



Now formulated with
SynShield™
 Lubricity Technology

- Puts the Lubricity Back in Today's Drier Fuels
- Increases Critical Fuel Component Life
- Reduces Wear & Saves Money

* Specially Formulated for Ultra Low Sulfur Diesel Fuels

What is SynShield™?

- SynShield™ is a proprietary lubricity additive, blended with Diesel Treat 2000, that surpasses industry standards when it comes to lubricity in fuel.

What does SynShield™ do?

- SynShield™ reduces scoring.

Heavy Scoring
with Untreated Fuel



Minimum Scoring
with New SynShield
Technology



Why add SynShield™?

- SynShield™ is one of the few lubricity additives that exceeds EPA's new standard.
- SynShield™ is the only lubricity additive that does NOT contain sulfur.



WINTERIZED



SynShield™ Lubricity Technology is now available in:



The New Standard

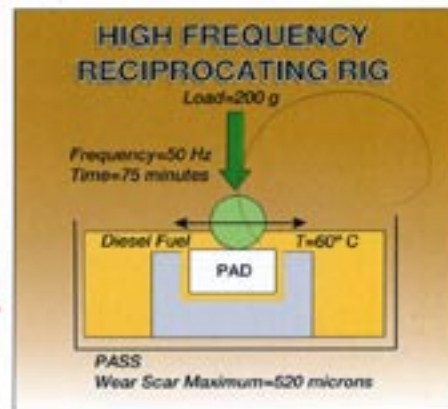
Why a New Standard?

- Fuel injection equipment will run at higher pressures to meet new emissions standards.
- Sulfur, a natural lubricant, continues to be removed from diesel fuel.
- US EPA Clean Fuels requirements:
Ultra Low Sulfur Diesel (ULSD) 2006.

What Does the Standard Require?

High Frequency Reciprocating Rig (HFRR) ASTM D6079, is a test recommended by the E.M.A. as one of two possible tools for monitoring how well the fuel will protect sensitive engine components.

Diesel Fuel must show less than 520 μm wear as measured by HFRR test.



Side effects of making ULSD

Distillates have undergone progressively deeper hydro-desulphurization in order to meet lower S targets. The hydrotreating and hydrocracking processes remove naturally occurring polar fuel components which afforded relatively effective protection.

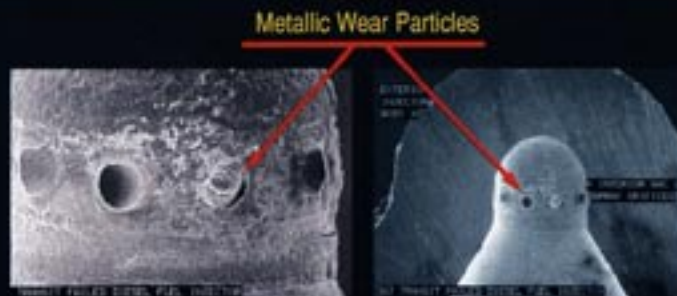
As sulfur levels decrease

Lubricity properties decrease

Result:
Pump & Injector Failures

Lubricity & Related failures

- Injector tip showing clogged orifice(s).
- Debris plugging the orifice disrupted spray patterns causing severe operability problems.
- Debris plugging orifice was determined to be wear particles caused by adhesive friction.
- This leads to engine failures.



Lubricity Improvers

Lubricity is the ability of a fuel to reduce friction between surfaces in relative motion, thereby minimizing damage to surfaces.

The function of a lubricity additive is to provide boundary lubrication between metallic parts in critical fuel system components by forming a protective layer on the metal surfaces.

