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The changing face of fuels and it's real impact



Over the years, we have seen petrol go from leaded to unleaded, as the tetra lead content was removed from petrol. This created some issues for engines not compatible with this reduction in the lead content and required engine modifications to cope. This was especially true for older vehicles, as these required retrofitting of harder valves and seats.

More recently, 5% Ethanol (E5 fuel) appeared at the pumps, further creating some issues for a few vehicles. The main reason behind this change, was the reduction in CO₂ output, making this fuel better for the environment.

The next level change was to introduce

a 10 percent Ethanol fuel (E10) to even further reduce emission output. But this fuel contains only 90 percent petrol and 10 percent Ethanol.

E10 has created issues with vehicle management systems detecting this new fuel ratio. The Stoichiometric ratio of E10 fuel is 14.08:1 instead of the original 14.7:1 of straight petrol. After the introduction of E10 fuel, customers soon complained of poor fuel consumption, when using higher ethanol content fuels. Some vehicles

even performed badly and showed signs of running issues, misfiring engines and faults logged in the fuel management systems.

One of the big draw backs from Ethanol based fuel is they are hygroscopic- they absorb moisture over time. This breaks down the rubber components in the fuel system, fuel lines and O rings. The fuel system starts to deteriorate and these loose rubber particles can block injectors.

Water content absorbed into the fuel can eventually stop an engine from running, so it is advised to make sure the fuel in the system is used in a timely manner and not left to sit for

long periods of time. This can be an issue if the vehicle is not used regularly, and the fuel is not replenished every month.

It is worth checking online, on various sites, the compatibility of these fuels with your vehicle and how long fuel can safely be in your tank between refuelling dates.

An alternative method is to use fuel stabilisers to combat the issues that may occur when using Ethanol based fuels.

Fortunately, non-Ethanol fuel is still available, but at a premium price, making it unattractive to most motorists. But it is worth noting that fuel consumption will improve when using 100% petrol-based fuel, this can offset the price difference.

At the Helpline, we have had many calls relating to poor performance issues, poor idle quality and fault codes logged for fuel trim issues, and with no other symptoms. If you come across a similar situation, check with the customer if it was after changing to E10 fuel that the problems arose.

If that is the case, removing the E10 fuel and replacing with Premium non E10, in most cases, will return the vehicle to it's previous healthy state.