

Technical Description

The InterCharger™ is a catalyst that is capable of processing toxic hydrocarbon emissions such as those emitted from an engine's crankcase ventilation system. Unlike an exhaust catalytic converter however, this technology does not produce heat or oxidize emissions. It is designed to impart electrochemical changes to the hydrocarbon emissions as they pass through the device. The materials used to produce the necessary chemical modification to the passing emissions are non-toxic and not consumed in the electrical reactions created amongst them. Since heat is not generated with the reactions inside the catalyst, it can be easily and safely installed on an engine with no concern of its proximity to electrical components or the fuel system. The materials used in its construction are designed and formed in such a way as to impart minimal restriction to the flow of the engine's crankcase ventilation system. As well, it is designed to function indefinitely with no required servicing. The materials are contained in an aluminum cylinder that is installed on an engine in such a way as to allow the crankcase emissions to pass into and through these catalytic materials and then be directed into the combustion chamber of the engine. Since most engine manufacturers are aware of the extreme toxicity of crankcase emissions, there is, in many cases, an existing ventilation system that can easily accept the installation of this technology. Older engines with open to atmosphere vent systems can also easily be retrofitted with this system allowing them to comply with current emissions regulations with no maintenance concerns or performance loss.

The concept of this technology has been well researched in the oil processing industry since the 1930's. However, it seems that reducing an engine's crankcase emissions has not been a prime concern until relatively recently. Our catalyst produces electrical reactions because of the dissimilar metals strategically comprising its internal structure. When hydrocarbon fluids, gas or liquid, pass through these materials the electrical reactions induce a chemical change to the hydrocarbons as a result of the electron orbit deformation. The modifications involving the electron orbits of these saturated hydrocarbon molecules produces many positive and desirable effects.

Reduced coagulation of crankcase emissions is a result of inducing similar charges to the molecules effectively allowing them to repel one another. This has the effect of reducing the coagulating characteristics of normally dissimilarly charged emissions.

Modified crankcase emissions have a cleaning effect inside the engine's induction system. This is believed to be a result of the charged particles attracting electrons from stable hydrocarbon contaminants. By removing the electrons from stable molecules, they in turn become unstable and often act as a solvent.

Modified hydrocarbons tend to have a significant effect on the combustion process. It is believed the increase in chemical reactivity, as a result of electron deformation, enhances the decomposition of fuel molecules. When fuel molecules decompose easily and under milder conditions all characteristics of combustion are improved. The characteristics, such as, improved ignitability, controlled flame propagation and reduction of emissions. Emissions are reduced as a result of increased decomposition reactivity and controlled combustion reactions.