

The Benefits of the RENNSLI Fuel Catalyst

RENNSLI Advanced Fuel Catalyst Technology included in all formulations (Liquid & Solid) are derived from the combustion surface and carbon deposit surface modifiers and works in three ways, first burning existing carbon deposits, second prevents the formation of new deposits and third causes the fuel to burn more quickly so that their energy can be captured and used. Removing carbon deposits and promoting a more complete combustion produces a variety of benefits, each major Fuel Catalyst benefit is listed below with a short technical explanation.



* **Note:** The percentages showed in this image are the maximum results can be obtained, but in some cases the equipment, fuel, environmental factors and other conditions may vary enough to make it difficult to predict the magnitude of benefits in a specific application.

Removes deposits.

The catalytic components in our products cause deposit removal by interacting with the surface of the deposit and lowering the activation energy of its chemical bonds. This allows the release of carbon atoms in the form of CO₂ to occur at the lower temperatures found at the deposit surface.



Inhibits deposit formation.

The catalytic components in our products inhibit the agglomeration process, which the combustion products undergo when forming heavy deposits. The agglomeration process is apparently stopped at the primary and secondary particle formation phase resulting in smaller, lighter particles.



Decreases fuel consumption.

This could be due to the more efficient conversion of the fuel to CO₂ and the fact that deposit material that absorbs and protects the fuel from being completely combusted is being destroyed and removed. This benefit continues to improve as the deposits are removed.



Emissions are reduced.

The primary source for emissions is the deposits. With the deposits removed there is a drastic reduction in the emissions of CO, NO_x, SO_x, HC and particulates.



Carbon content of ash will drop.

With the catalytic components interfering with the agglomeration of the combustion products and promoting CO₂ production, less carbon is available to end up in the ash complex. This fact also results in a smaller amount of ash or soot being produced.



Exhaust will be cooler.

A fuel has a limited amount of energy that is derived through the production of CO₂. The catalytic components in our products promote the production of CO₂. When more of a fuel's energy is released during the combustion phase less is available to be released during the exhaust phase. The difference in energy release correlates to a temperature difference. A lower temperature during the exhaust phase, due to decreased CO₂ production during that phase, results in cooler exhaust.



Extends oil life.

Catalyst treated fuels tend to produce smaller and less abrasive particles which in connection with the removal of deposits results in cleaner longer lasting oil. These results lead to reduced engine wear and less maintenance time.



Extends Equipment life.

Equipment life is increased due to lack of deposit buildup, cleaner oil and reduced friction. Injectors, valves, rings and other associated parts show little sign of wear even after extended use.



Octane requirement decrease.

In gasoline applications a lower octane fuel can be used, due to deposit removal, and still provide the same performance as with previous higher octane fuels.

