

So, where are we now?

Probably confused.

But what we have learnt is that if you are to get the correct oil for your car you must consider what is the correct viscosity, the right level of performance and whether you have any special catalyst or exhaust filters that you need to protect. Get any one of these wrong and it could be very costly in repairs.

Isn't there a better way?

Fortunately yes!

Although you can look through the handbook that came with your vehicle and then, armed with the information provided, go down to your local Motor Factor or Autoparts Store and study the fine print on the labels of the oils on offer until you find a match, there is another way.

Most of the well known lubricant suppliers and some of the bigger stores have the facility on their websites for you to simply put in the registration number of your vehicle and the system will do the rest. The lubricant industry has developed some independent databases that list all the requirements of practically any car which can be identified by model or, increasingly, by the registration mark. The DVLA provides a service that allows the exact make and model to be accurately found so that there is no chance of an error. Some of the sites will also be able to tell you the nearest stockist of the correct product if you also input your post-code. What could be simpler?

But it's not all over yet!

Before we leave the subject of choosing the right oil there are a couple of other points that we need to consider.

If you change the oil in your car yourself then you will have to dispose of a quantity of used oil. Used oil is quite a nasty material and you should wear gloves to keep it off your skin. Also it should NEVER be poured down drains or onto land as it can really cause some damage to the environment. Fortunately most Councils now accept used oil at the recycling centres. If you want to find your nearest site then you can use a web site set up by the Environment Agency (www.oilbankline.org.uk) or alternatively call the Oil Bank Line on 03708 506 506.

So you have found the right oil for your vehicle, changed it and properly disposed of the old oil. Job done? Well not really. You still have to check the level from time to time.

Oil drain intervals are much longer these days than they were say 15 or 20 years ago. This is good news but the bad news is that this can mean that once the oil has been replaced it is sometimes forgotten. Most cars use a little oil and although engines are fitted with low oil indicators these should be seen as a last resort. It is much better to get into the habit of checking the oil level using the dip-stick on a regular basis, say at least once a month or more frequently if you see that your car does need regularly topping up.

Don't forget to do this when the car is standing flat and not on sloping ground. If the engine has been running then leave a few minutes for the oil to find its way back into the sump. You might like to top up the windscreen washer bottle or check the tyres while you are waiting.

Also don't overfill with oil. This can also cause problems as some of the oil can get carried over into areas where it's not suppose to be such as catalysts and exhaust filters.

Now the job is done

I hope that these notes will assist you in finding the right oil for your car, changing it and properly disposing of the used oil.

It really doesn't have to be complicated and if you do it right you should maximise the life of your engine and minimise repair and fuel costs.

Happy Motoring.

For more information
on the safe handling of oil please visit the Oil Care
Campaign website www.oilcare.org.uk



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Factsheet

**A guide to higher performance
and lower emissions**

Choosing the
right
oil
for your car

Why do oils have to be so complicated?

If you visit a local car parts supermarket or spend time on the web trying to find the right oil for your car, you cannot fail to notice just how many different types are available. A recent trip to such a store yielded 14 different oils in the store's own brand alone. On top of this were over another 20 oils from different makers and this was just engine oils so didn't include all the gear and transmission product on sale.

Why are there so many oils?

The grade of oil that is used in an engine is stipulated by the manufacturer of the engine or vehicle and, as engines have developed over time, so have the oils needed to lubricate them. Engines have needed to get smaller but more powerful, faster but quieter, longer lasting but with less frequent oil changes and all with sumps that are much smaller now than a few years ago. If we add to this the fact that many of the additives that have worked well in the past lubricating engines can now only be used at lower concentrations (to prevent the catalysts needed to reduce emission becoming damaged) you can see that modern oils are quite unlike their predecessors of twenty five years or so ago.

A short history lesson

Back around 1990 if you booked your car in for a service there was a very fair likelihood that the oil used would have been a 15W-40 multigrade meeting the industry-standard American Petroleum Institute or API specs SH/CF and probably very little else. At the time these were quite sophisticated products and had replaced a lot of the earlier 20W-50 multigrades which, in turn, had replaced the old monogrades that needed changing with summer and winter.

However the use of 15W-40 engine oils did not last long. It had been known for some time that much of the wear in an engine occurred within a few minutes of start-up because the oil was cold and thick and stuck in the sump. What was needed was oil which was not so thick when cold that could circulate more easily around the engine at start-up and this need was met by the introduction of 10W-40 oils. These could flow at temperatures 5 degrees Celcius lower than a 15W-40 and 10 degrees better than a 20W-50 meaning that on cold mornings they would get round the engine quicker to the parts that needed lubricating which in turn meant less wear.

The 15W-40 oils and everything before them could easily be made from mineral base oils derived from crude oil in a refinery. This was much more difficult for 10W-40 and so some special synthetic base oils were needed.

These "synthetics" were higher performing base oils and, in particular, had better low temperature properties. They were however much more expensive to make so were mixed with mineral oils to get the right level of performance. This mixture of synthetic and mineral base oils gives products known as "semi synthetic" and these became increasingly important as the 1990s went by as they met the more stringent performance demands of car manufacturers.

At this time there was not the need we see today to increase fuel economy and reduce emissions. This was just about to get started and with this would come yet more changes.

One way of achieving better fuel economy is to use a thinner lubricant as this requires less energy to pump it round the engine. Naturally the engine must be designed to use a thinner product, if not then excessive wear can occur.

It should come as no real surprise that if cars were running on a "40" weight oil such as a 10W-40 then the next step in moving to a thinner product would be a "30" weight grade. Generally the preferred grade was a 5W-30 fully synthetic product (rather than a 10W-30) as by now oils were expected to have both an even better low temperature performance and also to allow a longer drain interval – both characteristics of moving to a higher specification 5W synthetic grade.

The importance of the need to have longer drain intervals also meant that premium 5W-40 fully synthetic product were becoming increasingly popular with drivers who liked the idea of the additional performance that came with synthetic grades and wanted to reduce wear at start-up but whose engines didn't allow them to use the thinner 5W-30 products. In terms of the viscosity

grades available this brings up almost up to date. Recently we are beginning to see some even more fuel efficient oils such as 0W-20 grades entering the market for engines designed to work with very thin oils but beware, these are not suitable for older engines so don't think that just by using an oil like this you will get better fuel economy. You won't and you will certainly damage your engine in the process.

So, to recap, over time we have seen oils for car and van engines moving from 20W-50s through 15W-40s and 10W-40s to 5W-30s and 5W-40s and now on to 0W-20s. One of these types will be right for your car depending on the age of your vehicle. But just from the fact that there are at least six different viscosity grades, you can begin to see why the shelves of your local car parts supermarket have so many different products from which you have to find the right one.

When oil is described as "15W-40" – what does this mean?

Today almost all oils for car and van engines are "multigrade" products. This means that they can be used both in summer and winter months and there is none of the oil changes with the seasons that our grandparents had to contend with.

Both numbers represent the viscosity or thickness of the oil and the higher the number the thicker the product. The first number (the one before the "W") described the thickness when cold i.e. how the oil behaves on a cold winter's morning while the second number is related to how thin the oil is when the engine is running hot.

You don't have to worry too much about how these are measured. Just follow the recommendation in your car's handbook and you will be OK.

Performance matters

However, this is just a start. Not only is the thickness or viscosity of the oil important so is the level of performance that the additives it contains bring to the product. Additives are used to enhance the performance of the oil, ensuring it meets the needs of today's motorist. There have been a number of ways of describing this performance level over the years but currently there are two main systems in place.

The American Petroleum Institute (API) has a series of "S" grades for cars and vans with petrol engines. Back in the 1990s you would expect to see an oil meeting the "SH" specification but over the years improvements have come along and we are now up to API SN. As you will gather the further through the alphabet we are, the higher the performance of the oil.

In the mid 1990s a body called ACEA was set up to set the standards for European oils. Initially they had "A" grades for petrol engines and "B" grades for diesel engines in cars and vans. Some years later they combined these so now on a label you might see things like "A1/B1" or "A3/B4". The actual specification you need will be set by the car manufacturer and will be shown in your handbook.



Lowering emissions

We have seen that with the drive for better fuel economy, the viscosity of oils became lower so less energy was used in pumping thick product around the engine. Burning less fuel means less carbon dioxide (CO₂) is released into the atmosphere which is good for everyone. However CO₂ is just one type of emission that car makers strive to reduce.

Engines emit poisonous gases such as nitrogen oxides and carbon monoxide in addition to unburnt hydrocarbons from the fuel; diesel engines tend to emit soot and other small particles such as ash. Since the mid 1990s there have been rules laid down by governments to control these emissions and every few years they get tougher to meet. Since 2014 the industry has been working to limits known as "Euro VI" and these are impossible to meet without the addition of catalytic converters for all vehicles and, for diesel engines, particulate filters to stop soot and ash particles from coming out of the exhaust.

These exhaust after-treatment devices (as they are generically known) work very well if they are looked after. They can be very expensive to replace and if they fail your car will not get through the MoT test. The problem is that some of the components that have been used for many years to formulate engine oils can have a detrimental effect on these devices. So new technologies have had to be developed and a new set of specifications (ACEA "C" class) has had to be introduced to define them.

Enter the Car Makers

As well as the specifications defined by industry bodies in the USA and Europe a number of car manufacturers, or Original Equipment Manufacturers (OEMs) to use a common term for them, have their own requirements. Some of these are pretty similar to the industry standards, some less so.

Not all manufacturers adopt this approach but if you have a modern VW/Audi/Skoda or SEAT (all part of the same group) the handbook will probably mandate the use of an oil meeting their VW 504.00/507.00 specification. Mercedes-Benz could well specify the use of a product meeting their MB 229.51 specification while BMW might ask for an oil of BMW LL-04 quality. Ford, Vauxhall, Porsche and Peugeot amongst others all have their own specifications.

Not many of these oils are unique and it is not uncommon for a product to meet a lot of different OEM specifications as well as having an ACEA and API classification. However some of these are mutually exclusive and the UKLA through a programme called the Verification of Lubricant Specifications (VLS) is trying to make sure that claims that cannot be justified are not made.