

BIODIESEL'S EFFECT ON ENGINE OILS

Biodiesel is steadily growing in the fuel market. Biodiesel sales in the US reached 75 million gallons in 2005 and exceeded 200 million gallons in 2006. Experts believe 2007 sales may nearly double 2006 sales. With biodiesel being a renewable resource and capable of reducing the need for oil imports, it is obviously here to stay. So what does that mean for diesel engine oils and their service life?

Evidence shows the biggest concern is the increase in fuel dilution frequency. Biodiesel has a higher boiling point than diesel, which will reduce the amount of fuel cooked out of the sump. Additionally, biodiesel has a higher viscosity and greater density and surface tension than traditional diesel fuel. These factors create larger droplet sizes, allowing the biodiesel to be pushed into the engine oil sump with greater frequency. The resulting fuel dilution will increase the risks of reduced oil film thickness, wear, corrosion, engine deposits, and oil degradation.

The by-products of biodiesel oxidation are known to be aggressive towards soft metals such as lead and copper, which are typical bearing components. Although it can be corrosive to lead and copper, very little evidence exists that it is actually damaging bearings.

The increase in piston deposits and sludge formation is also a concern. Due to the lower oxidative stability of the biodiesel, this issue tends to occur more frequently. The increase in deposits can further lead to stuck rings which, in turn, cause higher soot levels and blow-by gases that will increase viscosity and oil degradation.

Studies show that oil quality will go a long way in reducing some of the deleterious effects of the use of biodiesel on the engine oil. Top tier oils have shown a better ability to negate the effects of biodiesel. Higher quality oils significantly reduced the amount of corrosivity of the oil.

End users of biodiesel should look into using a high quality oil in conjunction with the use of biodiesel. The use of a premium engine oil product such as Universal Dezol, Dyna-Plex 21C SHPD, or Dyna-Plex 21C Durazol HC will help to reduce the potentially degrading effects of biodiesel on an engine oil's service life.

Source: Lubes 'n' Greases, June 2007; Lubes 'n' Greases, Lube Report, Nov 28, 2007
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