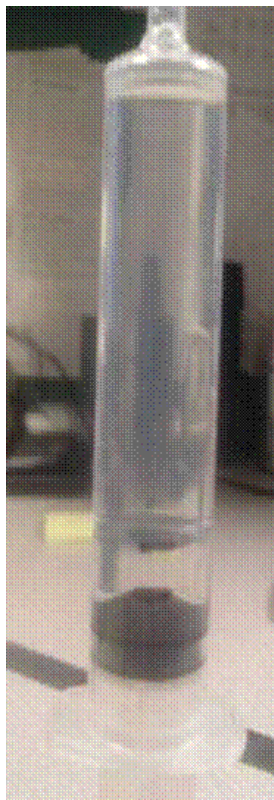


Most current fuels contain a quantity of Ethanol. In the main this is not an issue; while the Ethanol and Gasoline remain a homogenous solution the Ethanol content in the fuel will not cause damage or deterioration of any fuel cell components or the bladder itself. The issue comes when phase separation occurs.

As can be seen from the image below (demonstration using Shell LMS E10) the Ethanol and Gasoline can become entirely separated. The main cause of phase separation is the introduction of moisture.



The Water and the Ethanol have mixed, separated and settled to the base while the pure Gasoline sits on top. We now have a mix of 98% Ethanol and 2% Water in direct contact with the fuel bladder and components which will begin to attack Rubber, Aluminium and Polyester [foam], the materials most used in Motorsport fuel systems.

Given these facts ATL advise that all fuel systems are pumped out when cars are not running wherever possible.

Until now no FIA homologated fuel bladders have been manufactured from alcohol resistant materials as no FIA regulated formula use pure Alcohol as a fuel. ATL have developed an Ethanol resistant fuel bladder material [ATL-891-B] to cater for this growing E-Fuels market and are currently the only fuel cell manufacturer to offer an Ethanol resistant FIA homologated [FIA/FT3.5-1999] material. This will not however help the other components in the fuel system and ultimately the engine should the user start running on a pure Water / Ethanol blend!