

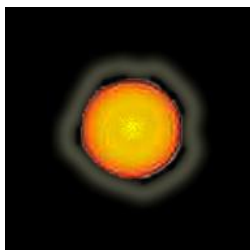
# A Physics View of EnviroMagnetics Diesel Fuel Technology

In a Combustion Chamber, fuel always burns as a spray of droplets

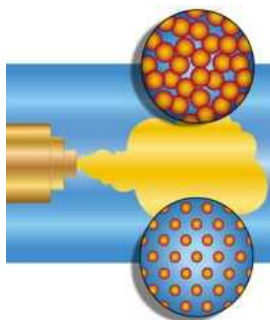


Big droplets burn dirty, smaller droplets burn cleaner.

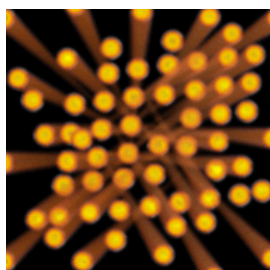
The EMC Engineered Diesel Fuel System provides micro-droplets.



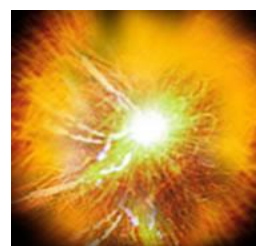
EMC Energizers ionize each drop with a tiny electric charge creating instantaneous droplets



The droplets change into micro-droplets which burns better



Normal Combustion



Ortho Energized Combustion

The normal injection spray of diesel fuel forms large droplets (chemical associations - molecular clusters) which do not burn efficiently. Furthermore, at low rpms, such as idle speeds, the large droplets have enough time to begin to collapse and puddle; more wasted fuel.

EnviroMagnetics Corporation's (EMC) Engineered Diesel Fuel System combines Positive and Negative Ortho-Hydrogen fluid treatments that burn the fuel so completely, it substantially releases more BTUs saving fuel and reducing emissions. The physical principles of Ortho-Hydrogen electromotive treatment are described in great detail in "Single Drop Diesel Combustion" published by NASA and the Jet Propulsion Labs.

The electromotive energy [Ortho-Hydrogen treatment by the magnetic fields] going into the engine's fluids works a little like a car battery or a dry cell. In a car battery, electrons flow between lead and zinc plates. The electrolyte is battery acid. In a 1.5 volt battery the electrolyte is a paste. In the EMC field, the electrolyte is the fuel, air, and coolant. When fuel, air and coolant fluids go through the EMC Energizer field, a calculated percentage of electrons flow naturally into these fluids.

Using the proper field potentials, EMC Diesel Fuel System's energy units are installed externally on the fuel supply line just before the injectors; on the leak back line to the tank [where applicable]; on the rubber connectors or duct of the cold charged air line after the intercooler; and on the radiator coolant hose.

## BREAKS FUEL DROPS INTO MICRODROPS

The clustered fuel molecules (chemical associations) are energetically given a spin potential which repulses them from each other breaking up the clusters.

Then when the fuel is sprayed into the combustion chamber, in nanoseconds the potentiated electrons of the fuel instantly try to escape from the drops of fuel by breaking through the surface tension of each drop and forcing it to split into thousands and millions of microdrops (see below).



## MIDDLE MOLECULE BURN-THROUGH

The sum of surfaces of millions of microdrops is exponentially greater than that of a few thousand normal size drops. (Think of the surface of a grapefruit. Now think of the total surface areas of 1,000 peas. Same volume - more total surface area.) At ignition, the fuel molecules on the surface of any drop always burn first. Those in the middle always burn last. In a big drop, the middle molecules may burn partially or not at all. Soot, smoke, hydrocarbon particulate, NOX and most other emissions are basically unburned or partially burned "middles."

When the big drops are broken into microdrops, there are fewer molecules in the middle. The positively charged molecules are then dynamically attracted to oppositely charged oxygen, resulting in a greater ionization, oxidation, and a greater BTU release every ignition stroke.

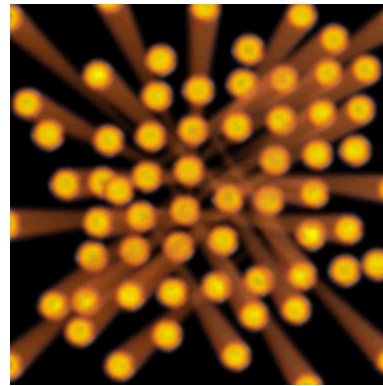
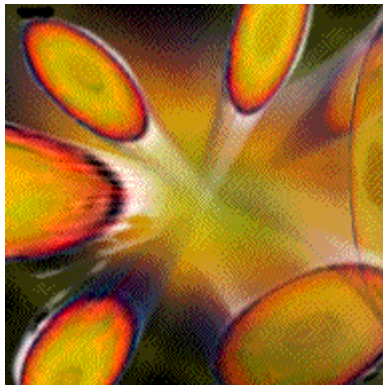
The EMC Diesel Fuel System also energizes the cylinder walls which keep them from absorbing and neutralizing any Ortho-energy from the gas helping to maintain the greatest release of BTUs and greatest reduction of emissions. The system also reduces engine temperature by increasing thermal heat transfer in the coolant providing cooler, longer running engines.

Once EMC Diesel Fuel System has stabilized<sup>1</sup>, it provides up to 80-99% less particulates, up to 99% less NOX, CO, and a reduction of 15%-80% less CO2 after the system stabilizes. The greater BTU release means more power: 3% to 12% more flywheel torque per ignition stroke.

Better Fuel Economy, Reduced Emissions and Cooler Running, Longer Lasting Engines.

<sup>1</sup> Stabilization is the amount of break-in time the engine has to run for the EMC Diesel Fuel System to fully energize all the engine's air, fuel and coolant pathways. This generally has shown to take about a month or 12,000 miles to achieve the full break-in period. Upon finishing the Stabilization Period, the system provides the highest economy and greatest reduction of emissions.

The correct number of electrons to induce the desired effect was defined by NASA as the Rayleigh Limit –  $3.25 \times 10^{27}$  electrons per drop per second. Given the correct charge, a normal droplet will break into *octolids* – eight equally shaped smaller droplets. These eight drops break into 64 microdrops, then 512, 4,096... and so on (think of splitting a grapefruit into halves, quarters, eighths, sixteenths, thirty-seconds, smaller and smaller..), until the combined strength of the electrons is no longer enough to break the surface tension of the last micro-drop. It all happens in a few nanoseconds.

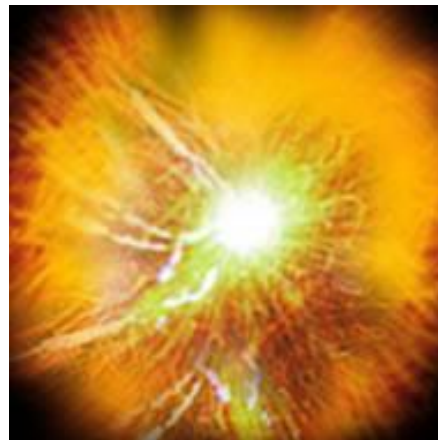


IONIZED DROPS BREAK INTO 8 "OCTOLIDS" OR MICRODROPS... ...AND THEN INTO 64, 512, 4,096...MORE MICRODROPS THAT MIX BETTER WITH AIR.

THIS EFFECT TAKES PLACE IN 5 to 15 BILLIONTHS OF A SECOND. AS CHARGED DROPLETS, THEY MIX BETTER WITH OPPOSITELY CHARGED OXYGEN.



Normal Combustion



Ortho Energized Combustion

***Limited Lifetime Power Warranty. When replacing equipment, simply move the system to the next engine.***