, single wall and double wall fiberglass tanks manufactured after 1991, or any tank that has been certified by a registered professional engineer as compatible with E85. The associated piping must be steel, fiberglass piping installed after 1991 or piping that was certified by a registered professional engineer as compatible with E85. E85 may not be stored in relined tanks unless the relining material was certified by the manufacturer or a registered professional engineer as compatible with E85.

B. Existing Conversions to E85

No action is required where E85 is stored in a system that meets the requirements of the preceding Section A. In those situations where E85 is being stored in a system that is not compatible, the owner/operator has until January 1, 2008 to have the tank and piping certified as compatible or remove the E85 from the tank.

C. Dispensers and Components

Beginning January 1, 2008, the owner/operator must maintain at the facility location documentation from the manufacturer that the dispenser and major components of the UST Systems are E85 Compatible. Such major components include: Auto shutoff or overfill valves, Submersible Pump and pump Impeller, and Leak Detection Equipment (ATG probes, floats, sump sensors)

4. Written Violations

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The agency will write violations of non-compliance for any conversion of a UST System to E85 after January 1, 2007 that does not comply with this policy. For those facilities that converted a UST System to E85 prior to January 1, 2007 and filed the proper notification with the agency, the agency will forego writing violations of non-compliance until after January 1, 2008 to permit those owner/operators time to comply with this Policy.

We encourage you to contact your petroleum equipment supplier or Illinois licensed contractor to discuss with them the compatibility of the UST and system components you intend to use.

Repealed Date:

Superseded: