How Lubricious is Your Fuel

Fuel lubricity has always been an important part of diesel engine operation and more so now with the extremely tight operating tolerances of today's engine fuel pumps and injectors.

A "lubricious" fuel can provide:

- ✓ Protection to the fuel system
- ✓ Extended pump and injector life
- ✓ Reduced repair costs
- ✓ Reduced downtime

Lubricity enhancers are attracted to metal surfaces, causing the additive to form a thin surface film. The film acts as a boundary layer, preventing two metal surfaces from coming into contact.

By coating the moving parts, lubricity enhancers reduce wear and help eliminate excessive heat. Some fuel pump systems are more susceptible to damage from low lubricity fuel than others. As an example, a rotary type fuel pump looks to the fuel alone for lubricity protection, where some pumps also use lubricating oil for a portion of the lubricity protection. This is not to say that one pump design is better than another, but to point out that lubricity properties are very important to engine performance and even more so in certain types of fuel pumps.

Engine damage can result from reduced lubricating properties.

In systems with particularly close tolerances, anything that reduces the lubricating properties of the fuel can cause damage. Water in the fuel, alcohol from some fuel additives, and #1 diesel fuel or gasoline mistakenly added to the tank can all cause decreases in a fuel's lubricity, which can potentially result in damage. Using fuels with poor lubricity can increase fuel pump and injector wear and, in extreme cases, cause catastrophic failure.

Why am I now hearing about fuel lubricity?

In 1993, the U.S. Environmental Protection Agency (EPA) mandated that sulfur content of on-highway diesel fuel be lowered from 5,000 ppm to 500 ppm. Between 2006 and 2010, sulfur content transitioned from 500 ppm to a maximum of 15 ppm. Off-road diesel fuel sulfur content also transitioned to a maximum of 15 ppm. Each time the level of sulfur has been lowered, the lubricity properties of the fuel have dropped since sulfur is a natural lubricating agent.

How do I know if the fuel I use is protecting my equipment?

While there is a new awareness because of the reduced levels of sulfur in today's Ultra Low Sulfur Diesel (ULSD) fuel, lubricity has been a concern at FS since the early 1950s. Due to this concern, lubricity enhancers (friction modifiers) have been a part of the Dieselex® Gold additive package for all those years. The performance benefits we have recognized for nearly 70 years are even more important today.

A 'lubricious' fuel extends pump and injector life, reduces repair costs, and ultimately reduces downtime for the user. In fact, Dieselex Gold lubricity performance testing has consistently outperformed the Engine Manufacturers Association's recommended requirements. You can rest easy knowing the Dieselex Gold provide the protection you need for your diesel engines.

Be sure to view our Dieselex Gold pages to learn about other components found in our Dieselex Gold multi-functional additive package that can help improve the performance of the equipment you operate.