

Dieselelex[®] Gold

Power ♦ Efficiency ♦ Protection

**ENGINEERED
TO BE THE**

BEST FUEL

**TO POWER
AND PROTECT**

DIESEL ENGINES



®



DIESELEX[®] GOLD

contains a multifunctional additive package consisting of eight individual components with specific functions



Cetane Improver

+



Detergents

+



Corrosion Inhibitors

+



Lubricity Enhancer

=



Oxidation Inhibitor

+



Fuel Stabilizer

+



Demulsifier

+



Moisture Control





CETANE IS A MEASURE OF IGNITION QUALITY

Feature:

- Improved ignition and combustion

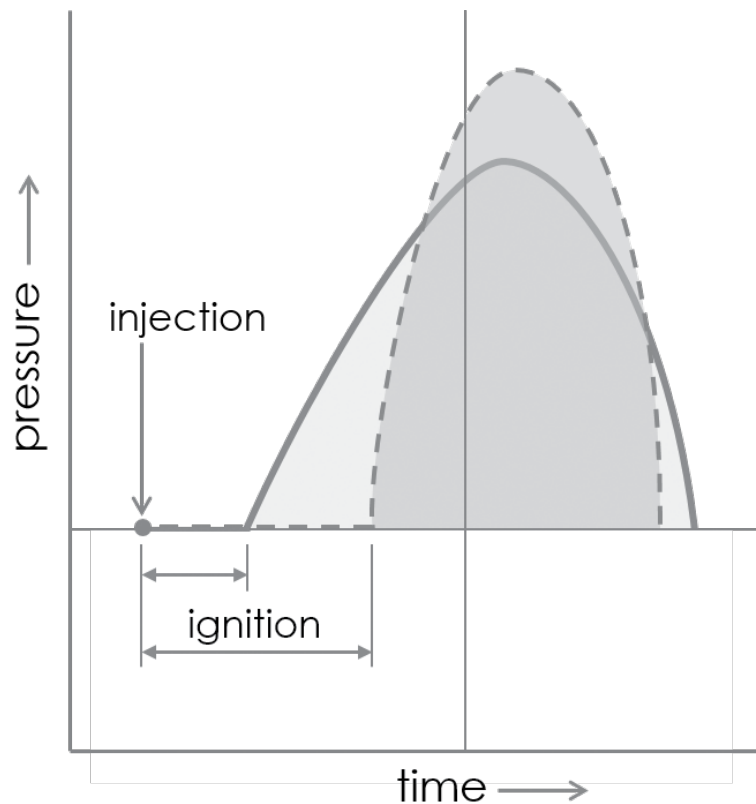
Benefits:

- Better cold starts
- Helps extend battery life (less cranking)
- Quieter operation
- Reduced emissions





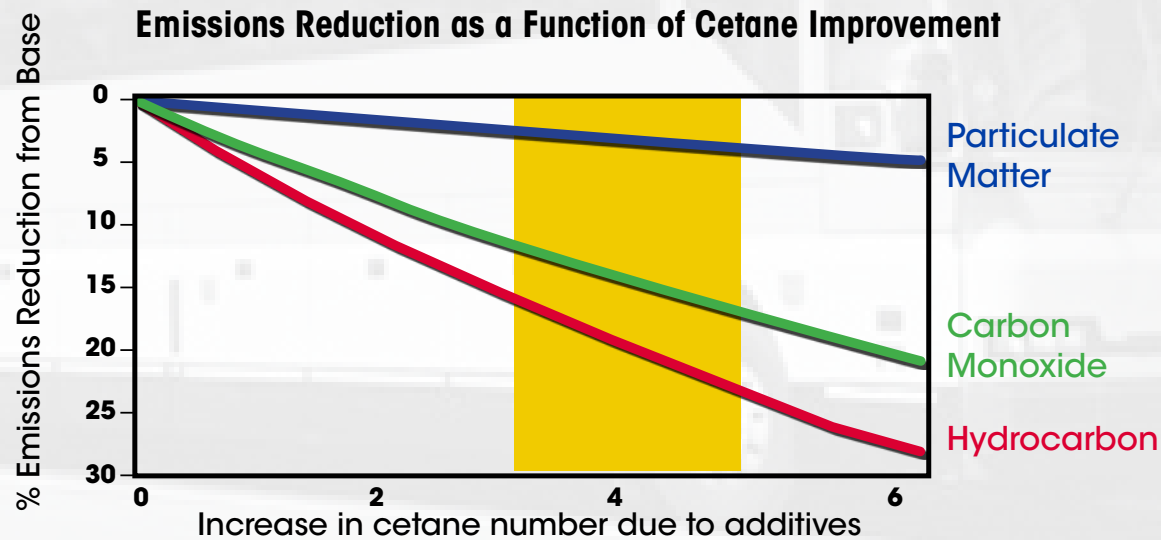
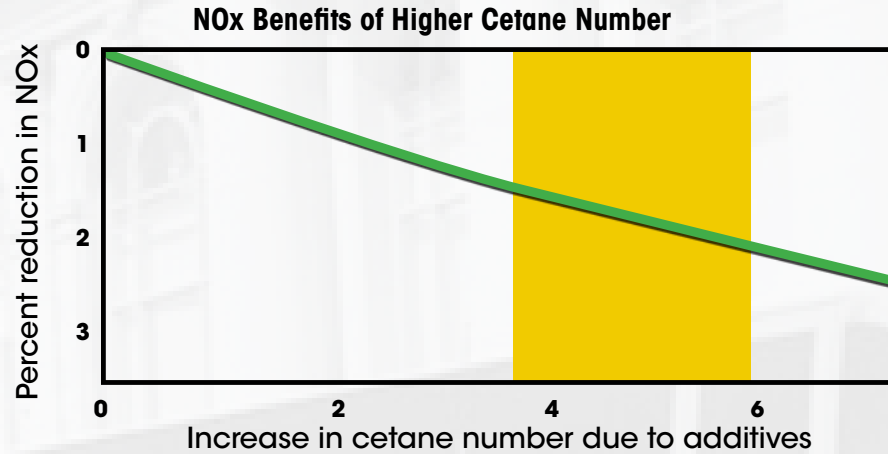
EFFECT OF CETANE ON COMBUSTION RATE AND PRESSURE



Low Cetane Fuel	High Cetane Fuel
Long Ignition Lag	Short Ignition Lag
Abnormal Combustion	Normal Combustion
High Combustion Pressure	Less Shock Load on Piston
Uneven Thrust on Piston and Cylinder	Increased Engine Durability
Loud Engine Knock	Faster Cold Starts
More Emissions/Smoke	Less Emissions/Smoke



EFFECT OF CETANE ON COMBUSTION RATE AND PRESSURE





DETERGENCY

Injectors can become:

- Plugged
- Gummed
- Fouled
- Carboned
- Varnished
- Impaired with internal deposits

Resulting in:

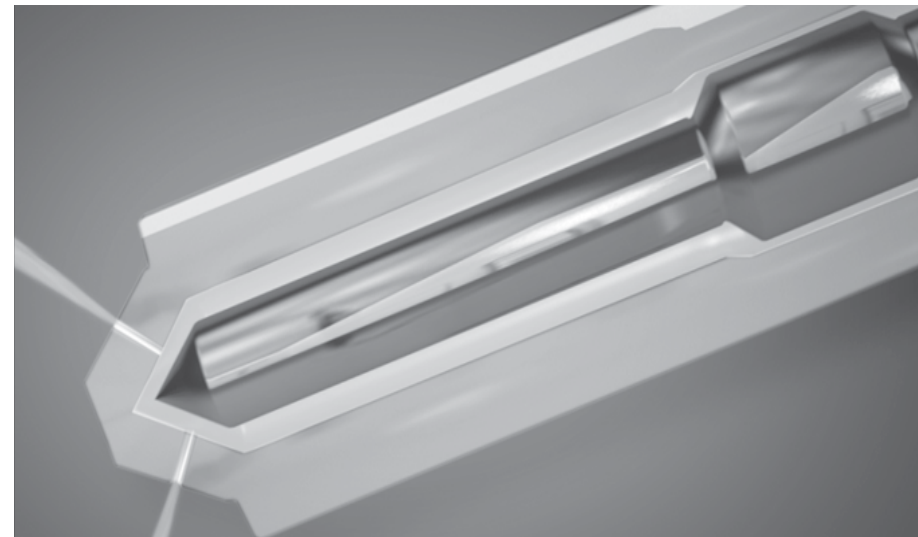
- Higher maintenance costs
- Wasted fuel
- Poor combustion
- Decreased horsepower
- Increased smoke
- Decreased engine life



Bad Injectors



Good Injectors

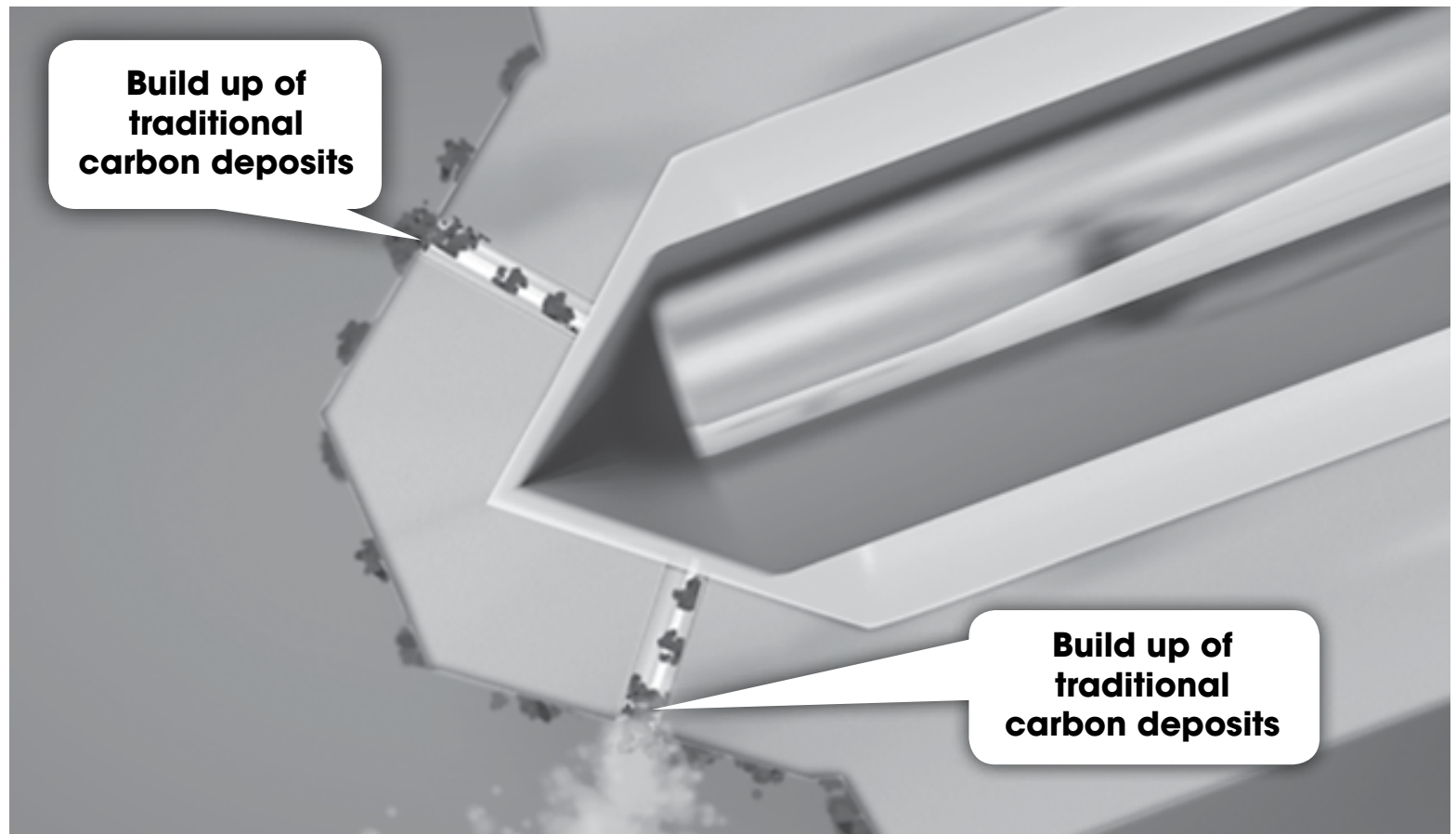


Deselex Gold cleans up deposited injectors and keeps them clean



CARBON DEPOSITS

accumulate in the injector orifices and injector tips and impair the fuel flow into the combustion chamber.

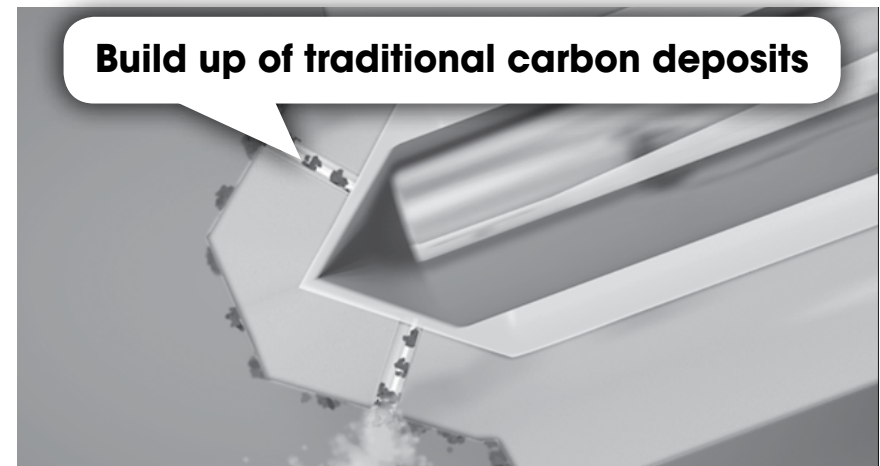




DETERGENCY

Accumulation of carbon deposits causes:

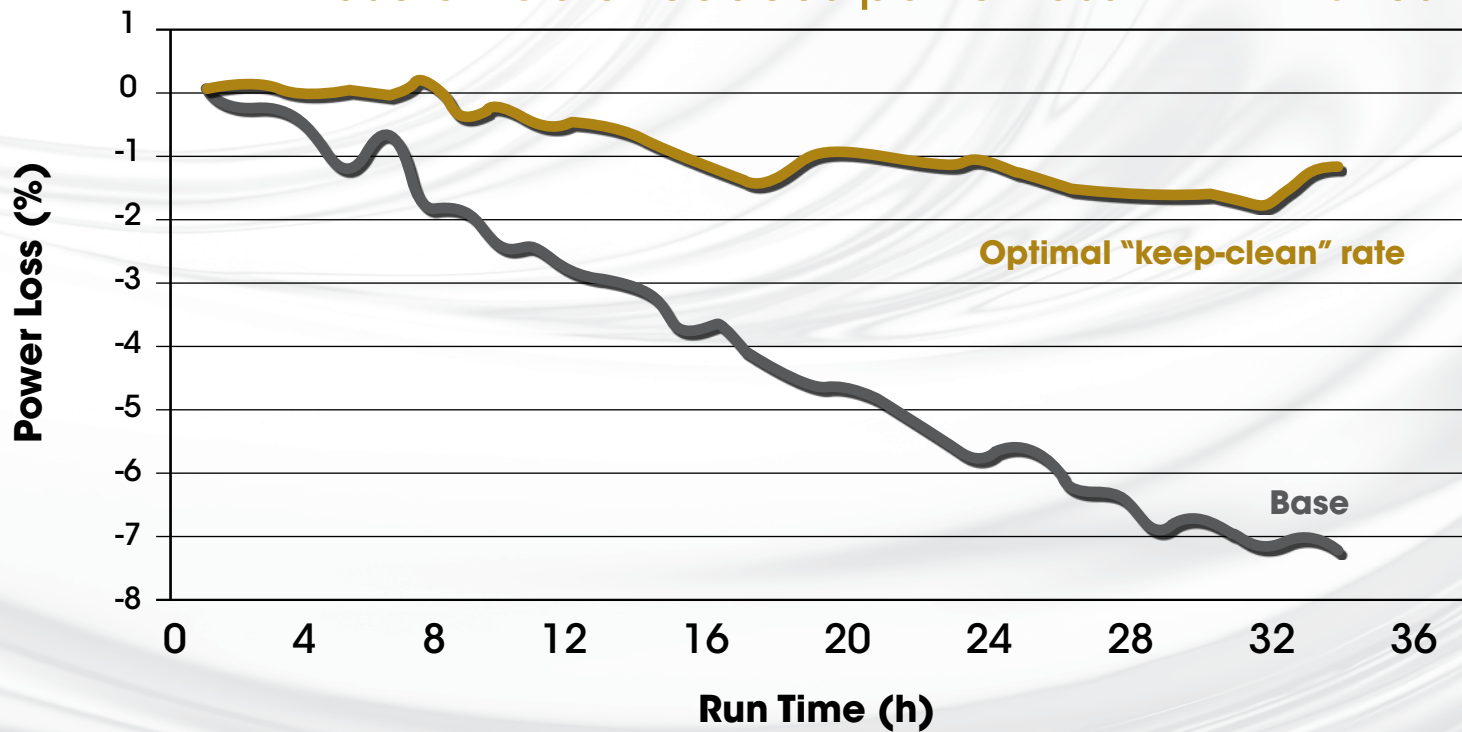
- Less than optimal combustion
- Rough running engines
- Misfiring
- Reduced power
- Increased emissions
- Loss of fuel efficiency





DETERGENCY: DW-10 PERFORMANCE

Diselex Gold reduces power loss in DW-10 test



The DW-10 performance test is the new industry standard test to measure keep-clean performance against traditional carbon deposits.



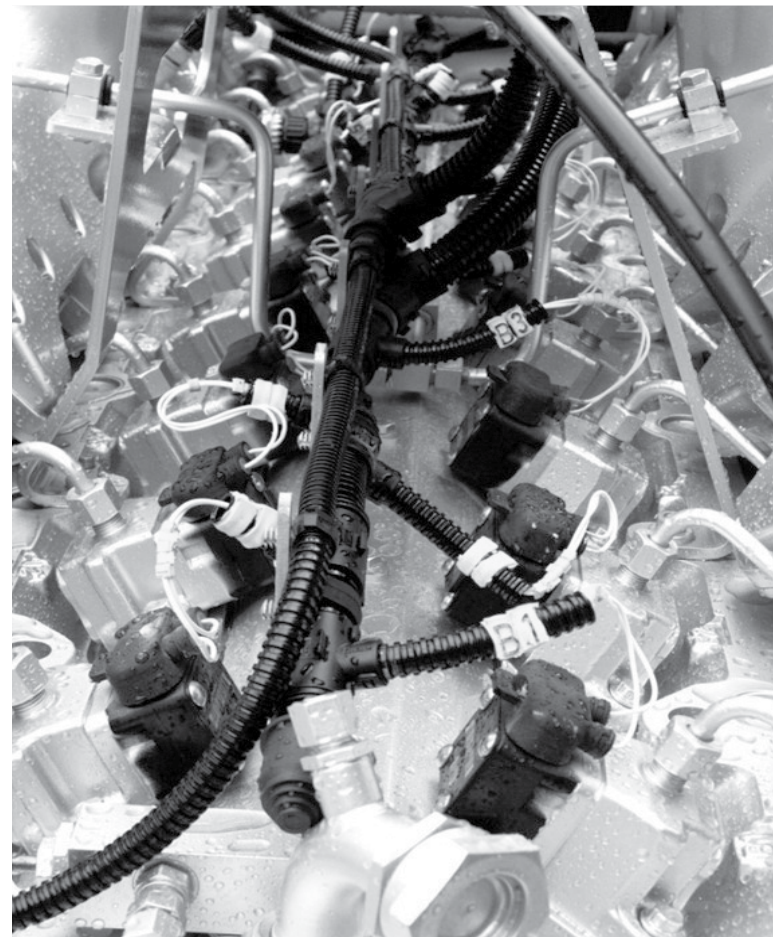
DIESELEX GOLD PASSES THE INDUSTRY STANDARD DW 10 INJECTOR TEST (detergency measurement)

Features:

- Cleans up dirty injectors
- Keeps injectors clean

Benefits:

- Restores horsepower
- Enhances fuel efficiency
- Protects against sludge build-up through dispersancy action
- Improves fuel economics



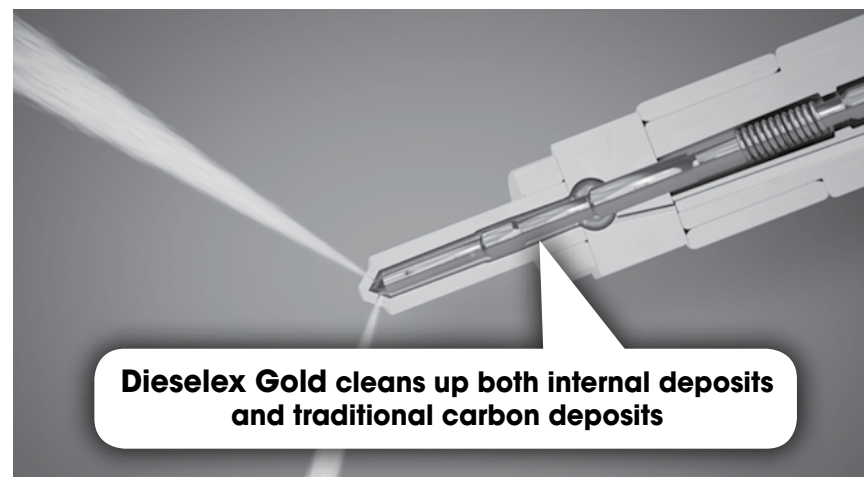
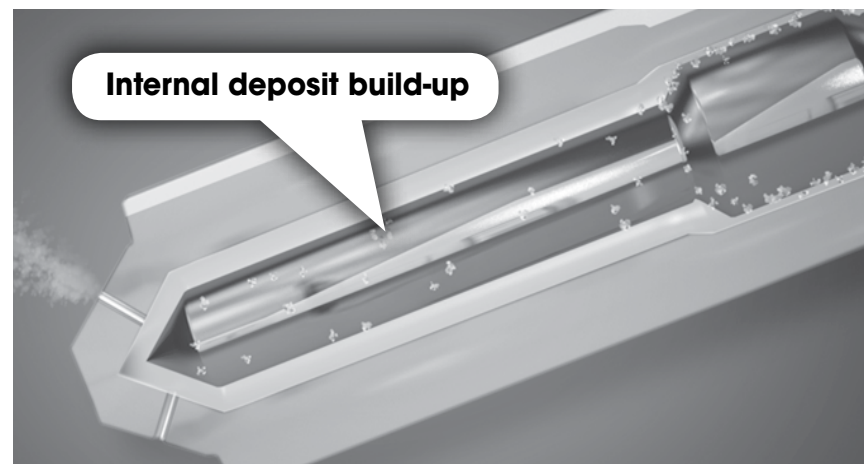


INTERNAL DIESEL INJECTOR DEPOSITS

Internal Diesel Injector Deposits (IDID), aka “sticky” deposits can form on fuel injector needles and plungers of High Pressure Common Rail (HPCR) fuel systems.

This can cause slow actuating or stuck fuel injectors resulting in rough running engines, misfires, reduced horsepower, increased emissions and loss of fuel efficiency.

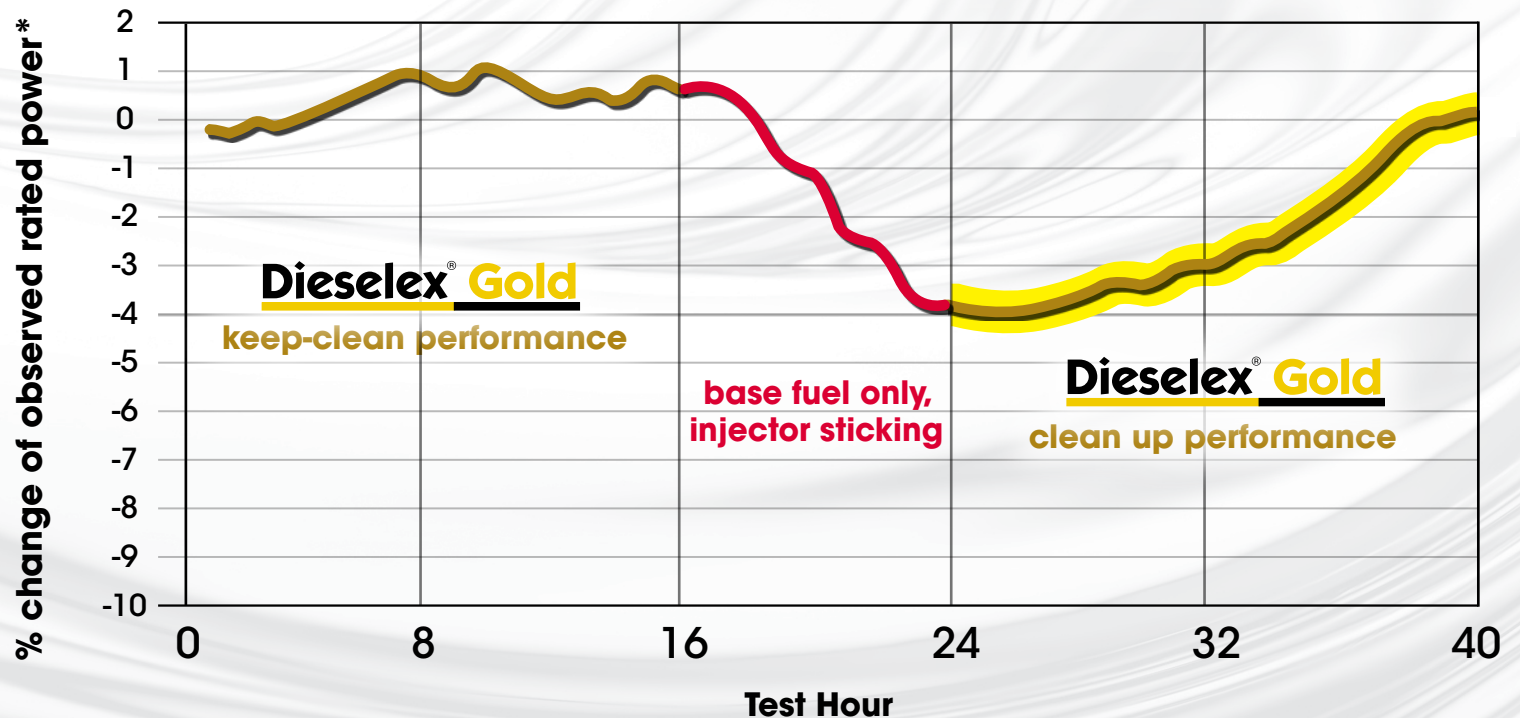
Untreated fuel in a test engine caused significant power loss in as little as 8 hours of running time.





DETERGENCY: INTERNAL INJECTOR STICKING

One product that can prevent and clean up injector deposits



* Loss of power is a symptom of Internal Diesel Injector Deposits (IDID) aka "sticky" injectors.



CORROSION INHIBITOR

Features:

- Minimizes corrosion and corrosion by-products
- Prevents corrosion occurring in storage and vehicle fuel systems

Benefits:

- Extends filter and fuel system life
- Prevents particles of corroded metal from blocking narrow orifices
- Prevents erosion of pump parts and injectors
- Reduces costs
- Reduces downtime



**Without
Diselex Gold**



**With
Diselex Gold**



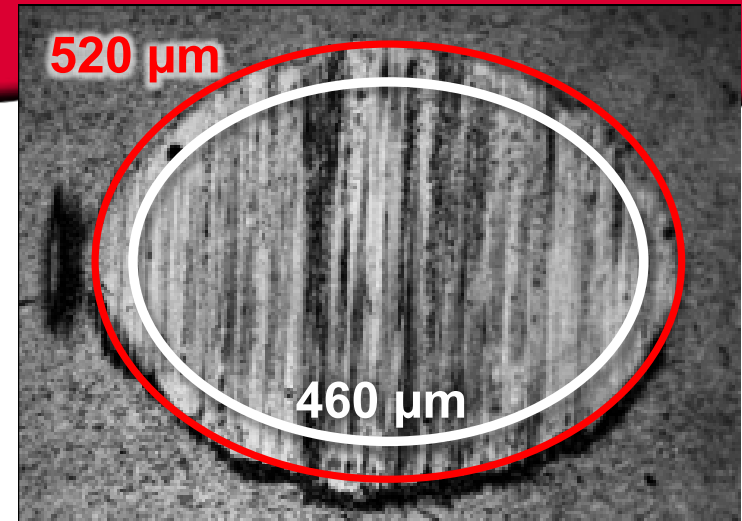
LUBRICITY ENHANCER

Features:

- Improves fuel lubricity
- Provides a protective layer on pumps and injectors

Benefits:

- Reduces wear in the fuel system
- Extends pump and injector life
- Reduces costs
- Reduces downtime



ASTM

Industry Standard Test (HFRR)

An excessively large wear scar pattern ($> 520 \mu\text{m}$) in this standard test indicates premature wear of critical fuel delivery system parts. Dieselelex Gold delivers additional protection targeted at $460 \mu\text{m}$ and easily exceeds the Engine Manufacturer's Association (EMA) recommendations.



THE OXIDATIVE PROTECTION OF DIESELEX GOLD IS OPTIMIZED

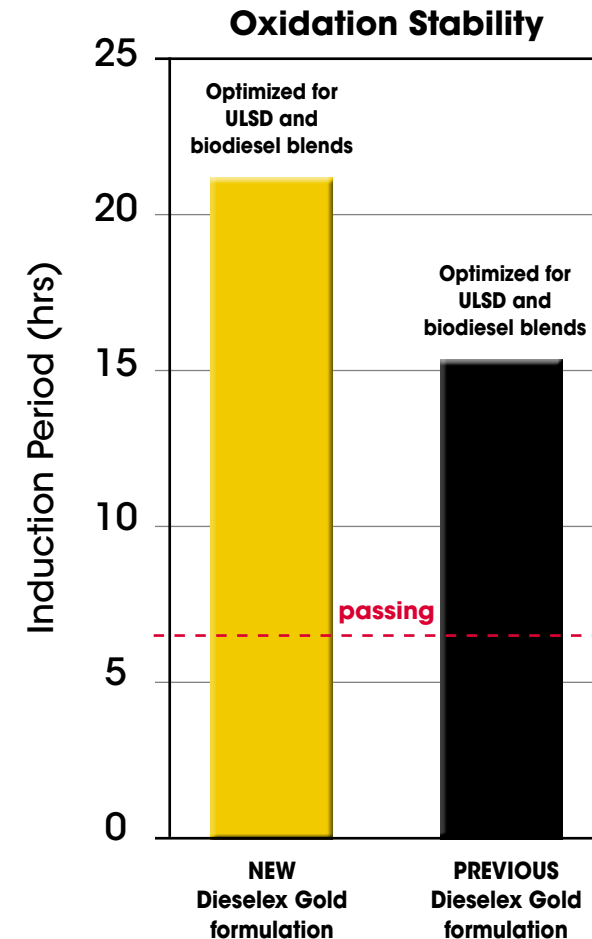
to protect the stability of both conventional and biodiesel blended fuels.

Fuel Oxidation can result in:

- Filter plugging
- Darkened fuel
- Storage tank sludge
- Fuel system deposits
- Formation of gum and varnish



Dieselex Gold's fuel stability package prevents the build up of sludge that can plug filters.





FUEL STABILIZER

Features:

- Promotes thermal stability
- Prevents sediment formation

Benefits:

- Extends filter life
- Reduces costs
- Decreases downtime
- Improves fuel storage life
- Protects against sludge build-up through dispersancy action





DEMULSIFIER

As a result of condensation, water is present in all fuel.

Water in the fuel system:

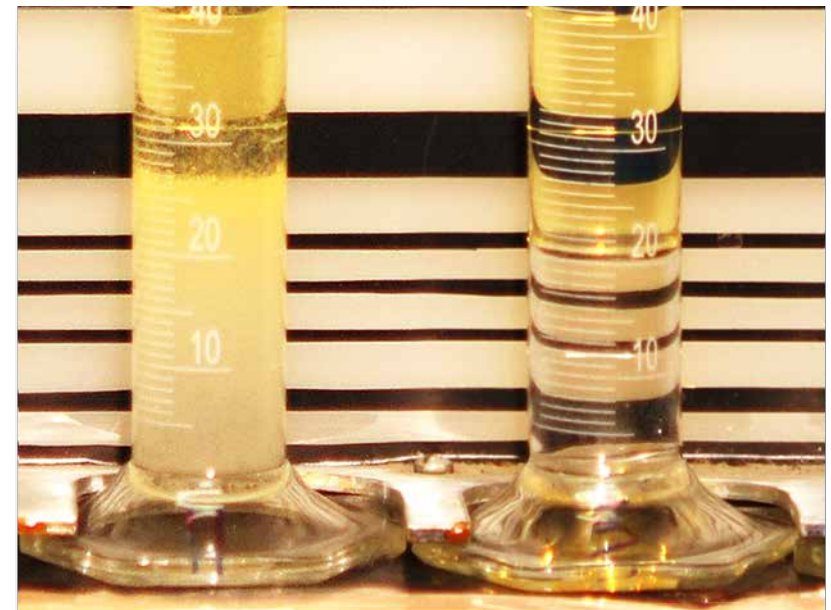
- Causes wear
- Causes rust
- Has no lubricity

Demulsifiers allow water:

- To separate from fuel
- To settle at the bottom of the fuel tank

Demulsifiers protect by:

- Improving engine cleanliness
- Extending filter life
- Reducing costs and downtime



**Without
Diselex Gold
Water/Fuel Mixed**

**With
Diselex Gold
Water/Fuel Separated**



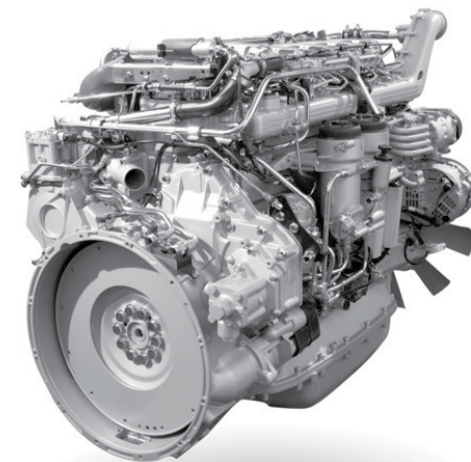
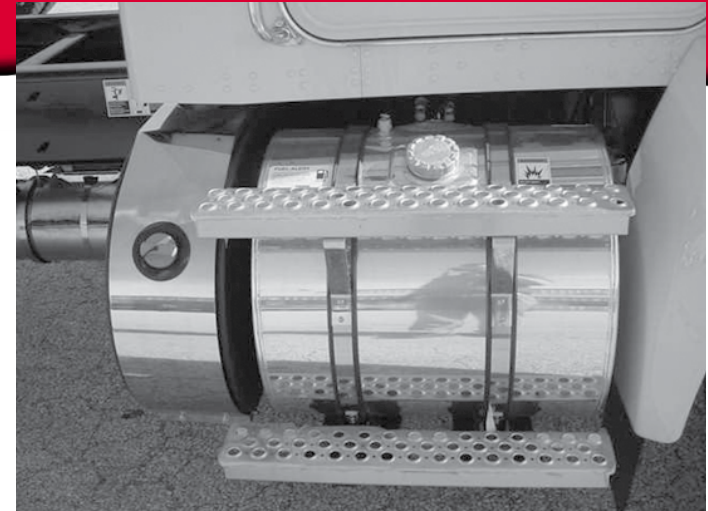
MOISTURE CONTROL

Features:

- Reduces moisture accumulation throughout the fuel system, storage and vehicle tanks

Benefits:

- Minimizes risk of microbial activity
- Reduces moisture related operational problems





DIESELEX[®] GOLD

is enhanced for better protection in today's engine technology and modern fuel blends.

**GO
FURTHER**

**GO
FES**



®