

Guidance On Compatibility Of UST Systems With Ethanol Blends Greater Than 10 Percent And Biodiesel Blends Greater Than 20 Percent

This guidance discusses how owners and operators of underground storage tanks (USTs) regulated under 40 CFR part 280 can demonstrate compliance with EPA's compatibility requirement (40 CFR 280.32) when storing gasoline containing greater than 10 percent ethanol or diesel containing greater than 20 percent biodiesel. In 1988, EPA promulgated the compatibility requirement (and all other UST requirements) under the authority of Subtitle I of the Solid Waste Disposal Act, as amended.

This guidance applies in Indian country and in states that do not have state program approval (SPA). Because SPA states must have a compatibility requirement that is similar to the Federal compatibility requirement, SPA states may find this guidance relevant and useful to them as well.

The discussion in this document is intended solely as guidance. The statutory provisions and EPA regulations described in this document contain legally binding requirements. This document is not a regulation itself, nor does it change or substitute for those provisions and regulations. Thus, it does not impose legally binding requirements on EPA, states, or the regulated community.

In March 2009, EPA received a Clean Air Act (CAA) waiver application to increase the allowable ethanol content of a gasoline-ethanol blended fuel from 10 percent ethanol to 15 percent ethanol.¹ In October 2010 and January 2011, EPA conditionally granted partial waivers, allowing gasoline-ethanol blends that contain greater than 10 percent ethanol up to 15 percent ethanol (E15) to be introduced into commerce for use in 2001 and newer model year light-duty motor vehicles (which include passenger cars, light-duty trucks, and medium-duty passenger vehicles such as some sport utility vehicles).² If other state, Federal, and industry practices also support this introduction, E15 may become available in the marketplace. As a result, EPA anticipates that some UST system owners and operators may choose to store higher percentages of ethanol in their UST systems.

Please note that EPA's partial waiver under the CAA has no legal bearing on an UST owner or operator's requirement to comply with all applicable Federal UST regulations, including the UST compatibility requirement in 40 CFR 280.32. Specifically, in order to ensure the safe storage of higher ethanol and

Background

EPA published guidance in the [July 5, 2011 Federal Register](#) regarding compatibility of underground storage tank (UST) systems with biofuel blends. The entire *Federal Register* notice includes general information, background, response to public comments, and the final guidance. EPA published a minor typographical correction of the guidance in the [August 3, 2011 Federal Register](#). For convenience, here is the final, correct guidance.

This guidance discusses how owners and operators who wish to store gasoline containing more than 10 percent ethanol or diesel containing more than 20 percent biodiesel in their UST systems may demonstrate compliance with the compatibility requirement in 40 CFR 280.32. The guidance reflects public comments EPA received as a result of our [November 17, 2010 Federal Register notice of draft guidance](#).

¹ See 74FR18228 (April 21, 2009).

² See 75FR68093 (November 4, 2010), and 76FR4662 (January 26, 2011).

biodiesel blends, or any other regulated substance, owners and operators must meet the existing compatibility requirement for UST systems.

The UST compatibility requirement in 40 CFR 280.32 states, "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." Because the chemical and physical properties of ethanol and biodiesel blends may make them more aggressive to certain UST system materials than petroleum, it is important that all UST system components in contact with ethanol or biodiesel blends are materially compatible with that fuel.

UST System Components That May Be Affected by Biofuel Blends

To be in compliance with 40 CFR 280.32, owners and operators of UST systems storing ethanol-blended fuels greater than 10 percent ethanol or biodiesel-blended fuels greater than 20 percent biodiesel must use compatible equipment. EPA considers the following parts of the UST system to be critical for demonstrating compatibility:

- Tank or internal tank lining
- Piping
- Line leak detector
- Flexible connectors
- Drop tube
- Spill and overfill prevention equipment
- Submersible turbine pump and components
- Sealants (including pipe dope and thread sealant), fittings, gaskets, o-rings, bushings, couplings, and boots
- Containment sumps (including submersible turbine sumps and under dispenser containment)
- Release detection floats, sensors, and probes
- Fill and riser caps
- Product shear valve

For newly installed equipment comprised of multiple individual components such as submersible turbine pump assemblies, UST system owners and operators may obtain a certification from the equipment manufacturer documenting compatibility for the entire assembly. If equipment requires maintenance and components of that equipment (for example, sealants and gaskets) are subsequently added or replaced, manufacturer approval of the overall component is not sufficient to demonstrate compatibility.

Options for Meeting the Compatibility Requirement

Acceptable methods for owners and operators of UST systems storing ethanol-blended fuels greater than 10 percent ethanol or biodiesel-blended fuels greater than 20 percent biodiesel to demonstrate compatibility under 40 CFR 280.32 are:

- Use components that are certified or listed by a nationally recognized, independent testing laboratory (for example, Underwriters Laboratories) for use with the fuel stored;

- Use components approved by the manufacturer to be compatible with the fuel stored. EPA considers acceptable forms of manufacturer approvals to:
 - Be in writing;
 - Indicate an affirmative statement of compatibility;
 - Specify the range of biofuel blends the component is compatible with; and
 - Be from the equipment manufacturer, not another entity (such as the installer or distributor); or
- Use another method determined by the implementing agency to sufficiently protect human health and the environment. EPA will work with states as they evaluate other acceptable methods.

Currently, a note in 40 CFR 280.32 allows owners and operators to use the American Petroleum Institute's (API) Recommended Practice 1626, an industry code of practice, to meet the compatibility requirement for ethanol-blended fuels. The original version of API 1626 (1st ed. 1985, reaffirmed in 2000) applies to up to 10 percent ethanol blended with gasoline and is not applicable to meet the compatibility requirement for ethanol blends greater than 10 percent. In August 2010, API published a second edition of API 1626. The second edition addresses ethanol blends greater than 10 percent and may be used to demonstrate compatibility for UST systems storing ethanol blends.

If the UST owner and operator is not able to demonstrate that the UST system is made of materials that are compatible with the ethanol blend or biodiesel blend stored, according to 40 CFR 280.32, the UST owner and operator may not use the system to store those fuels.

State UST program regulations may be more stringent than the Federal UST regulations. In addition to state and Federal UST requirements, UST system owners and operators may be subject to other Federal, state, or local regulatory requirements (for example, U.S. Occupational Safety and Health Administration, National Fire Prevention Association, and International Fire Code). UST system owners and operators should check with their state and local agencies to determine other requirements.

If you have questions about this guidance, please contact Andrea Barbery at barbery.andrea@epa.gov or (703) 603-7137.

Dated: June 17, 2011

Mathy Stanislaus
Assistant Administrator, Office of Solid Waste and Emergency Response