

Retail Conversion of Ethanol Blended Fuels

Retail Station Checklist

The introduction of ethanol fuel mixtures is a strategic move for many retailers. A thorough investigation and implementation plan is the key to a successful new fuel introduction. This checklist provides essential step-by-step information. Each of these steps should be thoroughly evaluated when preparing retail storage tanks and dispensers. In addition, station employees and transportation drivers should be notified early in the process and trained on the properties of the new fuel blends. Each step should be documented as a reference for future considerations.



Ethanol is a flammable liquid. Avoid sparks and flames. It is advisable to wear safety goggles when handling ethanol. If ethanol comes in contact with the body or face, rinse with water. Use good ventilation and avoid breathing vapors.

System Investigation and Preparation

- ✓ Notify necessary authorities of intentions to offer ethanol blended fuels. Information on conversion techniques and regulatory requirements for motor fuels may also be available.
- ✓ Verify tank material compatibility. Is the tank older than 1981? Has the tank been lined? What is the lining material? Document material compatibility with the manufacturer's certification.
Tank Manufacturer: _____ Year of Construction: _____
- ✓ Verify construction material of submersible pumps and pipes for compatibility with ethanol. Document material compatibility with the manufacturer's certification.
- ✓ Verify compatibility of tank gauging system, including water and leak detection equipment. Document material compatibility with the manufacturer's certification.
- ✓ Verify compatibility of the spill containment system and overflow system. Document material compatibility with the manufacturer's certification.
- ✓ Verify compatibility of the dispensing system, including valves, hoses, nozzles, swivels, etc. Use only steel or nickel-plated or swivel nozzles. Document material compatibility with the manufacturer's certification.
- ✓ Review the safety listing requirements and contact the fire marshal or local authority that has jurisdiction for system requirements and inspection.
- ✓ Investigate tank system for water problems and correct. Review history of water problems and initiate any necessary corrective action. Install rain caps into tank opening as vent lines to prevent rainwater from entering.

- ✓ Check for tilted tanks. Inspect both tank openings (it may be necessary to remove the tank gauging equipment).
- ✓ Inspect tank for cleaning and residue. Clean the tank and remove the water bottom, if necessary.
- ✓ Verify a tight seal on the fill caps and proper water run-off from the man hole covers. Plug any holes in the fill line box.
- ✓ Verify safety equipment for effectiveness with ethanol fuel blends. Utilize alcohol-resistant film forming foam (AR-AFFF) or dry chemical that is effective.
- ✓ Modify inventory system for new fuel. If necessary, obtain the fuel density and temperature compensation factors.
- ✓ Train employees on new fuel properties.
- ✓ Notify local authorities and emergency response personnel of ethanol fuel blend offering.
- ✓ Notify insurance carrier of new fuel blend.

Pre-Delivery

- ✓ Place on pump or dispenser with 10-micron filter ethanol compatible filter. Water slug filters are optional. Always remember; **Safety first - Shut off breakers.**
- ✓ Re-check for water bottoms and remove any present.
- ✓ Emits alcohol-compatible paste. Discard old incompatible pastes.
- ✓ Ensure that the pump labels are appropriate.
- ✓ Confirm applicable accounting procedures.

First Delivery

- ✓ Check for water. Water bottoms must be removed prior to the first delivery of ethanol blends.
- ✓ Follow normal delivery procedures and ensure that accurate tank gauge and dispenser readings are taken.
- ✓ Verify with transport driver correct product and compartment for correct tank.
- ✓ Pumps must be turned off during initial delivery.
- ✓ Purge lines from tank to dispensers.
- ✓ Install the necessary decals and, if necessary, replace the octane decals. Also repaint the manhole covers to the appropriate color code (for example, API color code).
- ✓ Fill the tanks at least 80% of the capacity. Keep it as full as possible for 7 to 10 days.
- ✓ Test for water funds at the beginning of each change for the first 48 hours after the initial delivery.

Post-Delivery and continuous maintenance

- ✓ Check the water's introduction daily. No level is acceptable.
- ✓ Replace the filters if the pump/dispenser is running slowly.
- ✓ Check pump calibration Two weeks after initial load conversion



ADDITIONAL INFORMATION: Retail fuel storage conversion procedure should include a review of any corporate or branded fuel requirements. The state agency responsible for fuel quality may have a helpful checklist for retail conversion procedures. There may be labeling requirements for ethanol-blended fuels. This information is also available from the appropriate state agency.

DISCLAIMER: This information is meant to educate gasoline marketers and retailers, as well as anyone shipping, storing or selling ethanol-blended fuel. It is not a comprehensive guide to ensure compliance with all federal, state and local requirements. All parties must take the appropriate steps as outlined by the law and therefore should be in contact with the proper officials. The Renewable Fuels Association assumes no liability for any incidents involving ethanol or ethanol-blended fuels.