



ProTecta Synthetic Fuel System Treatment

No fuel system treatment does more for your car than ProTecta. That's because ProTecta complete Fuel System Treatment is the only double-acting super concentrate on the market today. ProTecta has advanced synthetic cleaners for injectors, carburetors, and combustion chambers that clean 95% of new in only one tank full.

ProTecta contains special friction modifiers to provide a real mileage improvement even on new cars! The friction modifiers migrate from the fuel and into the motor oil. They work with the motor oil in the critical area on top of the pistons where only splash lubrication is present. You can expect a 3-4 % mileage improvement on new cars and even greater on older cars. With high fuel prices and the poor quality of today's fuel ProTecta is the answer for maximum efficiency.

BENEFITS:

- Reduces Friction Wear
- Better-than-new fuel economy mileage improver
- Restores power and acceleration
- Eliminates pinging and knocking
- Controls octane requirement good operation on lower quality fuels

ProTecta Complete Fuel System Treatment is a very unique product that needs some understanding in its use. ProTecta Fuel System Treatment is the most concentrated product on the market today. So much so, one bottle will clean not only injectors, but combustion chambers to 95% of new in one tank full. Other products only clean injectors and it can take several bottles.

Not only is ProTecta Fuel System Treatment the most concentrated product on the market for cleaning, it also has a positive affect on new vehicles. ProTecta Fuel System Treatment contains a special friction modifier that once put into the fuel gravitates into the top end of the engine and its oil. In other words, ProTecta Fuel System Treatment provides lubrication in a very tight tolerance area, where only splash lubrication from the motor oil is provided. The special friction modifier works the entire oil change and reduces friction so much it improves mileage 3-4% in extensive fleet testing. This is not only in older cars but brand new cars as well. A major oil company has confirmed this product's results.

So for improved mileage and keeping injectors and combustion chambers their cleanest, put a bottle of ProTecta Complete Fuel System Treatment in your gasoline each time you change your motor oil for optimum results. With the high price of fuel ProTecta will save you money.

Unscrew outer blue safety lid, puncture foil seal, and screw on the unique, no mess, flexible spout, provided with the bottle of ProTecta Fuel System Treatment. Place pour spout into petrol tank and pour entire contents into fuel. For best results use when fuel tank indicator is at one quarter (1/4) full. After pouring in contents fill tank to full with petrol. Do not refuel until the fuel tank indicator is back at one quarter (1/4) full. This allows the contents to work with one tank to fuel. Each twelve 360 mLbottle will treat 75 litres of fuel. For optimum results, use every 6500 kilometers of driving.



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Question:

How Does SFR ProTecta Fuel System Treatment Work?

Answer:

The fuel efficiency of an engine is influenced by a number of factors. No internal combustion engine is 100% efficient in converting the energy of the fuel into power to move the vehicle. Energy is lost through the exhaust, coolant, through radiation as heat and through friction between moving parts. These frictional losses can account for up to 38% of the total energy in the fuel with nearly one half of this loss coming from pistons, rings, and cylinder walls.

Some of the reason for the huge contribution of the pistons, rings, and cylinder walls to the frictional losses relative to their contact surface areas is that these areas are not directly lubricated by oil passages. The crankcase lubricant is splashed, and in some cases sprayed, on the underside of the piston and ring area. Very little if any lubricant ever reaches the top, or compression, ring. This is why you will want to use SFR ProTecta Engine Treatment and SFR ProTecta Fuel System Treatment for maximum results.

Question:

Why does the mileage improvement you advertise last an entire oil change, what does the oil have to do with a fuel improvement?

Answer:

ProTecta Fuel System Treatment is engineered for addressing two different areas to improve mileage. First, the polyetheramine is an aggressive synthetic detergent that not only cleans injectors but cleans combustion chambers as well. ProTecta offers clean up to 95% with only one tank full. Most all competitive products require several bottles to achieve this level of cleanliness. Clean injectors and combustion chambers allow for maximum mileage.

Improved mileage for older cars through cleaning is one thing, but ProTecta works on new cars as well. ProTecta has a special friction modifier that once put into the fuel tank actually gravitates into the motor oil and stays on top of the pistons where there is only splash lubrication. By reducing friction in this critical area, fleet testing has shown that a new car will achieve a mileage improvement 3-4%. A major oil company has tested this technology and has verified that the use of a friction modifier in a fuel system treatment will work the length of the oil change. Thus, for maximum results use ProTecta Complete Fuel System Treatment when you change your oil.

Question:

I used the ProTecta Fuel System Treatment but my car ran rough after using it, got any ideas?

Answer:

Yes, if you have a lot of miles on your vehicle, check your fuel filter. Since ProTecta cleans from tank to engine, and in only one tank full, you might need to change your fuel filter. Cleaning the system is good for your engine, and the fuel filter has captured a lot of the contaminants in the system. Once your fuel filter is changed you will see that performance will improve markedly.





ProTecta Synthetic Fuel System Treatment: Technical Overview

Performance is testing conducted by major oil companies leads us to believe that the next generation of additives will be those that work with or re-fortify the engine oil. This can be addressed on two fronts - fortifying the engine oil as SFR has engaged in for over 15 years, or considering fuel additives as "daily vitamins" for the engine oil. This gives us a new and challenging technical area for improving the performance and durability of modern automobile engines.

The piston and ring area is mostly a "boundary lubrication" area, where the oil film is very thin and the microscopic "high spots" of metal parts come into contact with other metal parts. The resulting friction in such areas is a major reason for inefficiencies that contribute to fuel consumption.

The design of the modern gasoline engine provides great opportunity for a fuel additive to assist the engine oil and function as a friction reducer. By introducing ProTecta® Fuel System Treatment into the fuel, it is delivered to the cylinder wall. This area of the engine will see the greatest improvement and the benefit is almost immediate.



The piston rings and cylinder wall regions are only marginally serviced by crankcase engine oil. The piston skirts and lower ring are sometimes targeted with an oil spray but often only receive splash lubrication from the crankcase. Engine manufacturers are also keeping the cylinder walls drier to prevent oil consumption, further reducing the lubrication in this area of high friction. To increase fuel economy based on the all out push by our government, engine manufacturers are forcing oil formulations to much lower viscosities. For example, reducing the viscosities from SAE 10W-40 to SAE 5W-30. With such thinner oils, and with engines operating at higher temperatures, oil film thickness is reduced and thus there is a greater chance for metal-to-metal contact to occur.

SFR's ProTecta® Fuel System Treatment enters into the oil sump via the piston rings, it can further assist in reducing friction in other parts of the engine as well. Based on the additive's ability to reduce internal friction, the

benefits for the consumer can include improved fuel economy and reduced wear. By using the SFR ProTecta® Engine Treatment along with the SFR ProTecta® Fuel System Treatment one can maximize results.

For those that wonder how a fuel additive can enter the engine oil, this phenomenon of additive entry into the oil has persisted throughout the development of fuel intake system deposit control additive, from the carburetor through fuel injection, intake valves and combustion chambers. To improve combustion efficiency, today's engines create a "swirl" effect, which mixes the intake charge. However, but because fuel additives do not tend to change direction as quickly as gasoline, the additives still impinge on the cylinder wall, where a thin layer of engine oil provides a convenient and safe landing spot. After a swipe from the piston rings, the additives are transported into the crankcase oil. Research has shown that approximately 25% of fuel additive put into gasoline finds its way into the crankcase oil.

The effects of fuel additives on oil performance have ranged from harmful to doing nothing, and today have even been found to be beneficial. While the public usually attributes engine oil performance solely to the oil put directly into the crankcase, it is possible to isolate the effects of fuel additives that make their way into the engine oil. SFR has been a leader in oil fortifiers for many years and now takes another step in reducing friction through a fuel system treatment.

- 1. Engine dynamometer tests have shown proven fuel economy.
- 2. Vehicle tests (modified Federal Test Procedure) have shown improved fuel economy.
- 3. Can improve/restore fuel efficiency of engine oil during the oil drain interval.
- 4. Can improve/restore fuel efficiency of engine oil in the first tank full.
- 5. Observed benefits independent of engine type or condition.

- 6. Reduces engine friction for improved fuel economy in the first tank full.
- 7. Improves fuel economy as shown in (modified) Sequence VI tests.
- 8. Reduces engine friction over the oil drain interval.

In addition to fortifying the engine oil to improve mileage SFR has developed a synthetic fuel system cleaner found in ProTecta® Fuel System Treatment to keep components working like new. This powerful fuel cleaner is designed to provide:

- 1. Control of carburetor, fuel injector, intake valve and combustion chamber deposits.
- 2. Restores lost power and acceleration.
- 3. Reduces valve stick in cold temperatures.
- 4. Control of octane requirement increase: Allows good operation on lower cost gasoline. No need to purchase Octane boosters.
- 5. Reduction of existing carburetor, fuel injector, intake valve and combustion chamber deposits.

SFR ProTecta® Fuel System Treatment is the most advanced fuel system product on the market today providing multiple benefits including fuel economy on even new cars!

ProTecta Synthetic Fuel System Treatment: ASTM Sequence VI Test

The **"Sequence VI test"** (a fuel economy test previously used in the lubricant industry) was modified to compare the economy of two different fuels - one with fuel additive and the other without. The tests revealed that the improvement in fuel economy from using the fuel additive was equal to that obtained by blending the ProTecta® Fuel System Treatment friction reducers into engine oil formulations.

This Sequence VI engine testing demonstrates the ProTecta® Fuel System Treatment concept. The results of the Sequence VI test show that ProTecta® Fuel System Treatment is effective in improving fuel economy. The immediate results show that the ProTecta® Fuel System Treatment is delivered in a very effective manner to an area of the engine, the rings and cylinder walls, that contribute a great deal of the internal friction in the engine. The aged results show that the ProTecta® Fuel System Treatment accumulated in the crankcase oil and provided additional benefits. This particular test is also a good indication that ProTecta® Fuel System Treatment will deliver good results in modern engines and new engines as most of the Sequence VI tests begin with a freshly rebuilt motor.

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This graph shows the results of three passenger cars motor oil formulations PCMO1 and one with SFR's ProTecta® Fuel System Treatment.

| ProTecta® Fuel System Treatment | % Gain at 135C Stage | Effective Fuel Economy Improvement |
|------------------------------------|----------------------|---------------------------------------|
| 300ml | 4.66% | 3.26% (EFEI) |

ProTecta Synthetic Fuel System Treatment: No Harm Testing

Although our extensive testing has shown that the new fuel additive chemistry in ProTecta® Fuel System Treatment can provide improved fuel economy as it gets into the engine oil, it is also important to know that this is accomplished without harming the engine. SFR ProTecta® Fuel System Treatment has passed a number of rigorous no harm tests and has demonstrated that its chemical integrity is maintained.

- 60 vehicle fleet test using a leading motor oil, gasoline treated with ProTecta® Fuel System Treatment and ran over 3 million miles trouble free.
- Trooper fleet test using a leading motor oil treated with ProTecta® Fuel System Treatment which ran for over 7 million trouble-free miles.
- Various elastomers or gaskets tested in liquid and vapor for 14 days showing no difference in density, swelling and hardness between base fuel and additised base fuel.
- Lubricity Additive Compatibility tests checking the filterability and sediment formation resulted in a pass at double the test duration and compatibility with engine oils containing Group 1 and Group IV base oils.
- Accumulation of the ProTecta® Fuel System Treatment can be accurately calculated using Fourier Transform Infrared Spectrometry (FTIR).
- Chemical integrity and oxidative stability demonstrated through Differential Scanning Calorimetry (DSC).

Cleans and Protects. Improves Performance and Fuel Economy – Even on New Cars



15 % Obstructed



Clean Fuel Injector



Dirty Intake Valve



Clean Intake Valve

Why Use ProTecta®? No Fuel treatment does more for your can than ProTecta®. That's because ProTecta® Fuel System Treatment is a double-acting super concentrate with cleaners and friction reducers that make your car run like new again. Cleans injectors, valves and combustion chambers. ProTecta's friction reducers migrate from the fuel into the motor oil, reducing friction and further improving your gas mileage, until the next oil change.

Use with complete confidence

and Peace of Mind: ProTecta's advanced synthetic formula is safe to use in engines requiring gasoline or petrol. ProTecta® is safe for all emission systems and increases the life of the system.

OVER 3% INCREASE IN FUEL MILEAGE 19% RED (As Demonstrated in Sequence VI Tests) WITH PR

19% REDUCED EMISSIONS WITH PROTECTA

