

The current API categories consist of the following:

#### CF-4

Introduced in 1990 for high-speed, four-stroke, naturally aspirated and turbocharged diesel engines. Can be used in place of CE oils.

#### CF

Introduced in 1994 for off-road, indirect-injected and other diesel engines including those using fuel with over 0.5% weight sulphur. Can be used in place of CD oils.

#### CF-2

Introduced in 1994 for severe-duty, two-stroke diesel engines requiring highly effective control over cylinder and ring-face scuffing and deposits. Can be used in place of CD-II oils.

#### 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.

#### 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.

#### E1:96 Issue 2 (MB p227)

For use in general heavy duty diesel engines, replacing the obsolete CCMC D4 category.

#### E2:96 Issue 2 (MB p228.1)

Oils of 'super high performance diesel' quality intended for more severe use in heavy-duty diesel engines including extended drain intervals and turbocharged engines.

#### E3:96 Issue 2 (MB p228.3)

Oils of 'extra super high performance diesel' quality intended for the most severe use in heavy-duty diesel engines including extended drain intervals and turbocharged engines.

#### E4:98 (MB p228.5)

This category was introduced with even more stringent limits than the E3 oils, and normally require very high quality mineral oil basestocks, or synthetic basestocks, in order to meet the requirements. Bore polishing, and piston and turbocharger deposits are evaluated to ensure oil performance.

#### E5:99

Engine tests in this category also evaluate turbocharger deposit and oil behaviour under extended oxidation, but the limits have been re-evaluated in order that oils formulated from more conventional basestocks will meet the requirements.

*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 oilways 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 BLF 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.

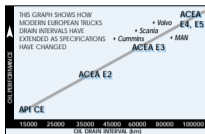


*Beware, low prices can mean low quality and questionable performance.*

The major interest

to 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. This 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, cleanup oil spillages and ensure collection of bulk used oil is by a properly licensed waste oil carrier.

This leaflet has been produced and distributed by the British Lubricants Federation, the trade association representing the British Lubricants Industry.

# Lubrication

Commercial Diesel Engine Oils Fact Sheet

## BLF

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