

LUBE

TECHNI-GRAM



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Even Diesel Fuels Marketed As “Premium” Need Fuel Improvers

Diesel fuel additives are simply chemicals that change the properties of untreated diesel fuel.

The biggest users of additives are refineries and distributors. Each batch of crude oil is different from the next, and each batch of refined diesel fuel is different from the next. Refineries and distributors use additives in bulk to make their diesel fuel more consistent before they sell it. This is called the “pipeline specification”.

You can see more use of additives in “premium” grade diesel. In 1999, the NCWM (National Conference on Weights and Measures) defined five properties of diesel fuel and set standards for “premium” diesel. The refiners and distributors use additives in bulk to improve the fuel so it meets one or more “premium” standard.

IF THE REFINERS & DISTRIBUTORS USE ADDITIVES IN BULK, WHY ARE FUEL IMPROVERS NEEDED?

- You have to use fuel improvers because there are additives that refiners & distributors don’t use.

The first additive that an equipment owner wants is a water remover. Water enters fuel at refining, transport, storage, and engine operation. ASTM has specs for maximum amounts of water in diesel fuel. Suspended water in diesel fuel hurts combustion, lowers energy content, fouls injectors, wears out pumps, abrades injector tip needles, and causes gum and varnish. In cold weather, water ices up and blocks fuel lines. Water can separate into oxygen and hydrogen, and combine with fuel to create sulfuric acid. Rarely will you see a water remover as an additive in standard fuel or premium fuel because ppm (parts per million) of water changes daily. The only way to get water separation is with a fuel improver.

- Fuel improvers are needed because refiners & distributors don’t use enough quantity.

The refiners and distributors treat their regular grade fuels enough to make them consistent from batch to batch, or at least fairly consistent. But “consistent” doesn’t mean “good”. Impartial national organizations like ASTM (American Society for Testing and Materials), NCWM, TMC (The Maintenance Council of the American Trucking Associations) and EMA (diesel Engine Manufacturers’ Association) all have specifications for “good” fuel that go above and beyond regular grade fuel.

- Fuel improvers are needed because refiners & distributors don’t use enough kinds of additives.



... to keep it running

I mentioned above that NCWM defined five properties of diesel fuel and set standards for calling it “premium”. The five properties are **energy content**, **cetane number**, **low-temperature operability**,

thermal stability, and **fuel-injector cleanliness**. Does a trucker get good energy content, cetane number, low-temperature operability in certain months, thermal stability, and fuel-injector cleanliness if he buys a “premium” fuel? Not necessarily. A refiner or distributor can call it “premium” fuel if the fuel meets any two of the five standards. Low-temperature operability does not apply in most months and in many locales, so a “premium” fuel assures a trucker or equipment operator of only one standard.

Fortunately, thanks to **SWEPCO 501 Premium Diesel Fuel Improver**, customers can reap all of the benefits of *premium* diesel fuel and be assured of **consistent performance** as they control the addition of **SWEPCO 501**’s performance enhancing additives to their storage or saddle tanks. Here are a few of the many benefits **SWEPCO 501 Premium Diesel Fuel Improver** offers:

Improved Ignition Quality of Any Diesel Fuel – Raises the cetane number of any diesel fuel. How much it increases the cetane number is directly related to the base cetane number of the fuel. The higher the starting cetane number, the more the cetane number is improved:

- Example – an average fuel with cetane of 44 will be boosted to approximately 47.5.
- Example – a California fuel of 50 cetane will be boosted to about 54.

Improves Fuel Economy – Improves mileage as much as 4% to 13.5% depending on type of engine and service.

Reduces Regulated Diesel Exhaust Emissions – Reduces levels of hydrocarbons, carbon monoxide, nitrogen, oxide and particulate matter an average of 40%.

Improves Storage Stability – Reduces sludge and other insolubles formed as a result of fuel oxidation by more than 80%.

Keeps Injectors Clean for Better Fuel Ignition – Clean injectors ensure proper fuel atomization for better combustion, more power and lower emissions. The EMA sets passing limits for detergency using the Cummins L10 injector deposit test requiring a CRC rating of 10 or less (out of 100) and flow loss of 6% or less...SWEPCO 501 rates a 9.1 with less than 5% flow loss.

Prolongs Life of Injectors and Pumps – Improved fuel lubricity means less wear and longer injector and injector pump life even when using today’s abrasive low-sulfur fuels. SWEPCO 501 passed ASTM’s D6078 BOCLE Wear test with flying colors, even with greater than 26% load increase.

Easier Starting – Makes cold starting easier, lowers minimum cold-start temperatures, improves both warm-up time and driveability before warm-up and reduces white smoke produced during warm-up. The use of **SWEPCO’s Winter formula 501 Premium Diesel Fuel Improver** assures performance in even lower temperatures.