



Preventing Problems from Biofuels and ULSD

By
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In the article, "*ULSD Corrosion: Finally, an Answer?*", we explored the causes of increased microbial growth in today's diesel fuels. These microbes contain acids that contaminate fuel which leads to increased corrosion, clogged filters and potential damage to vehicles and equipment. Water is a key factor, acting as a catalyst in this phenomenon. Today we would like to focus on three preventive measures that can be taken to keep this problem in check: water monitoring, biocides and filtering. Finally, if the situation gets out of hand, the tank will need to be cleaned to bring it back to stability. We will deal with that scenario in another article.

Water monitoring – Nearly all USTs (Underground Storage Tanks) are equipped with a tank monitoring system. Most of these give a separate fuel and water level. For other tanks, it is important to track the water level using a water detection paste such as Gasoila or Kolor Kut. We recommend 2" as the threshold for having the water removed from the tank by a licensed professional. Tank monitors can be programmed to alarm at that point. Tanks with a history of water problems should be investigated. The problem may be as simple as a loose or faulty riser cap.

Biocides – These liquid chemicals are made to be periodically added to the tank. They are designed to kill the microbes in the fuel/water interface. Biocides can also be used to "shock" an already contaminated tank. We exclusively use and recommend Kathon FP 1.5 from Dow Chemical. It is highly concentrated and handlers must use protective clothing and eyewear. Kathon FP 1.5 is a broad spectrum anti-bacterial and fungicide. It is approved for most fuels. The dosage rates vary depending on usage and whether it is being used as a preventative or to remediate an already contaminated tank. Dip samples and lab tests can be performed to determine the level of contamination before proceeding with a treatment and should be done periodically on critical operations tanks, backup generators for example.

This has become a popular method of control since the introduction of biodiesels and ULSD. It is available from most fuel and petroleum equipment suppliers.

Filtering – The fact is that some level of microbial contamination is going to exist in diesel tanks. The obvious point of filtering is to keep that out of your vehicles and equipment. There are many different types of filters available and it can be confusing at times to specify the right one. The days when any kind of filter would be better than none are gone. The actual filter material and the level of permeation vary for each application. There are different filters for gasoline, ethanol blends, conventional diesel, biodiesel and ULSD, etc. The wrong filter will either not collect the contaminants or prematurely clog. The two primary brands of filters for fleet and retail fueling applications are Cim-Tek www.cim-tek.com and Petroclear www.petroclear.com. Both manufacturers have an extensive application table to select the correct filter. We recommend installing a filter at each dispenser and replacing the filters on a regular schedule.

If filters are clogging prematurely, it may be an indication of fuel contamination. We have seen extreme cases where filters clogged daily until the tank was cleaned. We have also seen contaminated fuel go right past the wrong filter type and clog engine fuel filters. If this is occurring, it is best to bring in a petroleum equipment expert to diagnose the problem and recommend a course of action

For most operations, a regimen that includes these three steps will keep the fuel site trouble free. As more biofuels like biodiesel, ULSD and higher blends of ethanol find their way into fueling operations, it is increasingly important to keep tight controls to fight contamination. The costs of failing to do so are high. There are times that the situation gets out of control and the only solution is to clean out the tank and start from a new baseline. We will deal with that in another article.

Questions or Feedback?

Please contact us to discuss your USLD corrosion challenges as well as sharing your opinions about effective solutions for prevention.

About Steve Trabilsy

Steve has thirty years experience dealing with fueling solutions of every kind. Before becoming Owner and President of Accurate Tank in 2007, Steve built a substantial career in the petroleum equipment industry. He grew up in the business, spending 27 years with Petro Vend and OPW Fuel Management Systems (a Dover Corp subsidiary), holding management positions in Operations and Sales before becoming President in 1998. In 2005, Steve founded 7 Bridges Consulting, specializing in developing strategies for the petroleum equipment marketplace. Steve is active in the Petroleum Equipment Institute (PEI), of which Accurate Tank is a member. He has served as a Director and has chaired several PEI committees. Steve holds a BS degree from Elmhurst College and an MBA from DePaul University.

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