

# 404 Fire-Power Diesel Concentrate

## DESCRIPTION:

Fire-Power Diesel Concentrate is a concentrated cetane improver which also contains a highly effective fuel stability package. It will tremendously upgrade power and performance in all diesel equipment, increasing mileage and providing maintenance economy. Storage stability of fuels will be greatly increased and diesel engines will be kept in a much cleaner, more maintenance-free condition.

## FUEL SITUATION:

In recent years, with the upswing of more worldwide crude oil funneling into our markets, fuel quality has decreased because the quantity of refractive, or "difficult-to-burn" molecules in our fuel has increased due to high aromatic content in the crude.

Current refining methods use a catalytic cracking process by which valuable fuels can still be produced from heavier, less desirable fractions of the crude – in other words, going "deeper into the barrel." This is accomplished by actually cracking a large molecule into smaller molecules at high temperatures. Similar to thermal cracking, which occurs in the deterioration of a lubricant, "cat cracking" thus produces a less desirable fuel with more refractive molecules which resist burning, as opposed to older fuels containing very few refractive molecules (fuel sometimes expressed as "sweet crude"). This, coupled with the high demand for straight-run or "uncracked" jet fuel, leaves today's diesel equipment operators faced with the problem of running their equipment with fuels of increasingly poorer ignition quality, or in other words, lower cetane.

## COMPOSITION:

The cetane improver in Fire-Power consists of special nitrates which are pro-oxidants, and which speed up the oxidative process of fuels during combustion, giving more power and improved mileage. Fire-Power provides greatly increased ignition efficiency with all diesel fuels. This concentrate will actually increase the cetane number of any fuel by as much as four full numbers at its optimum treatment rate.

In addition, Fire-Power has a stabilizing system to improve storage stability that will prevent polymerization and breakdown of hydrocarbons which results in gum and sludge formation. The dispersant contained prevents insoluble residues from forming which are sometimes produced when mixing fuels from different sources. In addition, corrosion is prevented by an inhibitor which produces a protective non-deposit-forming film on metal surfaces in the fuel system and a neutralizer which neutralizes corrosive acids which are formed during combustion.

An important component of Fire-Power is a special emulsifier which disperses moisture. Condensed or entrained water in fuel is a major cause of corrosion, scale and rust, as well as icing in cold weather. Water in fuel also promotes the growth of troublesome microorganisms. Operation of diesel engines is noticeably improved when the fuel is "dry" (water is emulsified) and corrosion is under control.

## PERFORMANCE CHARACTERISTICS:

The reason for better performance with Fire-Power is that cetane improvement in the fuel gives a smoother, less erratic pressure buildup in the combustion chamber during the ignition delay period which occurs between injection and ignition. Controlling this pressure buildup eliminates the potential damage to piston rings and rod bearings. Power and fuel economy is increased as fuel burns more evenly and cleanly. Misfiring is controlled. When ignition improves, emissions are reduced and noise levels are lowered. Control of the pressure buildup allows more complete burning of the refractive molecules in the fuel, which steal power and produce deposits and wear.



# PREMIUM FUEL ADDITIVES SELECT

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In addition, cetane improvement gives quicker starts and faster warm-up at cold temperatures. Fire-Power will lower the minimum starting temperature of a diesel engine approximately 5°F. The point at which misfiring occurs in a diesel engine is influenced by the temperature of the intake air. Fire-Power will lower the temperature at which misfiring occurs by as much as 30°F.

The fuel stabilizing system in Fire-Power eliminates problems caused by sludge, corrosion, rust or scale in degraded fuels. Sticking fuel injectors and plugged lines and filters are prevented, saving costly fuel and reducing maintenance. Engine performance is improved and wear is reduced when operated with clean, stabilized, sludge-free fuel. Fire-Power will not only prevent potential acid and sludge-forming reactions which cause both corrosive and abrasive wear, but will disperse existing sludge and deposits.

### USES:

Fire-Power is extremely effective in middle distillate fuels to improve combustion and ignition efficiency, enhance fuel economy and maintain fuel in a clean, stabilized condition. Fire-Power is completely ashless and has no adverse effects on engine components. Fire-Power Diesel Concentrate is formulated for diesel fuel only. This diesel fuel additive does not comply with federal ultra-low sulfur content requirements for use in model year 2007 and newer diesel motor vehicles or model year 2011 and newer diesel nonroad equipment engines. Improper use of this additive may result in non-complying diesel fuel.

### APPLICATIONS:

Fire-Power 404 is recommended in diesel fuel at 1:300 for maximum initial cleanup and cetane number increase. Treat rates as low as 1:1000 may be used for continued maintenance and stabilization, with a lesser cetane boost.

### TYPICAL SPECIFICATIONS:

Viscosity,	
SUS @ 100°F.	43
CS @ 100°F.	5.2
Flash Point, °F.	102
Pour Point, °F.	-60
Copper Strip Corrosion Test	Pass
Acid Test	Excellent
Density (#/gal)	7.3 – 7.6
Gum and Varnish Test	Excellent
Storage Stability	Excellent
Ash Content	None