

# TECHNICAL SERVICE BULLETIN

## Ethanol Fuel



The increase in ethanol based fuels available in the market today has made vehicle manufacturers and suppliers create more robust fuel systems that can operate in an ethanol rich environment. The higher percentage of ethanol in fuel is more aggressive to the fuel system components including fuel level sensors and even the fuel pump.

Ethanol absorbs a larger amount of moisture compared to conventional fuel. If mixed with water in the fuel system, ethanol will produce formic acid. Formic acid will be found in the fuel system in small quantities and although corrosion will start to form.

As the percentage of ethanol increases in the fuel, electrical conductivity will also increase. The fuel delivery system must be ESD (Electro-Static Discharge) complaint. All related components must be capable of dissipating the charge through approved conductive material to the vehicle ground. Components such as the fuel filler neck, modules and nylon tubing must be ESD compliant to ensure the entire fuel system is ESD compatible.

To ensure fuel delivery system integrity and functionality, Spectra Premium performs the following testing parameters to the fuel delivery system components to ensure longevity and functionality.

Even though manufacturers have identified that 10% ethanol content as no effect on conventional components of the fuel delivery system, Spectra Premium performs testing of the fuel delivery system to ensure compatibility of the fuel delivery components in the ever growing market of ethanol based fuels.

For Flex Fuel Vehicles (FFV) running with E85, Spectra Premium ensures that high quality components such as stainless steel hangers, internal pump components and specific plastics are compatible to the FFV standard.



### TESTING

TESTING	
<ul style="list-style-type: none"> <li>• E10 (conventional fuel delivery systems)</li> </ul>	<ul style="list-style-type: none"> <li>• E85 (Flex fuel vehicles)</li> </ul>
<ul style="list-style-type: none"> <li>- Long life testing in E10 of fuel pumps and modules</li> </ul>	<ul style="list-style-type: none"> <li>- Fuel delivery components are soaked in E85 for compatibility</li> </ul>
<ul style="list-style-type: none"> <li>- Individual components are soaked in E10</li> </ul>	<ul style="list-style-type: none"> <li>- Individual Pumps are soak test in E85 including performance test at operating pressure @12 and 13.5 volts.</li> </ul>
<ul style="list-style-type: none"> <li>- Wiring harness and fuel level sensor testing in E10</li> </ul>	<ul style="list-style-type: none"> <li>- Long life testing is performed for durability and longevity.</li> </ul>
	<ul style="list-style-type: none"> <li>- Wiring harness and fuel level sensor test (specific to testing)</li> </ul>

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