

TECHNICAL DATA SHEETS

VISCOSITY

In a 10W-40 example the 10W bit (W = winter) simply means that the oil must have a certain maximum viscosity/flow at low temperature. The lower the "W" number the better the oils cold temperature/cold start performance.

The 40 in a 10W-40 simply means that the oil must fall within certain viscosity limits at 100°C. This is a fixed limit and all oils that end in 40 must achieve these limits. Once again the lower the number the thinner the oil, a 30 oil is thinner than a 40 oil at 100°C etc.

API SPECIFICATIONS (American Petroleum Institute)

This is split into two categories. S = Petrol and C = Diesel, most oils carry both petrol (S) and diesel (C) specifications.

SG	Introduced 1989 have much more active dispersant to combat black sludge.
SH	Introduced 1993 have same engine tests as SG, but includes phosphorus limit 0.12%, together with control of foam, volatility and shear stability.
SJ	Introduced 1996 has the same engine tests as SG/SH, but phosphorus limit 0.10% together with variation on volatility limits.
SL	Introduced 2001, all new engine tests reflective of modern engine designs meeting current emissions standards.
SM	Introduced November 2004, improved oxidation resistance, deposit protection and wear protection, also better low temperature performance over the life of the oil compared to previous categories
CD	Introduced 1955, international standard for turbo diesel engine oils for many years, uses single cylinder test engine only
CE	Introduced 1984, improved control of oil consumption, oil thickening, piston deposits and wear, uses additional multi cylinder test engines
CF4	Introduced 1990, further improvements in control of oil consumption and piston deposits, uses low emission test engine
CF	Introduced 1994, modernised version of CD, reverts to single cylinder low emission test engine. Intended for certain indirect injection engines
CF2	Introduced 1994, defines effective control of cylinder deposits and ring face scuffing, intended for 2 stroke diesel engines.
CG4	Introduced 1994, development of CF4 giving improved control of piston deposits, wear, oxidation stability and soot entrainment. Uses low sulphur diesel fuel in engine tests.
CH4	Introduced 1998, development of CG4, giving further improvements in control of soot related wear and piston deposits, uses more comprehensive engine test program to include low and high sulphur fuels.
CI4	Introduced 2002, developed to meet 2004 emission standards, may be used where EGR systems are fitted and with fuel containing up to 0.5 % sulphur. May be used where API CD, CE, CF4, CG4 and CH4 oils are specified.

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ACEA SPECIFICATIONS (Association des Constructeurs Europeens d'Automobiles)

This is more specific in what the performance of the oil actually is. A = Petrol, B = Diesel and C = Catalyst compatible or low SAPS

A1	Fuel economy petrol.
A2	Standard performance level.
A3	High performance and/or extended service interval.
A4	Reserved for future use in certain direct injection engines.
A5	Combines A1 fuel economy with A3 performance.
B1	Fuel economy petrol.
B2	Standard performance level.
B3	High performance and/or extended service interval.
B4	For direct injection car diesel engines.
B5	Combines B1 fuel economy with B3/B4 performance.
C1-04	Petrol and Light duty Diesel engines, based on A5/B5-04 low SAPS, two way catalyst compatible.
C2-04	Petrol and light duty Diesel engines, based on A5/B5-04 mid SAPS, two way catalyst compatible.
C3-04	Petrol and light duty Diesel engines, based on A5/B5-04 mid SAPS, two way catalyst compatible, Higher performance levels due to higher HTHS

Abbreviations:

SAPS - Sulphated Ash, Phosphorous and Sulphur

HTHS – High-Temperature, High-Shear

EGR - Exhaust Gas Recirculation

Basically, pick an oil with whatever rating most suits your car, but generally the later the rating the better together with the most suitable Viscosity rating.