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Confidence comes from within

Tech Talk tips / techniques / training

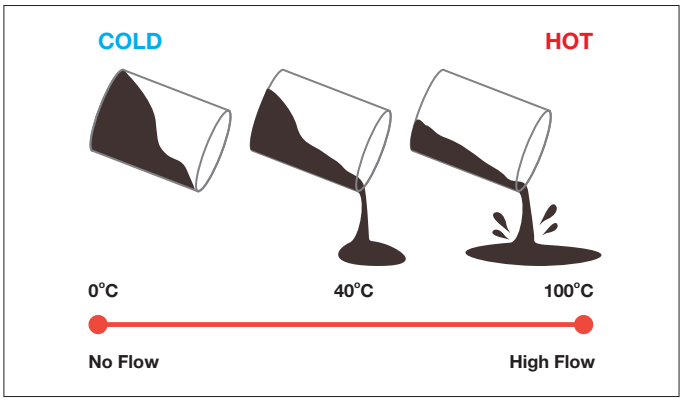
What is viscosity?

Viscosity

The term viscosity means the thickness, or the ability to flow, of a liquid material at a given temperature – if you think about water and treacle at normal room temperature, then the treacle is more viscous than water. In reality, engine oil sits somewhere between these two. The higher the viscosity, the more difficult is it for the material to flow. However when a viscous fluid is heated, this enables the material to flow more easily. Viscosity is a very important factor when choosing the correct oil for a vehicle as it forms part of the OEM's specification requirements.

Why are there two numbers for oil viscosity?

Most modern oils are described as multi-grade which means that they contain additives that improve their performance at the extremes of temperature. The viscosity of a multigrade oil is shown as two numbers separated by a 'W' (or perhaps a dash or slash). Oils that only have a single number representing their viscosity are described as mono-grade and are usually only directly suitable for older, classic vehicles. These numbers DO NOT directly represent temperature, they are purely related to the viscosity of the oil (i.e. a 5W-30 viscosity oil does NOT mean it is only suitable for temperatures between 5 and 30°C!!!).



'Cold' Performance

The cold performance relates to the oil viscosity when the engine is cold, and this is important as the oil will need to provide protection very quickly at start up.

'Hot' Performance

The hot performance relates to oil viscosity when the engine is at operating temperature; this will help maintain a protective oil film layer in all the critical areas even when the engine is hot.

What's the difference between a multi-grade and mono-grade oil?

Mono-grade oils are generally used for classic and older vehicles, when multi-grade oils were not available. For older vehicles, this meant that the oil needed to be changed for the winter and summer, so a higher viscosity when the climate was warmer and a lower one when it got colder.

This meant changing the oil on a more frequent basis, as a thicker oil would not perform as well as it could during the colder months. Multi-grade oils get round this by having a viscosity profile suitable for when the ambient conditions are cold, but also maintaining a suitable viscosity when warm and thus provide adequate protection all year round.

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Is viscosity important when choosing an engine oil – didn't you say before that it is dependent on the OEM specification?

When choosing an engine oil, it is important to observe the manufacturer's specifications as well as the viscosity that they require. The viscosity is a fundamental aspect of the OEM's specification, although at other times the OEM may allow for a range of viscosities. **Always use the Comma Application Guide to ensure you get the right oil with the right specification with the right viscosity.**

Comma recommends XT2000 15W-40 for my car on the Comma website but the dealer has told me I need a different viscosity?

The recommendations on our website are correct: they're based on data from the OEM. OEMs can specify a number of viscosities for some models, and so it may be suitable to use 15W-40 or other viscosity. If you have any doubt then please contact Comma. Comma's recommendations are 100% guaranteed.

I see Comma now have more lower viscosity oils in the PMO range, why is this?

Most vehicle manufacturers are moving to lower viscosity oil (5W30s, 0W-30s, 5W-20s, 0W-20s) due to the fuel economy benefits that these bring. However, there are also targets and standards for vehicle emissions which must be met, and each manufacturer has their own way of achieving this. The different demands of the manufacturers has led to multiple products of the same viscosity and whilst we do our best to try and combine these specifications it's virtually impossible to combine the requirements of every manufacturer into a single, cost effective product.

How do I know which product to use on which car?

The safest way to make product recommendations is to use one of Comma's application tools. At www.CommaOil.com you will find product recommendations with 100% compatibility guarantee for engine oil and antifreeze & coolant for virtually every European vehicle going back over 30yrs, including system capacities and recommended service intervals. It also covers brake fluid, gear oil and power steering fluid should you find you need some help with those as well.

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