THE ACEA SYSTEM
The European ACEA system, introduced in 1996, includes the 'E' series of engine oils for heavy commercial use. They are largely based upon the Mercedes Benz classification system, shown in brackets.

E4:12 (MB p228.5)

These oils are Ultra High Performance Diesel (UHPD) lubricants designed for use in severe duty, long-drain applications, typically SAE 10W-40 and 5W-30 based on API Group III base oils.

E6:12 (MB p228.51)

These oils are low SAPS Ultra High Performance Diesel (UHPD) lubricants designed for use in severe duty, long drain applications. ACEA E6-12 oils are typically SAE 10W-40 based on API Group III base oils.

E7-12 (MB p228.3)

These oils are Super High Performance Diesel (SHPD) lubricants for use in mid-drain applications. ACEA E7-12 contains many elements of the North American API CI-4 specification. ACEA E7 is the minimum performance requirement for heavy duty applications. ACEA E7-12 oils are typically SAE 15W-40 based on API Group I base oil.

E9-12 (MB p228.31)

These oils are new mid SAPS requirement Ultra High Performance Diesel (UHPD) lubricants for use in mid drain applications recommended for use in vehicles fitted with advanced exhaust after treatment systems for the reduction of particulate matter (DPFs) and the oxides of nitrogen (EGR and/or SCR) in combination with low sulphur diesel fuel. ACEA E9-12 oils are SAE 15W-40 based on API Group II base oils and 10W-XX based on either API Group II or Group III or a mix of Group II/III base oils.

Source: www.Lubrizol.com

Any oil which does not carry an API or ACEA performance specification or some type of approval from a major vehicle manufacturer is highly suspect and in the interest of safety must be assumed to fall into the lowest category, i.e. API CA, which became obsolete in the 1950s.

It is essential that oils of at least the correct requirement are used, although higher specification oils, in the same category, should be used as soon as they become available if maximum benefits in fuel economy, engine protection performance and operating costs are to be obtained. However, it must be appreciated that an engine which has been operating on a very poor-quality lubricant for some time may well be beyond saving, since it is likely to have suffered build-up of sludge deposits which could be displaced by the detergency power of a modern good-quality oil. Blocked oil-ways could well result.

Unlike in some other countries, there is currently no legislation in the UK to ensure that all oils marketed are fit for purpose. It is recommended therefore that as a minimum all end-users seek confirmation from their suppliers that the oil selected is fit for the intended purpose. Furthermore the UKLA suggests that documentary evidence is provided.

Oil Prices, Long Drain Intervals and Value for Money
Those who are tempted by low prices should be aware that modern high technology oils will actually provide better value for money in that improved fuel economy will result, in addition to vastly improved engine protection. Typically these fuel savings alone will often outweigh the perceived extra cost of the oil.

The major issue for the fleet user however, is the potential of extended drain intervals which reduces the time the vehicle is out of service, as well as reducing maintenance costs. The benefit in itself will more than offset the higher prices for high-performance oils.

Disposal of used oil
Used engine oils can be hazardous. Minimise skin contact, clean up oil spillages and ensure collection of bulk oil is by a properly licensed waste oil carrier.

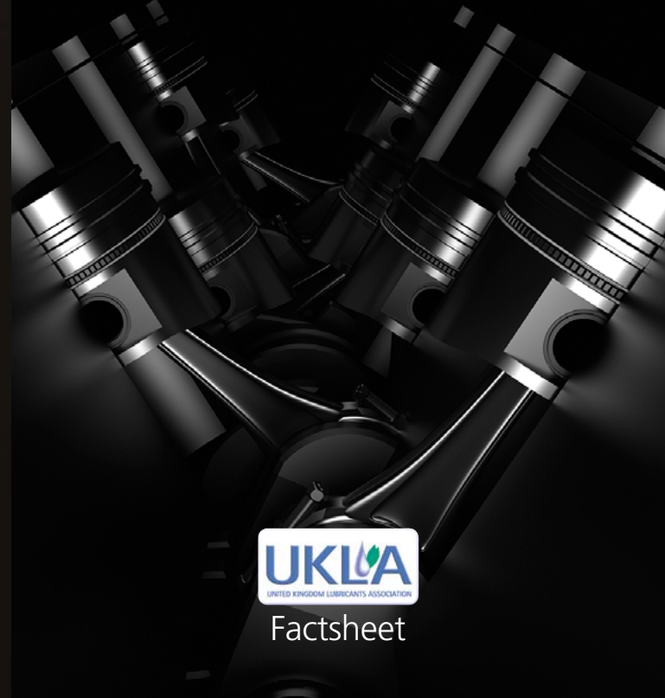
For more information
on the safe handling of oil please visit the Oil Care Campaign website **www.oilcare.org.uk**

Berkhamsted House
121 High Street, Berkhamsted
Hertfordshire, HP4 2DJ, United Kingdom

Tel: +44 (0)1442 875922
Websites: www.ukla.org.uk

Select the correct oil for your vehicle

Commercial Diesel Engine oils



Factsheet

An important message for fleet operators and buyers
Correct lubrication

- Saves fuel
- Reduces maintenance
- Extends engine life

The purpose of this leaflet is to help you select the correct oil for your VEHICLE!

Correct lubrication can save hauliers literally the price of many litres of fuel a year in addition to prolonging the engine life of their vehicles and helping to maximize performance.

Too often the phrase 'oil is just oil, isn't it'?, is heard. In reality oil is not just oil but is a highly sophisticated mixture of components, designed expressly to maintain internal cleanliness and reduce friction wear in the engine.

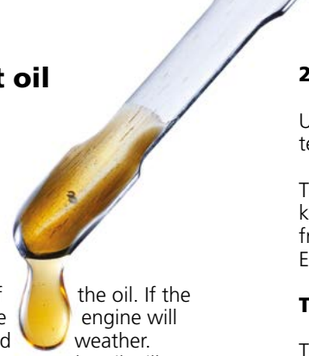
The evolution of commercial diesel engine vehicles

In the early days of motoring oil, refined from crude oil was the only component of an engine oil. Oil changes were frequent due to the rapid breakdown of the oil, e.g. every 250 miles for a 1921 Scammel truck. The low powered engines of that period also needed frequent servicing, with re-bores required at least at every 10,000 miles, for example.

Compare that with today, where heavy duty diesel engines with many times more power will cover literally hundreds of thousands of miles without major overhaul, and with oil change intervals now extending up to 50,000 miles and more.

The stress on the lubricant, in terms of operating conditions and life expectancy, has increased enormously, and the performance of today's lubricants has only been made possible through improvements in additive technology and the use of high quality West European basestocks or synthetic fluids. In addition, comprehensive oil condition monitoring programmes and wider viscosity bands will deliver the benefits of improved engine protection and extended drain intervals.

How do I select the right oil for my vehicle?



First check your vehicle manufacturer's advice in the workshop manual!

1. VISCOSITY REQUIREMENTS

Viscosity is quite simply the thickness of the oil. If the viscosity of the oil is too high (thick), the engine will be difficult to start particularly in the cold weather. Also, because the oil is more difficult to pump, the oil will not reach all parts of the engine quickly enough after start-up to prevent wear taking place.

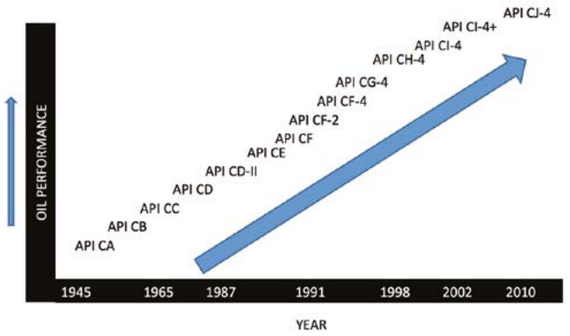
If the viscosity of an oil is too low (thin), there is a danger that the lubricant film will break down in bearings, allowing metal-to-metal contact to take place, which will produce rapid wear.

Multigrade viscosity motor oils are now universally used in the UK, probably the most typical today being 10W/40. These types of oils were introduced in the late 1940s to allow the same grade of oil to be used in summer and winter.

It is important that an oil of the correct viscosity is used. A vehicle manufacturer will normally stipulate a range of viscosities in the vehicle handbook, which depend on typical local ambient temperatures in the region in which the vehicle is normally used.

However, the viscosity rating of an oil is no guarantee of the 'quality' of an oil NOR of its ability to protect the engine over long periods of time.

THE GRAPH ILLUSTRATES HOW THE PERFORMANCE OF MOTOR OILS HAVE INCREASED OVER THE YEARS WITH THE INTRODUCTION OF NEW SPECIFICATIONS



2. PERFORMANCE REQUIREMENTS

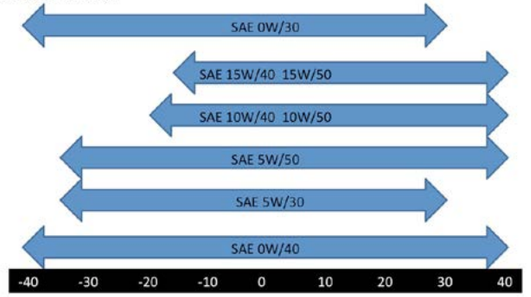
Unfortunately, the terminology used to differentiate oils in terms of performance is complex .

The two most commonly used specification systems are known as the American Petroleum Institute (API) system from North America , and the Association des Constructeurs Europeen d'Automobile (ACEA) system from Europe.

THE API SYSTEM

The API designation is based on an alphabetical system, with the letters API being followed by 'C' (Commercial) series for diesel engine oils. For the example of diesel engine qualities, specifications have advanced over the years from the pre 1940s CA to today. The 'CA' category mainly of mineral oil, with little in the way of any additives to provide extra performance. As oil technology improved, specifications moved upwards, being introduced in the years shown overleaf:

THE DIAGRAM ILLUSTRATES HOW OILS OF APPROPRIATE VISCOSITY CAN BE SELECTED ACCORDING TO OUTSIDE TEMEPRATURES (BUT SEE MANUFACTURERS' INSTRUCTIONS FOR INDIVIDUAL VEHICLES)



AMBIENT TEMPERATURE DEGREES CENTIGRADE

The current API grades are as follows;

CG-4

Introduced in 1995 for severe-duty, high-speed, four-stroke diesel engines, designed to meet 1994 emission standards, for use with fuel with less than 0.5% weight sulphur. Can be used in place of CD, CE and CF-4 oils.

CH-4

Introduced in December 1998 for high-speed, four-stroke engines designed to meet 1998 emission standards, for use with fuel with less than 0.5% weight sulphur.

CH-4 oils, which are technically superior to all the previous categories, may be suitable for extended oil drain interval use but only if recommended by the vehicle manufacturer.

CI-4

Introduced in 2002 for high speed four stroke engines designed to meet 2004 exhaust emission standards implemented in 2002. CI-4 oils are formulated to sustain engine durability while exhaust gas recirculation is used with diesel fuels ranging in sulphur content of less than 0.5% weigh. Can be used in place of CH-4 oils.

CI-4+

Introduced in 2004, CI4+ is used in conjunction with API CI-4. CI-4 PLUS oils are formulated to provide a higher level of protection against soot-related viscosity increase and viscosity loss due to shear in diesel engines..

CJ-4

For high-speed four-stroke cycle diesel engines designed to meet 2010 model year on-highway and Tier 4 non road exhaust emission standards as well as for previous model year diesel engines. These oils are formulated for use in all applications with diesel fuels ranging in sulphur content up to 0.05% by weight. However, the use of these oils with greater than 0.0015% by weight sulphur fuel may impact exhaust after treatment system durability and/or drain interval. API CJ-4 oils exceed the performance criteria of CH-4, CG-4 and CF-4. When using CJ-4 oil with higher than 15 ppm sulphur fuel, consult the engine manufacturer for service interval.

Source: www.API.org