



# STATE OF IOWA

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To: Iowa Licensed Installers  
From: UST Section Supervisor  
Re: Checklist for storing and dispensing E-blend fuels and New UL 971 Standards

## **Evaluating Existing UST Systems for E-blend Compatibility**

E-blend fuel (greater than 10 percent ethanol by volume) is a fairly new product with a growing interest among petroleum marketers. Marketers will ask for your assistance in completing the DNR's checklist for converting existing USTs to storing and dispensing E-blend fuel. E-blend, while beneficial in many ways, poses some problems for existing systems, including compatibility, accelerated corrosion and water in the E-blend tank. These topics are discussed in the Ethanol section of our website: <http://www.iowadnr.com/land/ust/technicalresources/ethanol.html>. Our goal is to help you help the marketers introduce this product without creating new releases.

To assist you, the DNR has spent the last several months preparing a checklist for you and owner/operators to use in order to evaluate an existing UST system for compatibility with ethanol. We have also met numerous times with the ethanol industry (growers, producers, marketers) and contacted petroleum equipment representatives to work out what components to include in the checklist. As you know, E-blend affects components in the fuel path differently than gasoline, diesel or E-10. If an UST system is not properly evaluated for ethanol, a release could occur.

We decided an Iowa licensed installer was appropriate to complete the checklist because you likely installed the system and may have installation records available, at least for newer systems. Further, the Iowa licensed installer is the most professional, knowledgeable and experienced person to conduct the physical inspection. Your signature assures the DNR you have conducted a physical inspection, made the appropriate contacts and attest to the compatibility of the components.

The checklist requires some deskwork looking up records and making phone calls to manufacturers to make determinations about compatibility. When a tank owner contacts you to conduct a compatibility assessment of the equipment, you may have some records available for immediate review, especially if you installed the equipment. If you keep records for at least ten years and installed the system, you can deal with most of the compatibility items from your desk. For example, your research indicates you installed a 1995 single wall Owens Corning tank. The successor company, Containment Solutions, will tell you that an OC tank is not compatible unless it's double wall. In such a case, your research may be completed rather quickly. In other cases, especially newer systems, you may find less expensive and problematic components to convert, e.g., an automatic line leak detector, flex connector or sensor.

Eventually, there may be a web site for questions about equipment compatibility (e.g., IPECA had talked about making such a web site available), but for now you will have to put in the research time. After the research phase is complete you can contact the tank owner/operator with the results.

If the owner wants to continue, the next step is to conduct an on site assessment to ensure everything in the ground matches what's in the records or if records weren't available, the Iowa Licensed Installer would have to completely depend on the physical inspection or compatibility assessment to complete the checklist and confirm compatibility. If the owner/operator wants to proceed after the assessment

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is completed, any incompatible components will need to be replaced before E-blend can be delivered and the Iowa Licensed Installer can sign the checklist.

Many of the older **spill buckets** are not compatible with E-blend, in such cases the DNR will allow them to be used as long as they are liquid tight and emptied immediately after each fill. The same is true for sumps. Owners and operators must not allow E-blend to remain in spill buckets or containment sumps.

There currently does not exist a UL Marked, E-blend compatible, retail **dispenser**. You can buy an E-blend compatible dispenser, but through its conversion to E-blend compatible it has lost its UL Mark. Therefore, the DNR, working with the Fire Marshall Division agreed to allow a two-year phase in of non-compatible dispensers and thread sealant. Daily inspection of the dispenser is required. By July 2007, all dispensers must be compatible with the product stored, i.e., UL Marked or approved by the manufacturer.

Once you have confirmed the equipment is compatible, sign the checklist and make copies for yourself and the owner. You do not need to sign the checklist unless all of your responsibilities are met. If any component is found to be incompatible, either replace it (with the owner's permission of course) and sign the checklist or don't sign the checklist until the owner is ready to replace the components. Leave it as a work in progress. The owner must send a completed copy to the DNR. The owner/operator may store and dispense E-blend as soon as all the items on the checklist are completed and signed.

If you have any questions about the procedure for determining compatibility, don't hesitate to contact Tom Collins (515.281.8879) [Tom.Collins@dnr.state.ia.us](mailto:Tom.Collins@dnr.state.ia.us) or Paul Nelson (515.281.8779) [Paul.Nelson@dnr.state.ia.us](mailto:Paul.Nelson@dnr.state.ia.us). Again, the checklist and guidance documents are on the UST Section Website under Ethanol: <http://www.iowadnr.com/land/ust/technicalresources/ethanol.html>.

### **New and Revised Requirements to UL 971**

In December 2002 a UL advisory panel met to discuss problems associated with, nonmetallic underground piping used for flammable liquids. At that time, the most recent UL 971 standard was dated October 30, 1995. By 2002 problems with flexible piping were well known.

The scope of UL 971 includes primary carrier, secondary containment, integral primary/secondary containment, normal vent, nonmetallic pipe, fittings and systems (products) intended for use in underground storage tank systems containing flammable and combustible liquids (see UL 971 site: <http://www.ul.com/tca/spring04/>). UL 971 refers to nonmetallic thermoplastic (flexible) and thermoset (rigid) plastic piping with manufacturer supplied fittings for underground use only.

Based on the problems identified by the advisory panel, the new and revised requirements to UL 971 were developed and issued on January 24, 2004. Manufacturers were required to meet the new performance standards by July 1, 2005. New performance standards meant the manufacturers of rigid and plastic pipe could not produce piping under the old standard after July 1, 2005. If they wanted to comply with the new UL standard they had to submit their product for UL testing. The new standard is expected to produce a stronger, less permeable, safer, more reliable pipe. The standard also requires compatibility with alcohol fuels.

### **Iowa Requirements for UL 971**

For all installations after January 1, 2006, where UL-certified nonmetallic piping is to be installed, the piping must meet the July 1, 2005 standard. Nonmetallic piping previously installed and meeting earlier 1995 UL standard may remain in place, but may not be installed after January 1, 2006. After January 1, 2006, should piping require replacement, the replacement piping must meet the July 1, 2005 standard. Again, contact Tom Collins or Paul Nelson if you should have a question.