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Diesel fuel additives are chemicals added to diesel fuel for the purpose of changing its properties for several purposes, as discussed below. The biggest users of these additives are refiners and distributors mainly to make diesel fuel compliant with pipeline specifications and to set the standards for premium-grade fuel. There are also additives designed for the consumer market, which come in handy bottles instead of barrels, although their ingredients are the same as those for the industrial market.

Not all diesel fuel additives work as well as expected, however, so it is important to distinguish those that work from those that do not. Keep in mind that all of the following aspects of good additives have equal importance so try to find a product that provides for a good balance between all of these factors.

Water Control

Expert mechanics and motorists know that water in diesel fuel should be avoided since it adversely affects the engineâ€™s optimum performance. Water comes in through several ways including condensation, from the fuel pumps, and from environmental leaks. The removal of water in diesel fuel can be achieved by using the right diesel fuel additives.

We do not suggest alcohol-based additives because it breaks up the water, which leads to water molecules over 4 microns in size. At this size, the water molecules become too aggressive for the diesel injector tip, thus, adversely affecting its performance and safety.

Instead, we suggest looking for diesel fuel additives that breaks down the water. The water molecules are then broken down into smaller molecules â€“ about 1 micron in size - that can then be burned by the system. During combustion, these water molecules will be passed out as steam via the tailpipe.

Lubrication

The lubricity of diesel fuel is now a major concern among motorists because of the Ultra Low Sulfur Diesel (ULSD), which has increasingly become lower from 5000ppm to 15ppm. Although ATF is still widely used, it is actually not recommended because of its ash residue that can damage filters and converters.

The best option then is one of the ash-less diesel fuel additives. This way, no ash residues can damage the engine fuel system including its injectors and fuel pumps because of its increased lubricity.

Cleaning Action

The best Diesel Fuel Additives have a detergent action in that it keeps the fuel system as clean as possible from carbon deposits, among other things that clog the system. For example, the injector tips may be clogged or the rings have carbon deposits.

Just make sure that the additive works slowly rather than quickly when it comes to cleaning action. The slower it cleans, the better it can clean gently.

Anti-gelling Action

Fuel has a so-called pour point and cold filter plug point. The pour point is the temperature where fuel laden with wax will barely flow through the system while the cold filter plug point pertains to the fuelâ€™s ability to continue flowing even in cold temperatures. The best diesel Fuel Additives then should lower the pour point and the cold filter plug point by a certain number of degrees in temperature.

If you find diesel fuel additives that comply with all of the above mentioned properties, we suggest sticking to these products, in a manner of speaking.

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