



## TECHNICAL DATA

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### #137ND DIESEL TREAT 2000™ ULTRA LOW SULFUR

#### Application:

Diesel Treat 2000™ Ultra Low Sulfur is a multifunctional ultra low sulfur compliant diesel fuel additive that is specifically formulated to provide improved fuel efficiency, increased power, increased fuel lubricity, improved injector cleanliness, improved protection against moisture and improved fuel stability. Diesel Treat 2000™ Ultra Low Sulfur provides clean-up and keep clean performance, as shown by the Peugeot DW-10 Injector Depositing Test, throughout the entire fuel system.

Diesel Treat 2000™ Ultra Low Sulfur can be used in all types of diesel fuel including low sulfur diesel fuel and biodiesel blends.

#### Features and Benefits

Diesel Treat 2000™ Ultra Low Sulfur contains a highly concentrated multi-functional additive package, which allows the Diesel Treat 2000™ Ultra Low Sulfur to provide the following performance benefits when used at the recommended treatment rate.

1. Improvement of the fuels cetane rating up to 4 points.
2. Easier cold weather starting and reduced misfiring at lower air inlet temperatures.
3. Faster warm-up.
4. Clean-up & Keep clean performance proven in the Peugeot DW-10 Injector Depositing Test
5. Superior Cummins L-10 Injector Depositing Test and Cummins N-14 Injector Corrosion Test Performance.
6. Dispersion of insoluble gums and varnish present in low quality fuels.
7. Excellent deposit control for light duty and medium duty in-direct injected diesel engines.
8. 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.
9. Improved fuel economy up to 5%.
10. Modification of existing injector deposits, allowing for their removal and safe passage into the combustion chamber where they can be burned
11. Reduced emissions, exhaust smoke, particulates and black smoke.
12. Excellent anti-wear protections for injectors and fuel pumps.
13. Supplemental ring and valve-train anti-wear protection.
14. Lubrication of the upper cylinders, fuel pumps and injectors
15. Increased fuel thermal stability to resist thermal degradation.
16. Inhibition of oxidation during storage which extends storage stability
17. Rust and corrosion protection to the entire fuel system

Coupled with this multifunctional additive package is a non-alcohol jet fuel deicer/water dispersant which eliminates the problems associated with entrained and/or dissolved water present in the fuel by dispersing the water into tiny droplets. These tiny droplets are suspended in the fuel so they can be carried with the fuel in controlled amounts through the fuel filters, fuel lines, and into the combustion chamber to be burned with the fuel. Because the remaining water is dispersed and suspended in the fuel, Diesel Treat 2000™ Ultra Low Sulfur prevents the formation of stable fuel-water emulsions.

### **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.

The mandate of the United States EPA to reduce the sulfur content of diesel fuels to control emissions has resulted in the elimination of certain naturally occurring, polar compounds that protect the fuel system from wear by forming a protective layer on the metal surfaces of the fuel injection system. The increased use of the hydrotreating and hydrocracking refining processes to produce the maximum 15 ppm ultra low sulfur diesel fuel causes these naturally occurring polar compounds to become either chemically altered or completely removed which leads to increased engine and fuel system wear.

Diesel Treat 2000™ Ultra Low Sulfur is blended with Schaeffer's proprietary lubricity additive, Synshield™ to protect today's diesel engines from fuel system related wear. Synshield™ surpasses industry standards for diesel fuel lubricity; and is the only lubricity additive that does not contain sulfur or sulfur containing compounds to exceed the EPA's new standard. Synshield™ prevents fuel system wear and injector scoring by forming a protective layer on the metal surfaces of the fuel system and injectors and 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 longer equipment life.

#### **TREATMENT RATIO:**

One gallon of Diesel Treat 2000™ Ultra Low Sulfur to 2,000 gallons of fuel.

Diesel Treat 2000™ Ultra Low Sulfur is registered and meets US EPA requirements for blending into low sulfur diesel fuels. When used at the recommended treatment ratio, Diesel Treat 2000™ Ultra Low Sulfur will not cause a measurable effect on the cetane index, sulfur content or aromatic content of the fuel.

**THIS DIESEL FUEL ADDITIVE 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	0.900-0.940
Flash Point °F/°C (PMCC) (ASTM D-93)	135°-144°/57°-62°
Pour Point °F/°C (ASTM D-97)	<-50°F/<-45.56°C
Ash Content % wt (ASTM D-482)	0
Copper Strip Corrosion Test (ASTM D-130)	1a
Sulfur Content ASTM D-7039	<15 ppm