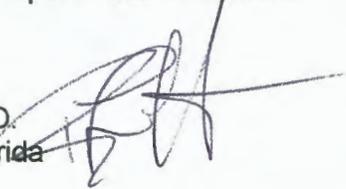


Gamma 88 Product Description and Evaluation

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Gamma 88 is a fuel and oil additive which when used as directed in a diesel engine will improve emissions and fuel economy and reduce wear in the engine. Gamma 88 is a unique product developed through the application of ester chemistry.

Gamma 88 does not directly affect the combustion of a diesel engine and therefore differs from other fuel additive products. The improvements in emission, fuel economy and wear are the result of improved lubrication of the upper cylinder walls when Gamma 88 is added to the fuel and improvement in bearings, cam and pump wear when introduced into the lubricating oil.

Gamma 88 is a proprietary mixture of short chain and long chain esters. The short chain esters remove carbon deposits over time and the long chain esters improve the lubrication of the engine.

The cleaning action of esters is well established in polymer chemistry. The short chain esters will dissolve the carbon and varnish buildup on the injectors, valves and piston crown. The spray pattern of the injectors is improved, the air flow past the intake valves is improved and the exhaust flow around the exhaust valves is improved and finally the flame front propagation across the cylinder is improved. All of these improvements enhance the combustion process and lead to reduced emissions. Consistent use of Gamma 88 will prevent the formation of the carbon and varnish deposits.

More significantly the long chain polyol esters survive the combustion process and are attracted to the cylinder walls, significantly reducing the friction between the piston and piston rings rubbing against the cylinder walls. It is well known that approximately 70% of the friction in an IC engine is caused by the rubbing of the piston skirt and rings against the cylinder wall. Reducing this friction releases the saved energy to be used as increased horsepower at the crankshaft or improved fuel economy.

Esters are a polarized molecule. The polarity causes the esters to be attracted to each other, thereby forming strong chains which do not break down easily in the presence of high temperature. An ester based lubricant has a higher flash point and a lower evaporation rate than similar weight lubricants.

Also the polarity of the ester molecule causes the molecule to be attracted to the oppositely charged cylinder wall. This attraction caused the ester to migrate to the cylinder wall and attach tightly significantly increasing the lubricity.

Poyol esters have a unique feature when compared to other esters. They do not have hydrogen atoms on the beta-carbon molecule. Since the hydrogen atom is missing the poyol ester has a much high vaporization temperature and it survives the combustion process. The polyol esters found in Gamma 88 exhibit a 200 degree F improvement in vaporization temperature over other similar weight lubricants.

The major negative aspect of using esters in the fuel and the lubricants is the cost of manufacturing these esters. The result is an expensive product. However, with the current cost of diesel fuel the savings are significant. In addition to the direct savings from the fuel economy, Gamma 88 consistently used in both the fuel and the oil will lengthen the time between rebuilds.

Gamma 88 has been extensively tested in laboratory experiments and control field tests and consistently shows a fuel economy improvement of 7% and a significant reduction in CO and particulate emissions.