

Straight Torque

With Brendon and Melinda Leyshon
Production Automotive

E10 Fuel

Over the last six months we have seen an influx of customers coming in with issues related to E10 fuel. E10 is most certainly cheaper at the bowser – but does it really turn out to be a cheaper alternative for your vehicle?

What are the different types of petrol?

There are a number of types of petrol available to motorists - unleaded, Premium 95 and Premium 98. Unleaded fuel is currently being phased out and replaced by E10.

Premium 95 and Premium 98

Premium 95 has a 95 octane reading, and Premium 98 has a 98 octane reading. The higher the number the better for your vehicle –this is because the higher the octane reading, the lower and more controlled the burn of the fuel is. This gives you more power for each combustion stroke within the engine and, the slower the burn, the less amount of fuel you will utilise.

E10

E10 is a mixture of fuel and ethanol. The Australian Government has limited the amount of ethanol in petrol in Australia to a maximum of 10%. Ethanol is a renewable fuel, currently made locally from waste products such as sugar cane.

What problems have been identified with E10?

One of the major issues with ethanol is that it is a solvent. Solvents are drying agents and can disintegrate or dissolve parts. Another issue is that alcohol absorbs water, and for these reasons, ethanol can be very harmful to the fuel system components. A few of the issues that we have seen in the workshop over the last six months include:

- o Fuel pump failure, with a number of fuel pumps overheating and burning out prematurely after E10 fuel damaged the plastic within the pump

- o Fuel lines disintegrating, as the ethanol in E10 attacks both the metallic and rubber-based fuel lines
- o Fuel injectors damaged, with the plastic components within injectors getting eaten away from the ethanol

- o Water in the fuel system, resulting in engines hesitating and running roughly.

Ethanol has an affinity to water that can result in the corrosion of fuel tanks and fuel lines – rust resulting from this corrosion can block the fuel supply, resulting in the engine being inoperable. While the corrosion concern has been somewhat addressed by the requirement to add a corrosion inhibitor to the ethanol, the effect of ethanol on seals in the fuel system remains unaddressed. E10 may appear cheaper at the bowser, but it also increases the long-term maintenance costs for your vehicle!

Is E10 really cheaper?

No! E10 provides motorists with the illusion of economy as it is cheaper per litre – but E10 burns quickly, causing you to use more petrol. It is false economy, and from a purely technical perspective, ethanol doesn't give you more bang for your buck or more power, and it most certainly doesn't give you extra fuel economy. The only thing burning ethanol creates is heat – when the fuel and ethanol mix in the combustion chamber they ignite, and this burn within the chamber makes your engine run hotter.



Why is it false economy?

If you use 5ml of 98 fuel to get the piston to travel from the top to the bottom on a power stroke, generating the equivalent amount of power using E10 would require 8ml or 9ml of fuel. Under acceleration, e10 will use an extra 30% or more of fuel in order to get the same acceleration as 95 or 98. The Biofuels Association of Australia have confirmed that motorists will see a 1% to 3% increase in fuel consumption using E10, and some studies have suggested that in order for E10 to be cost-effective it needs to be under 80c per litre when compared to \$1.30 per litre of premium.

Recommendations regarding E10 suitability vary from one manufacturer to another, and will also vary between carburettor and fuel-injected engines. Some of the new cars are designed to run on e10 fuel, but don't let it fool you into thinking you will get the same economy out of e10 as you would out of premium - you need to fill it up more often, therefore costing more long-term. Effectively, you are burning money out of your exhaust pipe.

Handy hint while talking about fuel:

Don't run your fuel tank below ¼ tank - with fuel-injected cars, fuel keeps the fuel pump cool and running too low can cause fuel pump to overheat, burning it out prematurely.

Production Automotive is located at Unit 9/61 Batt Street, Penrith. For more information call 4731 6660 or visit online at www.productionautomotive.com.au

