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The latest in Vehicle Products News

SOLVE YEAR-ROUND PROBLEMS ASSOCIATED WITH DIESEL FUEL AND ITS SYSTEMS WITH DIESEL PLUS® FUEL CONDITIONER

Diesel Plus diesel fuel conditioner is a multipurpose fuel additive that will solve year-round problems associated with diesel fuel systems. Its L-10 Superior Detergency rating cleans fuel system components, keeping diesel engines running smoothly and at peak efficiency.

Diesel Plus replaces the necessary lubrication for fuel system components that is lost with the use of ultra-low sulfur diesel fuel (ULSD). Because ULSD is also less stable than low sulfur diesel fuel (LSD), Diesel Plus contains anti-oxidants to improve the stability and lengthen the useful life of ULSD. Its moisture-scavenging properties helps to remove moisture and aids in preventing bacteria from growing in the fuel.

When used at the winter treatment rate, Diesel Plus has the ability to lower the cold filter plugging point (CFPP) of the fuel by as much as 22 F°, providing quick cold-weather starts along with improved combustion.

Two Convenient Treatment Rates with One Product

Summer and winter treatment rates with Diesel Plus eliminate the need for multiple products throughout the year that don't take care of all your needs.

Conklin Diesel Plus Fuel Conditioner:

- Improves efficiency
- Extends the life of injectors and fuel pumps
- Lowers gel point by as much as 35 F°
- Lowers CFPP by as much as 22 F°
- Improves diesel fuel's cetane number by as much as 4
- Stabilizes diesel fuel
- Improves lubricity of diesel fuel
- Keeps fuel system clean

Diesel Plus Sizes	Summer Treatment Rate	Winter Treatment Rate
1 Pint	150 Gallons	75 Gallons
1 Gallon	1,200 Gallons	600 Gallons
5 Gallons	6,000 Gallons	3,000 Gallons
55 Gallons	66,000 Gallons	33,000 Gallons

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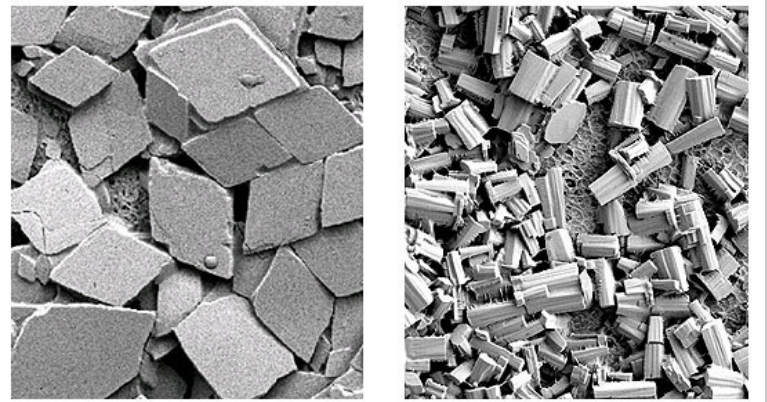
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DIESEL PLUS® FUEL CONDITIONER (CONT.)

The photos to the right show how Diesel Plus improves the cold flow properties of diesel fuel. As diesel fuel gets colder, the paraffin waxes begin to form and clump together (left). Once these waxes stop the flow of diesel fuel through the filter, you have reached the Cold Filter Plugging Point (CFPP). The gel point is then the temperature where the diesel fuel no longer flows at all. The cold flow improver additives in Diesel Plus do not allow these waxes to clump together (right) until much lower temperatures, which keeps the fuel flowing through the filter and keeping you on the road!

At the winter treatment rate, Diesel Plus can lower the CFPP of diesel fuel as much as 22 F° and the gel point by as much as 35 F°.

Diesel Fuel Cold Flow Characteristics



Left: Untreated #2 Diesel Fuel; Right: #2 Diesel Fuel treated with Diesel Plus

Why is the phrase “as much as” used in the industry when referring to lowering the CFPP and gel point?

The quality of the diesel fuel you purchase from week to week varies, even from the same gas station! The diesel fuel you purchase is required to have a CFPP plus or minus 5 degrees from 0 F°, but there are different ways to get the fuel to that range.

A diesel fuel that is not as well-refined will need the addition of cold flow improvers just so the diesel fuel can be sold. These cold flow improvers also have a diminishing rate of return (the second ounce of additive does not have as much impact as the first ounce).

A diesel fuel that has had a cold flow improver added at the refinery will not be able to take full advantage of the degree-lowering properties that Diesel Plus can provide due to this diminishing rate of return. In addition, increased amounts of biodiesel also take a toll on the cold flow characteristics of diesel fuel.



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DIESEL PLUS® FUEL CONDITIONER (CONT.)

The ignition delay is the time period between the start of injection and start of combustion (ignition) of the fuel. The higher the Cetane Number, or CN, of the diesel fuel, the better your engine will perform because higher cetane fuels will have shorter ignition delay periods than lower cetane fuels.

Cetane Number (CN)

A measurement of the fuel's ignition delay and is another variable that affects the quality of fuel.

Diesel fuels with a low CN can cause:

- Rough engine operation
- Difficulty starting, especially in cold weather or at high altitudes
- Accelerated lube oil sludge formation
- Increased engine deposits resulting in more smoke
- Increased exhaust emissions
- Loss of performance and mileage

Increasing the CN with Diesel Plus will provide:

- A quicker, more uniform ignition
- Smoother engine operation
- More power
- Faster starts
- A quieter running engine
- Reduced emission
- Reduced smoke and odor
- Reduce the likeliness of premature combustion
- Improved performance and mileage

Although the minimum specification number for cetane in the United States is 40, the diesel fuel you use will vary and will usually be in the range of 38-42. A CN from 43-47 can be considered a premium diesel fuel. At the winter treatment rate, Diesel Plus can increase a regular diesel fuel to a premium diesel fuel.



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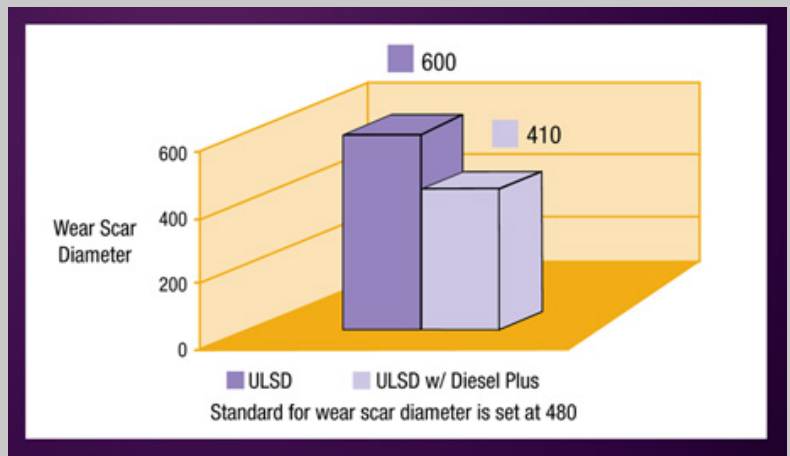
DIESEL PLUS® FUEL CONDITIONER (CONT.)

With ULSD, the process that removes the sulfur from the fuel also robs the fuel of its lubricity. This is an issue as the high pressure pumps and injectors rely on the lubricity of the diesel fuel for their only source of lubrication. Lower levels of lubrication result in more wear and a shorter life expectancy of the fuel system components. Conklin's Diesel Plus employs an additive to improve the lubricity and bring it to a level underneath the specification, as discussed in the chart below.

Ultra-Low Sulfur Diesel HFRR Test Results - ASTM D6079

The High-Frequency Reciprocating Rig (HFRR) lubricity test measures the lubricating capabilities of diesel fuel. A smaller wear scar diameter means better lubrication.

The chart to the right shows that Diesel Plus improved lubrication over 30% compared to untreated ultra-low sulfur diesel fuel at just the summer treatment rate. This means longer injector and fuel pump life, less maintenance costs, and less downtime for you when you use Diesel Standard for wear scar diameter is set at 480 Plus.



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