



X-1R Global Ltd

To: All X-1R distributors

From: Nigel (Mac) McKenzie

Cc:

Date 5th June 2013

Subject: X-1R Diesel System Cleaner, the why question answered

I have had a couple of questions on why we are introducing an Ultra Concentrated Diesel System Cleaner and how does this product differ from the Diesel System Treatment that we are currently marketing.

In various countries around the world there has been a slow but steady move from Diesel to low sulphur diesel (Sulphur @ 500ppm) and now to ultra-low sulphur diesel (Sulphur @ 50ppm), this has created a lot of problems and rumours in the market place, specifically, the fear that ULSD has a lower lubricity and cetane rating, which could affect pre-2007 diesel engines and fuel systems. The Sulphur in the Diesel acts as a lubricant and does not burn, instead it enters the atmosphere as Sulphur Dioxide and ends up as acid rain.

Major oil companies have assured us that the proper lubrication formulas are now added and mixed before the fuel we use ever makes it to the pump. Still, many aren't convinced this is the case, as a lot of folks in the pickup segment, and especially those in the trucking industry, noticed a decrease in fuel economy once ULSD became our nation's primary diesel fuel.

The Importance Of Cetane

Diesel engines will operate fine on any cetane rating between 40 to 55, but the higher the number, the shorter the ignition delay is, and the more complete and efficient the combustion cycle becomes. In our research we found that cetane numbers in ULSD fluctuates in the range 40 to 45 cetane. And coinciding with what we've seen, with inconsistencies in cetane ratings at the pump, many diesel owners experience fluctuating fuel mileage.

The truth is that most modern diesels can and will run on a range of cetane ratings, in fact this is one of the beauties of the diesel engine, however, there will be a marked reduction in fuel efficiency and a reduction in parts life particularly in the combustion side of the engine.

During the refinement of ULSD, fuel is flooded with hydrogen to remove sulphur, but in the process also removes much of the fuel's lubrication properties, as well as cetane content. This leads to many things, but we're focusing on the fact that cetane numbers aren't consistent. This means each time you fill up at your local station, the quality of fuel is different.

The Importance Of Lubricity

Another reason ULSD has been blamed for premature fuel system and engine wear is due to its low sulphur content. At 15 ppm (out of 1 million parts, just 15 can be sulphur), ULSD contains only a fraction of the sulphur concentration found in the previously used low-sulphur diesel (LSD), which was roughly 500 ppm. And since sulphur acts as a lubrication agent in diesel fuel, ultra-low sulphur content in ULSD is thought to be one of the main suspects in causing fuel-related problems in pre-2007 diesels, which were designed to run primarily on LSD.

Bio-mass additives

Frequently there is more and more Bio-mass being added to the fuels that we are pumping throughout the region. This may seem like a good environmentally friendly thing to do but when it comes to your vehicle there are some reasons for concern. If you allow any diesel fuel to sit around in storage there will be some oxidisation occurring which will allow the formation of gums. In addition to this the biomass added to diesel is naturally hygroscopic, normal fuels will absorb approx. 60ppm water whilst bio-fuels will absorb up to 1500ppm water. In addition to this you will normally suffer about a 10% drop in calorific value of the fuel.

Enough bad news yet?

I hope so! Recently I heard of a sales-rep from a major oil company telling consumers that they should put a beaker of cooking oil into their fuel tanks each time they filled up to make their diesel engines run smoother, now that is what I call an opportunity! The new X-1R Diesel System Cleaner has been specifically formulated to be a low cost solution without compromising the quality of the promise we deliver. The product will effectively clean and lubricate and protect the entire combustion side of the engine, it will clean away all gum, water, varnish, particulate contamination and old carbon deposits, whilst effectively lubricating fuel pumps and injectors.

I hope that this article goes some way to explaining the benefits of our new product.

Nigel McKenzie
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