



# Retail Station Management Issues for Gasoline Blended With Ethanol

Beginning October 1, 1997 all gasoline sold in Minnesota, with the exception of a few special uses, must contain oxygen. Stations in the 10 county metropolitan area have used this fuel every winter since November 1, 1992 to comply with federal pollution regulations. The metro area has had year-round ethanol blend usage since October 1, 1995. Now ethanol blended gasoline will be introduced into many rural retail gasoline storage tanks for the first time. From our experience in the greater metro area, we are confident that problems will be minimal to non existent if jobbers and dealers pay careful attention to a few housekeeping details.

A well maintained tank with no water and a final filter used on the dispensing hose can be filled with an ethanol blend with no special preparation. Conversely, a tank containing water must have the water removed before filling. Once the changeover is made on a sound tank, with proper driveway drainage, and good housekeeping practices, gasoline in your tanks and those in your customers' should remain clean and dry as long as ethanol blends are used. Please take a few moments to review this material and follow the recommendations to avoid any unnecessary problems for you and your customers. If you do experience any problems or have questions on the information in this fact sheet please call (612)297-2223, (612)297-4653 or (800)846-FUEL.

## **BEFORE DELIVERY**

### **CHECK FOR TANK MATERIALS OTHER THAN STEEL.**

Epoxy or polyester linings installed prior to 1980 are generally not warranted for ethanol gasoline blends. However, most fiberglass products are compatible with ethanol. If there is a question, contact the manufacturer or contractor who lined or installed the tank.

### **SECURE A SPECIAL WATER FINDING PASTE.**

A paste designed for use with ethanol blends must be used. Consult your tank service provider or call:

The Sartomer Company  
468 Thoman Jones Way  
Exton, PA 19341  
Phone: 610/363-4100  
-or-  
Kolor Kut Products Co.  
PO Box 5415  
Houston, TX 77262  
Phone: 713/926-4780

### **DOES THE TANK HAVE A HISTORY OF WATER CONTAMINATION?**

Eliminate any water or water source before ethanol blend is ordered. Never drop an ethanol blend in a tank with a water bottom or where a water bottom is expected.

Although a leaky tank is possible, tank service companies report that most water problems result from improper first fill procedures or poor housekeeping. Faulty seals on filler caps should be repaired.

Be sure that the catchbasin valve is closed after filling. Make sure employees or delivery personnel never release water accumulated in the catch basin through the drain. That water will run directly into the tank. Water (which may be covered with gasoline) should be drawn out of the catch basin before delivery is made.

### **DEplete EXISTING INVENTORY IN TANK.**

Even if the tank is clean and water-free, it should be nearly empty before filling to avoid diluting of the ethanol percentage. On your first fill, order as large a load as possible of a full 10% ethanol blend. This will provide the most protection against potential problems with any undetected water in the system.

## **BEFORE FILLING...**

### **"STICK" THE TANK BOTTOM FOR WATER.**

Carefully use a water finding paste. If water is present, it must all be removed prior to filling and disposed of in a manner consistent with PCA guidelines.

INSTALL A FINAL FILTER AND MONITOR FLOW RATE.

All pumps dispensing ethanol should have a final filter. A code (300m) spin-on canister filter designed especially for use with ethanol blends may be obtained for extra protection. These special filters should not be used before ethanol blends are installed. The "300m" filters will stop or restrict the flow of gasoline to 2 gpm if water or ethanol blend phase separate reaches the pump. Monitor pump flow rate for the first two loads of ethanol blends. Replace the filter and check for water bottoms if pump flow rate is reduced.

### AFTER FILLING...

WAIT 10 MINUTES AND THEN DRAW A FUEL SAMPLE.

Pump the product until lines are purged and new fuel is coming from the tank. A clear and bright product indicates that all water has been removed and the filter is working properly.

Although it rarely occurs, cloudy or hazy gasoline is an indication of phase separation. With ethanol blends you must use a special paste when you stick test for a water (phase separated) bottom.

**If phase separation has occurred:**

1. Stop sales from tank.
2. Determine if tank is leaking or if delivery was contaminated.
3. Remove phase separation (ethanol/water bottom).
4. Blend product back to original specifications.

RESTORE FUEL TO ORIGINAL SPECIFICATIONS.

A dry ethanol blend greater than 10% should be added, to bring the fuel back to specifications for both octane and oxygen. For guidance on this procedure, call the Minnesota Department of Public Service, Division of Weights and Measures at (612)639-1040.

After you have computed the proper blend, you may hand blend a gallon of samples of the cloudy and the dry blend first to be sure that the resultant mixture will be clear.

### AFTER THE SALE...

Advise your customers to check for and remove water in their gasoline storage tanks or cans before introducing ethanol blends. Once blends are properly installed in a sound tank, moisture from condensation or venting will not accumulate.

Let customers know that any concerns or questions they have may be addressed to the Department of Agriculture, the Department of Public Service, or the Minnesota Pollution Control Agency (numbers are listed below).

The State of Minnesota is committed to making this oxygenated fuel program work for cleaner air, a stronger economy and less dependence on foreign oil.

### MORE ETHANOL QUESTION'S...

The Minnesota Department of Agriculture (MDA) has a database of information on ethanol blended fuels, as well as consumer handouts.

For additional information, a supply of consumer handouts, or answers to ethanol related questions, call The Minnesota Department of Agriculture at (612) 297-2223, (612) 297-4654 or (800) 846-FUEL.

The Minnesota Department of Public Service, Weights and Measures Division can provide technical and regulatory information and service. They can be reached at 612-639-4010.

The Minnesota Pollution Control Agency. Answers regarding the proper disposal of water or phase separated tank bottoms may be obtained at (800)657-3724.

