



X-1R Global Ltd

To: All X-1R distributors

From: Nigel (Mac) McKenzie

Cc:

Date: 4th October 2023

Subject: How our Petrol and Diesel Decarboniser's clean EGR valves and DPF's

Recently we have seen a lot of interest with our Petrol and Diesel Decarboniser products. Chiefly this is because of their ability to clean both the EGR valve and burn deposits in the DPF. This process has thrown up a lot of technical questions from field staff; primarily how the process works (what is the science) when our product is 'burnt' in the combustion chamber.

Before I explain the process, I will remind you that since 1997 the use of an Exhaust Gas Recirculation engines has become wide spread as a method of reducing the amount of pollutants, particularly Nitrous Oxide (aka Nox), in the exhaust gases. They have a sensor in the exhaust that opens a valve allowing recirculation of exhaust gases into the combustion chamber that recirculates exhaust gas via a cooler and reinjects it into the combustion chamber. This lowers combustion temperature and there is a resultant reduction in pollutants, particularly Nitrogen Oxide (aka Nox).

There is a 3D video at <https://www.youtube.com/watch?v=JTCrv8fnZPQ> that explains the process. You may like to take note of the '**pros and cons**' table near the start as it gives a couple of neat selling points for you.

X-1R Decarboniser's are formulated with metallic and non-metallic combustion enhancers along with the max strength detergency package that we can add. For the purposes of this explanation, it is really the metallic combustion that are our hero's.

Metallic combustion enhancers rely on metal catalysts to burn soot/particulate matter that has been deposited on EGR valves and DPF's. When burnt in an engine these metals form oxides that act as catalysts and reduce the ignition temperature of the deposits allowing the effective burning and thus cleaning of them from the system when the high-boiling solvent blend contained in our product washes them away.

The non-metallic also have an impact on the process, only they do not reach the EGR valve or DPF as they are burnt in the combustion chamber. These modify the combustion process in the combustion chamber creating a more complete burn of the fuel and thus less soot and deposits are generated. The end result is a cleaner EGR and DPF as a result.

Nigel McKenzie

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