

# ENGINE OIL CLASSIFICATIONS



## petrol engine oils

**SG**

Introduced in 1989 to provide improved control of engine deposits, oil oxidation, rust and corrosion and engine wear relative to oils developed for previous categories.

**SJ**

Released in late 1996 to enhance the SH, now superseded, performance level. Improvements include better fuel economy, longer lubricant life and lower phosphorus levels.

**SL  
(ISAC  
GF-3)**

Released in 2001, more emphasis is placed on fuel economy, emission system protection, valve train wear, sludge deposits and oil consumption compared to SJ level lubricants. Lower viscosity grades require Group II or Group III base oils to meet SL volatility limits.

**SM**

1998 to comply with increased soot handling ability, piston ring wear, valve sliding wear (Cummins M11) and high sulphur fuel performance.

## diesel engine oils

**CC**

Introduced in 1961, lubricants of this type were intended for engines operating in moderate to severe duty service. Oils designed for this service provide protection from high temperature deposits and bearing corrosion.

**CD**

In 1975 oils with this designation were introduced for naturally aspirated, turbocharged or supercharged diesel engines and provided additional protection from high temperature deposits and bearing corrosion.

**CE**

For heavy duty turbocharged and supercharged diesel engines manufactured since 1983, and operated under low speed, high load and high speed, high load conditions.

**CF2**

Improved control over cylinder and ring face scuffing as well as deposits were incorporated into CF-2 oils for severe duty two stroke diesels in 1994. May be used where CD-11 oils are recommended.

**CF4**

Exceeding the requirements of CE oils, CF-4 oils provide improved control of oil consumption and reduces piston deposits. Introduced in 1990.

**CG4**

Released in 1994 for severe duty diesel engines using fuels ranging from .05% sulphur to .50% sulphur. Intended for both high speed four stroke diesels used in both on and off highway applications. These oils provide effective control over high temperature piston deposits, wear corrosion, foaming, oxidation and soot accumulation. Especially effective in engines designed to meet 1994 emission standards and may also be used in engines requiring API CD, CE and CF4.

**CH4**

Cleaner emission engines and fuel technology demanded a higher standard of lubricant. CH4 was released in 1998 to comply with increased soot handling ability, piston ring wear, valve sliding wear (Cummins M11) and high sulphur fuel performance.

**CI4**

Introduced in 2002 for oils use in high speed four stroke cycle diesel engines designed to meet 2004 exhaust emission standard. Formulated to use in engine where Exhaust Gas recirculation (ERG) and other after treatment devices may be used and where diesel fuel contains up to 0.05% by weight in sulphur content. CI4 oils can supersede API CH4, CG4 and CF4.

**CI4+**

In conjunction with CI4, CI4+ was implemented in 2004 to increase the level of protection against soot-related viscosity increase and viscosity loss due to shear in diesel engines.

**CJ4**

Introduced in 2006 for high speed four stroke diesel engines to meet 2007 highway exhaust emission standards. These oils are especially effective at sustaining emission control system durability where Diesel Particulate Filters (PDF) and other advanced after treatment systems are used. Designed for use in all applications with diesel fuels up to 500ppm sulphur content, however use of these oils with greater than 15ppm sulphur fuel may impact exhaust aftertreatment system durability and/or oil drain interval. Optimum protection in particulate filter blocking, catalyst poisoning, engine wear, piston deposits, low and high temperature stability, soot handling properties, oxidative thickening, foaming and viscosity loss due to shear. CJ4 exceeds performance criteria of CI4 plus, CI4, CH4 CG4 and CH4 oils.

## how to select engine oils

When selecting engine oil, there are two choices to be made:

### Viscosity

Determined by the Society of Automotive Engineers (SAE) this measures the resistance of oil to flow. The lower the number the less resistance to flow. For instance, 15W40 engine oil will flow more easily than 20W50 engine oil. Generally, as a rule, lighter grades of engine oil are for more modern cars, post 1990, and the heavier grades are for the earlier cars.

### Service Classification

Petrol engine oils typically use a Service Classification (S) and Diesel engines use a commercial classification (C) when describing the performance characteristics of engine oils for use in passenger cars, trucks and other equipment.