SINCE 1839 Schaeffer MANUFACTURING COMPANY

ISO 9002 CERTIFIED

TECHNICAL DATA

102 Barton Street, St. Louis, Missouri 63104
In-State (314) 865-4100/Out of State 800-325-9962/Fax (314) 865-4107 http://www.schaefferoil.com

#137AND DIESEL TREAT 2000 WITH FLOW IMPROVER

Application:

Diesel Treat 2000 With Flow Improver is a multifunctional, ashless, all season fuel additive that is specially formulated for use with all types of diesel fuel, especially low sulfur and ultra low sulfur diesel fuels.

Features and Benefits

Diesel Treat 2000 With Flow Improver contains a highly concentrated multifunctional additive package, which allows the product to provide the following performance benefits when, used at the recommended treatment ratio.

1. Improvement of the fuels cetane rating up to four points.
2. Easier cold weather starting.
3. Reduced misfiring at lower air inlet temperatures.
4. Faster warm-up.
5. Superior Cummins L-10 Injector Depositing Test and Cummins N-14 Injector Corrosion Test Performance.
6. Detergency to provide cleanliness throughout the entire fuel system.
7. Clean up and keep clean performance for the entire fuel system.
8. Dispersion of insoluble gums and varnish present in low quality fuels.
9. Excellent deposit control for light duty and medium duty in-direct injected diesel engines.
10. Improved combustion of the fuel by completely vaporizing the fuel into smaller particles, thus providing better fuel economy and preventing a significant loss in engine power.
11. Improved fuel economy up to 5%.
12. Modification of existing injector deposits, allowing for their removal and safe passage into the combustion chamber where they can be burned.
13. Reduced emissions exhaust smoke and particulates.
14. A reduction in black smoke.
15. Excellent anti-wear protection for injectors and fuel pumps, especially for those engines burning low sulfur diesel fuel and ultra low sulfur fuel.
16. Supplemental ring and valve-train anti-wear protection.
17. Lubrication of the upper cylinders, fuel pumps and injectors.
18. Increased thermal stability to the diesel fuel in order to provide the ability to resist thermal degradation.
19. Inhibition of oxidation during storage
20. Extended storage stability

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21. Helps control the acidic by-products produces by the combustion of diesel fuel.
22. Rust and corrosion protection to the entire fuel system.
23. Dispersion of water present in diesel fuel in order to prevent fuel icing and other problems associated with water.
24. Helps control the conditions that lead to foul smelling fuel, stringiness and plugged filters.
25. Prevention of the formation of stable fuel-water emulsions.
26. Flow improver to lower the fuel's gelling point.
27. Allows the diesel fuel to meet the NCWM's Premium Diesel Fuel Specifications.

Diesel Treat 2000 With Flow Improver also contains a proprietary wax crystal modifier, cold flow improver, heavy wax modifier polymeric type additive **system that when added to the diesel fuel before the fuel has reached its cloud point**, helps to prevent the formation of wax crystals. The proprietary polymeric additive system modifies the individual wax crystals by encapsulating and dispersing them as they are formed. This not only drastically reduces the size of the wax crystals, but also prevents the growth of larger wax crystals and their adhesion to each other. This in turn allows the wax crystals to flow through the fuel filters and lines and into the combustion chamber with the fuel. **By the addition of Diesel Treat 2000 With Flow Improver to the diesel fuel before it has reached its cloud point, the gelling point of the diesel fuel will be lowered an average of 10°F to 25°F below the original gelling point of the untreated diesel fuel.**

Increased Lubricity Protection with Synshield™

Today's diesel powered vehicles feature low emission engines that are more susceptible than ever to diesel fuel related wear. Diesel engine designs are employing the use of higher fuel injection pressures, hotter fuel return temperatures, higher operating temperatures and complex engine geometry to control emissions. All of these factors result in increased fuel system wear and can shorten engine life.

With the mandate by the United States EPA to reduce the sulfur content of diesel fuels to control emissions, this has resulted the elimination of certain naturally occurring polar compounds that aid in protection of the fuel system from wear by forming a protective layer on the metal surfaces fuel injection system. The increased use of the hydrotreating and hydrocracking refining processes to reduce the sulfur content of the diesel fuel in order to meet the mandated sulfur content of 500 ppm and the 2006 ultra-low sulfur diesel fuel specification of 15 ppm maximum causes these naturally occurring polar compounds to become either chemically altered or completely removed, thus resulting in increased engine and fuel system wear.

To protect today's diesel engines from fuel system related wear Schaeffer Mfg has further blended into the Diesel Treat 2000 No Dye is a proprietary lubricity additive called Synshield™. Synshield™ is one of the few lubricity additives that not only surpasses industry standards for diesel fuel lubricity but also exceeds the EPA's new standard by being the only lubricity additive that does not contain sulfur or sulfur containing compounds. Synshield™ prevents fuel system wear and injector scoring by forming a protective layer on the metal surfaces of the fuel system and injectors that provides boundary lubrication between metallic parts in critical fuel system components. This protective boundary lubrication film not only reduces friction and wear between the fuel system surfaces that are in relative motion but also increases fuel system component life, thus leading to less downtime and increased longer equipment life.

TREATMENT RATIO

One gallon of Diesel Treatment 2000 With Flow Improver to 1,000 gallons of diesel fuel.

When treating Ultra Low Sulfur Diesel Fuels additional treatment may be necessary for improved winter operability. Treatment rates may need to be doubled or tripled.

Diesel Treat 2000 With Flow Improver is registered for use and meets the US EPA requirements for blending into low sulfur diesel fuels and ultra low sulfur diesel fuels. When used at the recommended treatment ratio, Diesel Treat 2000 With Flow Improver will not cause a measurable increase in the sulfur content of the diesel fuel and will not have any measurable affect on the cetane index or aromatic content of the diesel fuel.

THIS DIESEL FUEL ADDITIVE LESS THAN 15 PPM OF SULFUR AND COMPLIES WITH THE FEDERAL LOW SULFUR CONTENT REQUIREMENTS FOR USE IN DIESEL MOTOR VEHICLES AND NON-ROAD ENGINES.

THIS DIESEL FUEL ADDITIVE IS COMPATIBLE AND APPROVED FOR USE WITH DIESEL FUELS THAT MEET ASTM D975 AND BIODIESEL THAT MEETS ASTM D6751 AND BIODIESEL THAT MEETS EN 14214.

TYPICAL PROPERTIES

Specific Gravity	.9037
Flash Point °F/°C PMCC (ASTM D-93)	124°/51°
Pour Point °F/°C (ASTM D-97)	<-40°/<-40°
Ash Content %wt (ASTM D-482)	0
Copper Strip Corrosion Test (ASTM D-130)	1a

Packaging: #137AND Diesel Treat 2000 With Flow Improver is available in 275-gallon totes, 55-gallon drums, 30 -gallon drums 5-gallon pails and 4-1gal/cases.