

E10 ethanol petrol blend bulletin

From September 2021, standard 95ron petrol will have its ethanol content increased from 5 to 10% (E5 to E10 respectively).

Ethanol blended petrol is less harmful to the environment than unblended petrol, with less carbon monoxide emission produced. The disadvantage of ethanol blended petrol is that it isn't suitable for all vehicles, especially older vehicles.

The UK Government's own analysis shows that there are around 1 million petrol cars registered in the UK that are not approved for use with E10, as well as a significant number of motorbikes and scooters. Many of these are classics, but around half are less than 25 years old.

So what's the problem with ethanol for these vehicles, and how does Classic Valvemaster and Classic Valvemaster Plus ensure compatibility with E10 blends?

Moisture

Ethanol is hygroscopic, so attracts moisture from the air. Water will mix with ethanol, but does not with petrol, so drops to the bottom of the fuel tank taking some of the ethanol with it - this is known as Partial Phase Separation. With enough water the ethanol in the fuel will become saturated, and drop out of suspension completely (Phase Separation).

Classic Valvemaster and Classic Valvemaster Plus contain Etha-Guard additive – this additive counteracts moisture, stabilising fuel. This prevents water separating from the fuel and sitting in the bottom of your fuel tank. This is especially important for vehicles that are laid up for a long period of time, as is common for classic cars in winter.

Acidity

A further issue is that ethanol mix fuels can become acidic. Ethanol fuels are not acidic when they come out of the fuel pump; however, acidity can be caused by a reaction to CO₂.

CO₂ is extremely soluble in ethanol, so like moisture will be attracted to an ethanol fuel blend from the atmosphere. In the presence of water, it will convert to carbonic acid – effectively becoming rain water, which is mildly acidic at pH 5.6.

When the pH of ethanol drops below 6.5, it can cause fuel pumps to malfunction (due to film forming between the brushes and commutator), fuel injectors to fail from corrosion, and excessive cylinder wear.

Because Etha-Guard stabilises ethanol mix fuel in the presence of moisture, water is unable to separate from the fuel in the first place, thus preventing the acidification process and possible damage.

VALVEMASTER™ AND VALVEMASTER PLUS™

Manufactured in the UK and distributed by:

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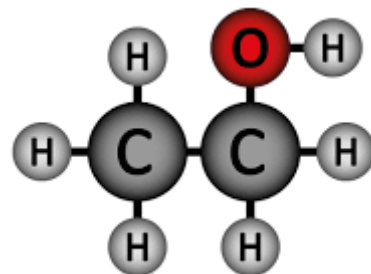


Hot-running

A final issue to be aware of is that of hot running. However, this is not as straightforward as it sounds, and we need to look at the chemistry once again.

Ethanol actually burns at a lower temperature than petrol. If you look at the molecular structures of petrol and ethanol, you will see a major difference – ethanol contains an oxygen atom, whereas petrol is oxygen free.

When the ethanol petrol blend is combusted in the engine, the oxygen supplied by ethanol that would not be there in pure petrol is now added, causing the fuel-air mixture to become leaner. This can result in hot running, which can be resolved by setting your fuel mixture slightly richer.



Which product is right for my vehicle?

Both Classic Valvemaster and Classic Valvemaster Plus must only be used in vehicles that are not equipped with a catalytic converter.

Both products contain Etha-Guard additive, and are already well known in the classic car world for offering the best protection against valve seat recession and pinking. With the addition of Etha-Guard, Valvemaster now offers a higher level of protection to even more vehicle owners. Etha-Guard stabilises E5 and E10 petrol, preventing damage to your fuel system.

Classic Valvemaster Plus also contains a friction modifier. This has the further benefit of increasing acceleration by up to 3%, and increasing fuel economy by up to 2% - meaning it pays for itself!

Visit www.classicvalvemaster.co.uk for further information



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