



TECHNICAL BULLETIN
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The Ferox Combustion Catalyst

Ferox technology is based on catalytic effects. The main active ingredients are synergistic, multifunctional combustion catalysts, that include combustion surface modifiers and deposit surface modifiers. Ferox can be used with any liquid hydrocarbon fuel ranging from gasoline to diesel to residual fuel. Ferox also shows promise for use with solid carbon fuels such as coal.

In a Ferox treated environment the surfaces of the fuel particles and deposits are modified such that the catalyst lowers the energy of activation of the modified surfaces. The modified surfaces can then burn up at a much lower temperature.

A typical engine develops a temperature gradient ranging from 200°C at the combustion chamber wall, to 1200°C at the center of the combustion process. Many of the fuel components require a temperature greater than 600°C to combust. The heavy fuel components that are exposed only to the 200 - 600°C range never fully burn and are what contribute to deposit formation, particulates, emissions and other undesirable combustion side effects.

The Ferox modified surfaces and fuel particles begin to combust at temperatures as low as 200°C. This is often below the surface temperature of exposed deposits and fuel particles even at the combustion chamber wall. This allows Ferox treated fuel and modified deposit surfaces to burn over the entire temperature range to which they will be exposed. The result is more complete combustion and eventually complete removal of all engine deposits as well as the inhibition of new deposit buildup. This ultimately leads to lower emissions of CO, SO_x, NO_x, HC's and PM-10, lower fuel consumption, and over all better performance and maintenance.

The process of deposit removal by Ferox begins immediately but can take up to 5 months, 600 hours or 4,000 miles for the full benefits to be realized. The actual time required for the full benefits of Ferox to be achieved and the degree of change noticed depends on the operation, history and age of the engine in question.

In a new, clean engine the difference made by the immediate catalytic effect of Ferox on the fuel itself is often not noticeable although the combustion process is more complete than would otherwise be attainable. What will be noticed however, is that engine performance will not degrade as quickly and maintenance will remain at a minimum due to the fact that deposits will not form. Also a gasoline engine will not experience octane requirement increase. The biggest difference resulting from the use of a Ferox combustion catalyst becomes apparent upon complete removal of the deposits from the fuel injectors, intake and exhaust valves, and other parts exposed to the combustion chamber of a dirty engine. This difference can show up as a 5% - 90% drop in total emissions and a 3% - 10% increase in fuel economy.

A Ferox combustion catalyst will keep a new engine clean and can clean up a dirty engine while allowing the fuel used to burn cleaner. Ferox offers a cost effective way to conserve energy and protect the environment yet not sacrifice performance.