DieselTech
ENGINE SOLUTIONS
A Megatrol Company

What is FE26 Premier™

First of all, I would like to explain how Metal Conditioners work and why they are such a great asset to daily operations of engines, gearboxes and hydraulic systems.

Motor oils, transmission fluids, hydraulic Oils and gear oils are flowing lubricants that provide a film barrier between metal surfaces pressing or rubbing together. The greater the film strength, or EP rating, the better the oil and or lubricant. However, in extreme pressure metal-to-metal areas, the film strength of oil is seriously thinned and is often completely squeezed out due to clearances and sub-micron barriers that create heat and friction.

A quality Metal treatment is designed to interact with metal surfaces in a molecular and chemical process to create a protective buffer on the surface of the metal. This is not a film or coating over the metal. Molecules in the metal treatment are polarized and actually bond with the metal surface. The layer of Metal Treatment molecules is activated by extreme pressure and heat, meaning that the metal treatment performs best right where it is needed most! The result are significantly reduces harmful friction and heat.

High oil temperatures accelerate oxidation of the engine oil and the formation of acids, peroxide, carbon residue, sludge and varnish formations. As oil temperature rises, oxidation takes place, the oil becomes increasingly corrosive, and oil viscosity decreases resulting in a loss of lubrication. Certain metal conditioners help reduce heat so that the oil can maintain maximum protection, performance, and film strength.

It is important to know what your Metal Conditioner contains and what is does not contain such as harmful chemicals, Teflon's, Metal or Plastic Elements found in most of today's technologies.

- PTFE's or Teflon is a great product but not for an extreme pressure application such as an engine. But metal-to-metal contact can cause flakes that are not a safe option for engines applications. Be careful with products based on this technology. Clogging of essential filters and lubrication flow can become a serious problem. PTFE resins can leave harmful deposits and residue. Solid particles also break down with heat rather than helping reduce temperatures.
- Unstable chlorinated-paraffin ("CP") presents the potential for corrosion when heated. Chlorinated Paraffin lubrication is very effective, but in the heated conditions of an engine, the short-chain molecular properties (C10/C13) can break down, forming hydrochloric acids which in return mix with the engine oil creating pitting, corrosion and oxidized metals.
- Solvents can also be known as lubricants. They generally contain mineral oils, which decrease the viscosity of the flowing lubricant. Solvents may be cleaners, and a cleaner engine offers some improvement in performance, but solvents or cleaners do not provide lubrication protection and or film strength (EP additives) and can change the viscosity of the motor or gear oil. More importantly solvents breakdown lubricity and can cause heat.
- Viscosity Stabilizers, sometimes replacing a gallon or more of oil do not contain the essential additive packages in today's premium motor oils and are actually robbing the engine of those cleaning and anti-oxidant benefits. Although these stabilizers are a great option for reducing oil consumption, they can cause damage if changing the physical properties of the engine oil.

- Boron, Zinc, and Graphite technologies do not provide extreme pressure friction protection. They break down rather than provide protection from harmful heat and can introduce harmful solid particles into the lubrication system of the engine.

The difference between FE26 Premier™ and other Products

Many products on the market place are synthetic reagent with reactive ions targeted toward ferrous-based metals. Their action is through carbon diffusion of ionic atoms into ferrous atomic spacing. They work by using short-chains molecule structure (C_{10}-C_{13}) even bonded, to achieve its final results of treating the metal. During their reactive cycle the load zone of ferrous based metals are affected in direct proportion to the amount of Time (T)x Heat (H)x Pressure (P) derived in any given friction/ferrous environment.

Although there are many Metal Treatments on the market today, technology has come a long ways in the last 3 years and some new advances have risen to achieve optimal results without reducing reliability. Most products have no additive packs or detergent packs of any sort. Most Metal Treatments have 5 main properties in their physical makeup; none of these properties are the same physical properties as engine, gear or hydraulic oils. Current lab testing results show that when adding Chlorinated Paraffin or Chlorinated Olephins to a base engine oil, no physical damage will occur, but chemical makeup of the oil will change allowing OEM specs of Phosphorus, Zinc, Magnesium, Calcium and other important detergents to be reduced by volume, which in return will not pass OEM factory specs. Also these types of additives can cause acid formations which in return, cause internal component damage and pitting.

A new formulation has come into play called **FE26 Premier™** (Metal Treatment) which is designed using medium to long chain molecule structures (C_{14}-C_{17}) double bonded, to achieve better results than its predecessors on the market place. **FE26 Premier™** has added stabilizing anti-oxidant formulation and very unique metal deactivators to assure that **FE26 Premier™** performs well in engine applications and gear oils applications not changing the chemical make up of the oil the **FE26 Premier™ is** being added to. The oil acts like a delivery truck carrying the **FE26 Premier™** to the asperities of the metals and forming a covalent, galvanic bond to the metal allowing a 5 to 8 micron penetration into the metal, creating a smooth less friction absorbing metal. **FE26 Premier™** does not layer the metal or put a film over the top of the metal, **FE26 Premier™** penetrates into the metal working with ferrous particulates within the oils environment, treating the metal, not the oil.

FE26 Premier™ has been ASTM tested and also independently tested to assure our product works. With over 20 ASTM and SAE test being performed on FE26 Premier™, end users in the Automotive, Trucking, Mining, Marine and Rail industry can rest assure that FE26 Premier™ is working hard to reduce down time maintenance. Utilizing today's extreme work environment, FE26 Premier™ has been used in Diesel Engine applications, Gasoline Engine applications as well as gear box and manual transmissions. Reducing frictions means reducing heat, which in return you will see more productive equipment with less chance for a mechanical failure.

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