

BG Diesel Fuel Products

THE PROOF



Field Test Metropolitan Atlanta Rapid Transit Authority

BG DFC with Lubricity, Part No. 227, stopped accelerated corrosion that was occurring in underground fuel storage tanks of the Metropolitan Atlanta Rapid Transit Authority (MARTA). A MARTA technician documented each instance of the dispensing pump filter removal and inspection.



BG DFC with Lubricity, Part No. 227

Before treating fuel:

*The amount of corrosion shown here accumulated on dispensing pump filter within **one day**. The filter was then cleaned and reinstalled.*



After treating fuel for one month with BG DFC with Lubricity:

*The amount of corrosion shown here accumulated on dispensing pump filter after **27 days**. The filter was then cleaned and reinstalled.*



After treating fuel for three months with BG DFC with Lubricity:

The dispensing pump filter is clean and free of corrosion!



Rust Preventing Characteristics of Mineral Oil in the Presence of Water (Nace Test)

ASTM D665 (Modified)

With the removal of natural corrosion inhibitors in diesel from the hydrotreating process, rusting of steel diesel storage tanks has become an issue. The Nace test is a valuable tool in determining the ability of diesel to inhibit the rusting process when water, microbes and other contaminants are present in the tank.

The test involves using 300 mL of a test fluid mixed with 30 mL of synthetic sea water and immersing a cylindrical steel test rod conforming to Grade 10180 of Specification A 108 in the fluid. The fluid is stirred at 1000 rpm. The test temperature is ambient (72 °F) for gasoline and diesel, but is generally elevated to 140 °F for lubricants to accelerate the corrosion process. The standard duration of the test is four hours, but longer durations are also commonly used.

As the photos from the Nace test below demonstrate, BG DFC Plus will significantly slow or eliminate the corrosion process.



BG DFC Plus, Part No. 230



**Recommended for
rapid one-tank
clean up!**

BG 244, Part No. 244, quickly and effectively cleans diesel fuel injectors. It removes carbon deposits from combustion chambers, restores performance, smoothes engine idle and helps prevent costly repairs. In only a few short miles of driving, engine response is restored! One quart (946 mL) of BG 244 treats 20–40 gallons (75–150 Liters) of diesel fuel. To maintain fuel system cleanliness and engine performance, add BG 244 to fuel tank at 7,500 to 9,000 mile (12,000–14,500 km) intervals. Catalytic converter, diesel particulate filter and oxygen sensor safe.

**Recommended for
large vehicle
continuous cleaning
& bulk fuel treatment!**

BG DFC Plus, Part No. 230, diesel fuel conditioner keeps fuel system components and injectors clean, prevents fuel gelling, corrects nozzle fouling, reduces exhaust smoke and protects engine parts against rust and corrosion. It contains a lubricity agent for protection against low-sulfur diesel fuel. BG DFC Plus prevents entrained moisture from icing. It mixes readily with all diesel fuels and is an excellent fuel storage stabilizer. This diesel fuel additive complies with the Federal low-sulfur content requirements for use in diesel motor vehicles. Catalytic converter, diesel particulate filter and oxygen sensor safe. Contains no alcohol.

One quart (946 mL) BG DFC Plus treats 250 gallons (950 Liters) of diesel fuel. One gallon (4 Liters) BG DFC Plus treats 1,000 gallons (3,800 Liters) of diesel fuel.

**Recommended for
small vehicle
continuous cleaning!**

BG DFC Plus Easy Treat, Part No. 247, diesel fuel conditioner keeps fuel system components and injectors clean, prevents fuel gelling, corrects nozzle fouling, reduces exhaust smoke and protects engine parts against rust and corrosion. It contains a lubricity agent for protection against low-sulfur diesel fuel. DFC Plus prevents entrained moisture from icing. It mixes readily with all diesel fuels and is an excellent fuel storage stabilizer. This diesel fuel additive complies with the Federal low-sulfur content requirements for use in diesel motor vehicles. Catalytic converter, diesel particulate filter and oxygen sensor safe. Contains no alcohol.

One 6 oz. (177 mL) bottle of BG DFC Plus Easy Treat treats 10–40 gallons (40–150 Liters) of diesel fuel.

Many BG products are available in sizes that range from a one treatment bottle or can to bulk sizes, including 1-, 2.5-gallon bottles; 3-, 4-, 5-gallon mini-totes; 5-gallon pail, 16-, 30- and 53-gallon drums.



BG Diesel Fuel Treatments



DuPont® F21-61 Fuel Oil Stability Test

This test is used to determine the relative stability of distillate fuels under short term, high temperature aging conditions involving air exposure. It can be used to evaluate the effectiveness of additives for inhibiting residue formation. This is relevant towards the determination of the potential for deposits to be laid on fuel injectors.

After aging and cooling, the fuel samples are filtered and the average amount of filterable insolubles is estimated by measuring the light reflectance of the filter pads. The 100 and 0 % extremes of the reflectance rating range are defined by an unused filter pad and a commercial black standard, respectively. The higher the reflectance value, the cleaner the filter.

The samples on the left are from untreated base fuels. The samples on the right are the same base fuels with the addition of BG diesel fuel treatment.



Base fuel A: 56.4% reflectance



Treated base fuel A: 81.8% reflectance



Base fuel B: 51.0% reflectance



Treated base fuel B treated: 77.3% reflectance



Base fuel C: 35.6% reflectance



Treated base fuel C treated: 78.2% reflectance



BG Diesel Fuel Treatments

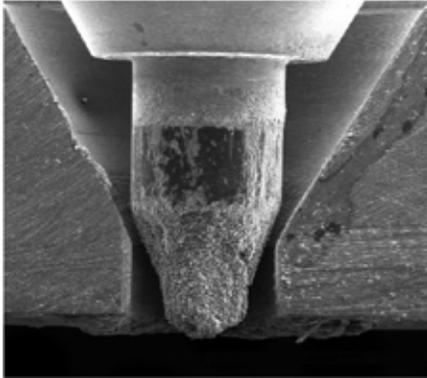


Diesel Injector Deposit Prevention

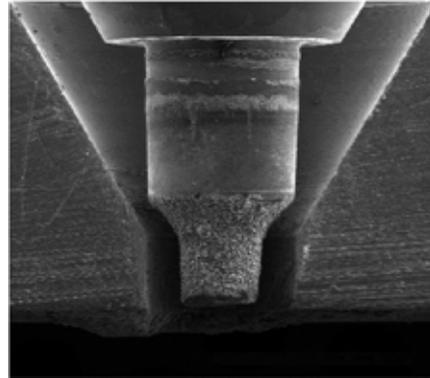
BG diesel fuel treatment prevents formation of, and removes existing deposits caused by fuel decomposition, which results in maintaining optimal fuel spray pattern. The benefits are optimal fuel economy, improved vehicle driveability and reduced vehicle emissions.



BG Diesel Fuel Treatments



Diesel injector plunger with deposit build up.



BG diesel fuel treatment prevents deposit formation.



Improper fuel spray pattern resulting from deposit build up on the diesel injector.



BG diesel fuel treatment maintains optimal fuel spray pattern.

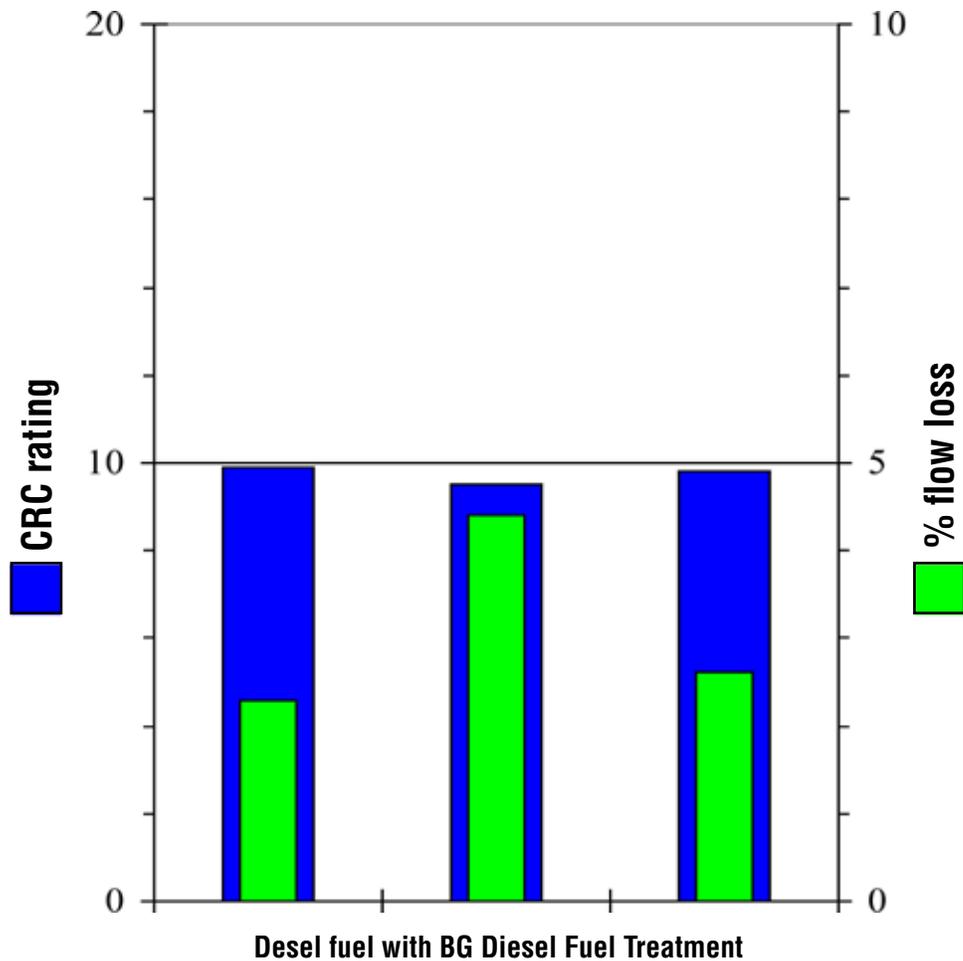


Cummins L-10 Direct Injection (DI) Test

The Cummins L-10 Injector Depositing Test has been used for many years to determine diesel fuel quality. It has also been used to evaluate the effectiveness of additive chemistry in keeping injectors clean. At the end of the test, injector plungers are assigned a rating between 1–100, where 1 is the best and 100 the worst. Flow is also reported as % flow loss. For Superior Pass results, a plunger rating ≤ 10 and a % flow loss of $\leq 5\%$ are required.



BG Diesel Fuel Treatments



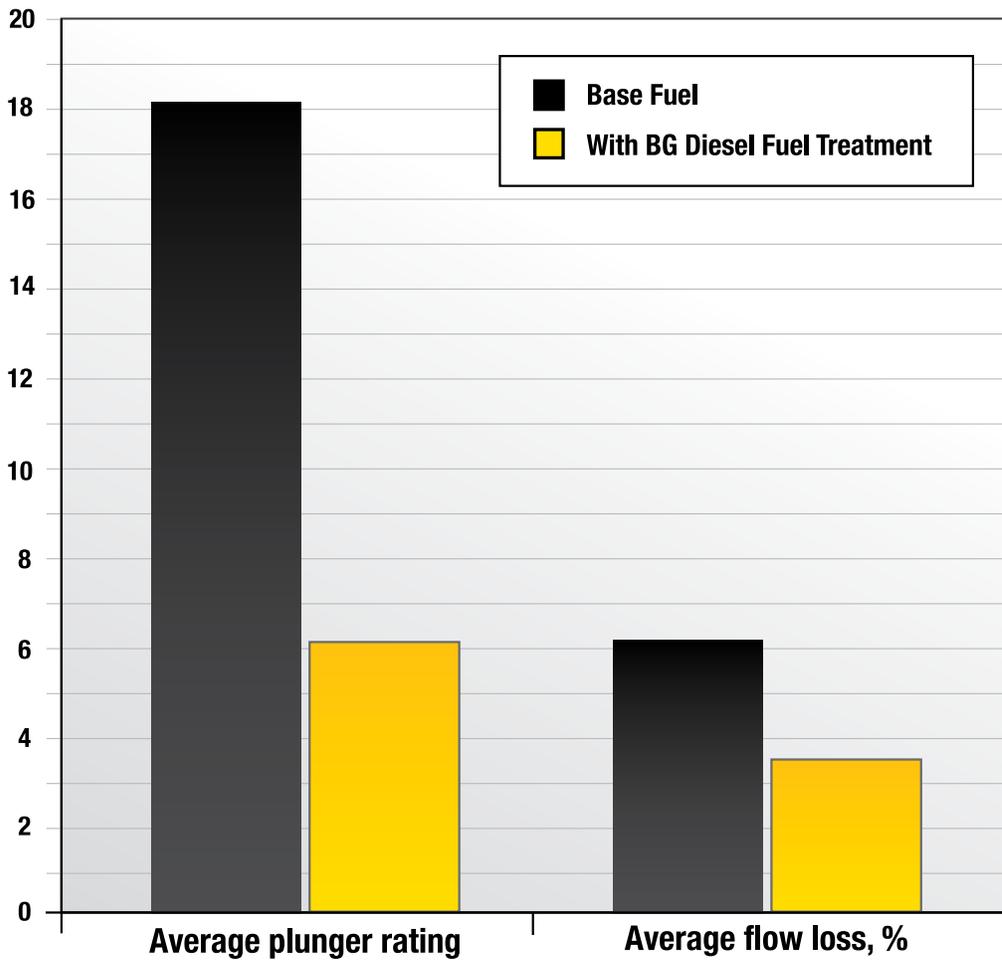
Field Trial – Nozzle Fouling

Four trucks powered by Cummins L-10 direct injection engines ran for 400,000 km. Two trucks operated on base diesel fuel and two utilized treated fuel.

BG diesel fuel treatment improved nozzle rating by 12 rating units and reduced nozzle flow loss by 2.8%.



BG Diesel Fuel Treatments

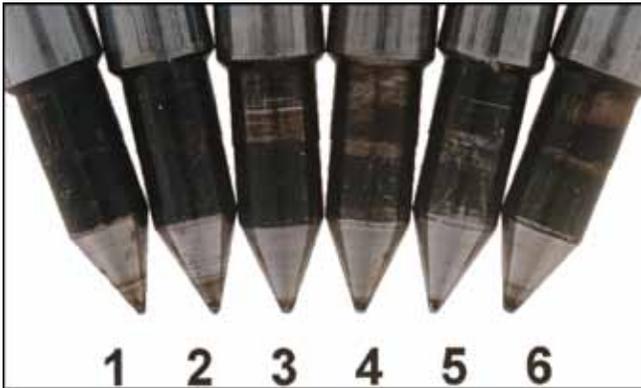


Field Trial – Nozzle Fouling

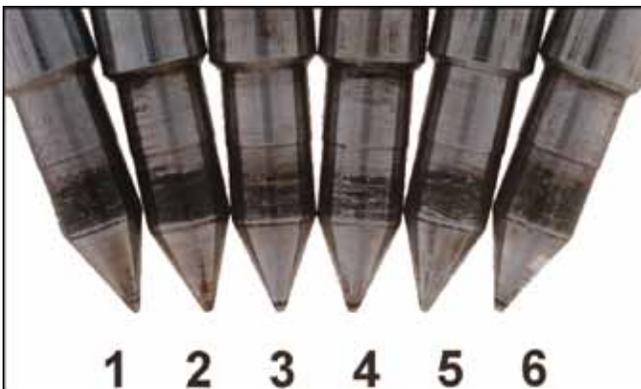
Four trucks powered by Cummins L-10 direct injection engines ran for 400,000 km. Two trucks operated on base diesel fuel and two utilized treated fuel.



BG Diesel Fuel Treatments



Untreated diesel fuel leaves deposit formation on injector plungers



BG diesel fuel treatment prevents deposit formation on injector plungers

