

Everything you need to know about using E10 fuel with your classic car



Photo: The Toms

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It sounds like an additive found in food but from September E10 fuel will be causing headaches for hundreds of thousands of classic car owners. Rather than being a colouring agent or preservative, E10 is the new grade of unleaded petrol that the British Government will introduce this autumn. And it is potentially damaging to modern classics, classic cars and motorbikes alike.

Experts warn that the introduction of E10 is the most significant threat to bold cars since the switch from leaded to unleaded fuel. Four-star fuel was banned in Britain from 2000, on environmental grounds. It's for similar concerns over air pollution and CO2 emissions that E10 will be dispensed by the nation's petrol pumps.

However, the RAC has warned owners of cars built before 2002 that they should steer clear of the new petrol. It estimates that at least 600,000 vehicle owners will be affected. For those drivers, it is likely to mean increased fuel bills, costly vehicle maintenance or, for those that fail to take action, damage to cherished cars.

So what is E10 fuel, why is it being introduced and how can the classic car community prepare for the new fuel coming to our forecourts? Hagerty investigates.

What is E10?

Petrol in the UK already contains up to five percent bio-ethanol. You may have noticed as much; the labelling on unleaded pumps changed to E5 in 2019. But from September E10 will become the new standard with up to 10 percent bio-ethanol in the blend. Produced from crops such as sugarbeet bi-ethanol isn't a fossil fuel and is renewable.

Why is it being introduced?

It's all about emissions. The Government has targeted 2050 as the year that Britain will reduce its greenhouse gas emissions to a net zero. But the journey starts now and by introducing E10 fuel they say that CO2 emissions could be reduced by 750,000 tonnes per year. That's the equivalent of taking 350,000 cars off the road.

What's the problem for classic cars?

Although many cars run on E5 without significant problems, doubling the amount of ethanol in the fuel can cause a variety of issues in older cars. Ethanol is hygroscopic, which means that it absorbs water from the atmosphere. And that water, in turn, finds its way into your car. It can lead to condensation in fuel tanks, fuel lines and carburetors and cause corrosion in brass, copper, lead, tin and zinc components.

As ethanol is also a solvent it can eat through rubber, plastic and fibreglass, so hoses and seals are likely to perish more quickly because of the higher concentration of ethanol in E10. In Department for Transport tests, problems identified included degradation to fuel hoses and seals, blocked fuel filters, damaged fuel pumps, corroded carbs, blocked injectors and corrosion in fuel tanks. Rubber is particularly affected. The Federation of British Historic Vehicle Clubs (FBHVC) has a list of ethanol-friendly materials that can be used as replacements. [See end of story].

Finally, ethanol isn't as energy dense as petrol, which means that the fuel-air mix could be leaner and, ironically, fuel consumption could actually be slightly higher than using E5 or 'pure' petrol.

How many cars are affected?

Although new cars sold in the UK since 2011 had to be E10 compatible, the Society of Motor Manufacturers and Traders has estimated almost 8 per cent of petrol-engined vehicles here are not compatible with E10.

The RAC suggests that up to 600,000 cars on the road aren't compatible with the new fuel. And it's not just historic vehicles that are affected. Anyone owning a car made before 2002 is advised not to use E10 – and it can even affect cars made up until 2011. That's a good number of so-called modern classic cars, in addition to classic models.

Why is the UK introducing E10 later than other European nations?

Phil Monger, Technical Director of the Petrol Retailers Association says the number of cars affected is fewer than in other countries: "Lots of European countries have already introduced E10. We've been working with government for the last couple of years and when we started this, we had rather more non-compliant vehicles, so we felt that we needed to introduce it at a later stage."

Monger stresses that change won't be made overnight and believes that many owners of old cars may have already made modifications since the introduction of E5 fuel. "Vehicles that are very old will have materials that will not be compatible with E5 either. E10 will only hasten the day when it causes you some difficulty with those materials."

Is E10 a 'greener' fuel?

When E10 was introduced to petrol stations across Germany, in 2011, it faced a backlash from local green groups such as Greenpeace and the Nature and Biodiversity Conservation Union. The conversion of land to farms to supply bioethanol has linked to the destruction of forests and wetlands. At the same time, tests have shown that the fuel economy of vehicles using E10 is inferior to E5, raising questions over real-world CO2

What are petrol stations doing to warn drivers?

The Petrol Retailers Association says that there will be an advertising campaign six months before the launch of E10 to advise drivers of the difference between the fuels. They will also introduce a website where you can check if a car is compatible, while on the forecourts fuel pumps will be labelled with a warning.

Needless to say, the introduction of such a website can't come soon enough, and accurate, reliable information will be key to helping vehicle owners take appropriate action.

What is the alternative to using E10 fuel?

The good news is that super unleaded is set to remain at the E5 standard for five more years after the introduction of E10, according to the PRA. And most E5 currently only actually contains 2-3 per cent ethanol anyway.

The bad news is that it costs more – typically 15 pence per litre. So each time you fill up it could cost you an extra £6-10.

What can I do to protect my classic car?

Guy Lachlan, MD of Classic Oils, says classic car owners could face costly preventative maintenance. "You've either got to use fuel with no ethanol or change the materials that don't like it," warns Lachlan.

"If you are in any doubt about your rubber fuel lines, change them. Get rid of your fibreglass petrol tank and install an aluminum one. The other thing ethanol really doesn't like is solder. If you are running a soldered float in your carburetor still then think about carrying a spare – they're generally quite easy to change."

Experts have also warned that even modern classics with turbocharged engines could be impacted by the switch.

Will E10 cause problems for cars in storage?

When it comes to storing your car, if it is older than 1996 and doesn't have a catalytic converter, you can use a lead replacement additive such as Castrol's Classic Valvemaster, which can help prevent corrosion as it also contains an ethanol stabiliser. It's endorsed by the Federation of British Historic Vehicle Clubs.

For modern classics there are catalyst-friendly additives available such as Millers Ethanol Protection Additive or Lucas Oil Ethanol Fuel Conditioner, but your best advice is to check with the vehicle manufacturer or an owners club.

The other option, says Lachlan, is to make sure that you don't give the ethanol a chance to absorb water from the air by filling the tank fully, sealing it, or conversely, fully draining it before storage.

What if I fill up with E10 by mistake?

The RAC advises that, unlike putting diesel into a petrol car (or vice versa) you shouldn't need to drain the tank. It could cause pinking and make it harder to start from cold, but one fill-up shouldn't cause lasting damage. Just try to top up with E5 as soon you can – ideally when you've used at least a third of the tank – and don't leave the car in storage until you've done so.

Where can I find more information about E10 and classic cars?

There is a wealth of information on the website of the FBHVC (<https://www.fbhvc.co.uk/fuels>), including detail of the materials that could be adversely affected by the ten per cent bioethanol mix, and approved after-treatments that can help guard against corrosion.