

# Engine Oil Guide

## Guidelines to help you get more from your engine oil.

Refer to your owner's manual for type of oil to use.

Follow manufacturer's oil change recommendations.

Use only the recommended API category: "S" for gasoline engines; "C" for diesel engines.

Select the proper SAE oil viscosity grade.

If you find it necessary to mix brands of oil, use the same viscosity grade and API service category to maintain performance.

Properly dispose of used oil. Learn more about recycling used oil on the web at [www.recycleoil.org](http://www.recycleoil.org). Go to [www.earth911.org](http://www.earth911.org) for used oil collection center locations.

**Look for the API Certification Marks every time you buy engine oil.**

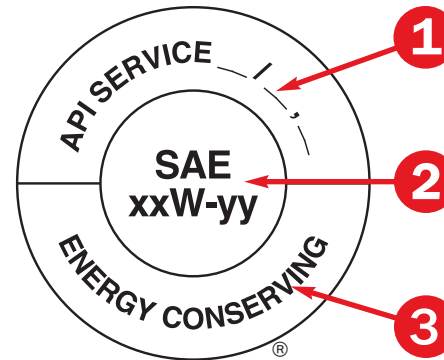
**Ask for API-licensed oil whenever you have your oil changed.**



### The API Certification Mark, also known as the "Starburst"

An oil displaying this mark meets the current engine protection standard and fuel economy requirements of the International Lubricant Standardization and Approval Committee (ILSAC), a joint effort of U.S. and Japanese automobile manufacturers. Most automobile manufacturers recommend oils that carry the API Certification Mark.

**API's Service Symbol and Certification Mark identify quality engine oils for gasoline- and diesel-powered vehicles. Oils displaying these marks meet performance requirements set by U.S. and international vehicle and engine manufacturers and the lubricant industry. More than 500 companies worldwide participate in this voluntary program, which is backed by a marketplace sampling and testing program.**

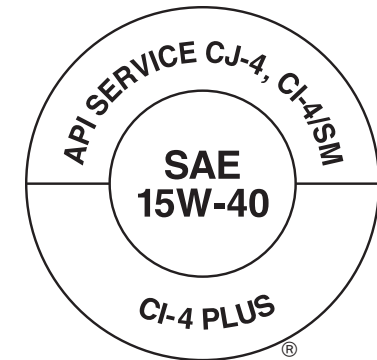


### The API Service Symbol, also known as the "Donut"

**1. Performance Level: Gasoline engine oil categories** (for cars, vans, and light trucks with gasoline engines): Oils designed for gasoline-engine service fall under API's "S" (Service) categories. See inside for descriptions of current and obsolete API service categories. **Diesel engine oil categories** (for heavy-duty trucks and vehicles with diesel engines): Oils designed for diesel-engine service fall under API's "C" (Commercial) categories. See inside for descriptions of current and obsolete API service categories.

**2. Viscosity Grade:** The measure of an oil's thickness and ability to flow at certain temperatures. Vehicle requirements may vary. Follow your vehicle manufacturer's recommendations on SAE oil viscosity grade.

**3. Energy Conserving:** The "Energy Conserving" designation applies to oils intended for gasoline-engine cars, vans, and light trucks. Widespread use of "Energy Conserving" oils may result in an overall savings of fuel in the vehicle fleet as a whole.



### The API Service Symbol "Donut" with CI-4 PLUS

Used in conjunction with API CI-4 and CJ-4, the "CI-4 PLUS" designation identifies oils formulated to provide a higher level of protection against soot-related viscosity increase and viscosity loss due to shear in diesel engines. Like Energy Conserving, CI-4 PLUS appears in the lower portion of the API Service Symbol "Donut."

**For more information about API's Engine Oil Program, visit [www.api.org/eolcs](http://www.api.org/eolcs).**

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# Which oil is right for you?



## GUIDE TO SAE VISCOSITY GRADES OF ENGINE OIL FOR PASSENGER CARS

Multigrade oils such as SAE 5W-30 and 10W-30 are widely used because, under all but extremely hot or cold conditions, they are thin enough to flow at low temperatures and thick enough to perform satisfactorily at high temperatures. Note that vehicle requirements may vary. **Follow your vehicle manufacturer's recommendations on SAE oil viscosity grade.**

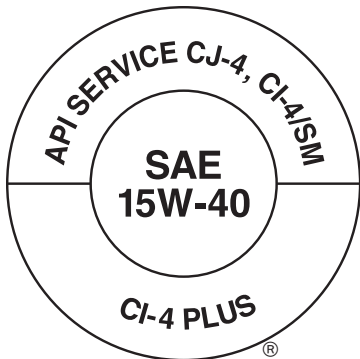
If lowest expected outdoor temperature is	Typical SAE Viscosity Grades for Passenger Cars
0°C (32°F)	5W-20, 5W-30, 10W-30, 10W-40, 20W-50
-18°C (0°F)	5W-20, 5W-30, 10W-30, 10W-40
Below -18°C (0°F)	5W-20, 5W-30

The current and previous API Service Categories are listed below. Vehicle owners should refer to their owner's manuals before consulting these charts. Oils may have more than one performance level.

For automotive gasoline engines, the latest engine oil service category includes the performance properties of each earlier category. If an automotive owner's manual calls for an API SJ or SL oil, an API SM oil will provide full protection. For diesel engines, the latest category usually – but not always – includes the performance properties of an earlier category.

GASOLINE ENGINES		
Category	Status	Service
<b>SM</b>	<b>Current</b>	For all automotive engines currently in use. Introduced in 2004, SM oils are designed to provide improved oxidation resistance, improved deposit protection, better wear protection, and better low-temperature performance over the life of the oil. Some SM oils may also meet the latest ILSAC specification and/or qualify as Energy Conserving.
<b>SL</b>	<b>Current</b>	For 2004 and older automotive engines.
<b>SJ</b>	<b>Current</b>	For 2001 and older automotive engines.
<b>SH</b>	<b>Obsolete</b>	For 1996 and older engines.
<b>SG</b>	<b>Obsolete</b>	For 1993 and older engines.
<b>SF</b>	<b>Obsolete</b>	For 1988 and older engines.
<b>SE</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in gasoline-powered automotive engines built after 1979.
<b>SD</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in gasoline-powered automotive engines built after 1971. Use in more modern engines may cause unsatisfactory performance or equipment harm.
<b>SC</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in gasoline-powered automotive engines built after 1967. Use in more modern engines may cause unsatisfactory performance or equipment harm.
<b>SB</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in gasoline-powered automotive engines built after 1951. Use in more modern engines may cause unsatisfactory performance or equipment harm.
<b>SA</b>	<b>Obsolete</b>	<b>CAUTION:</b> Contains no additives. Not suitable for use in gasoline-powered automotive engines built after 1930. Use in more modern engines may cause unsatisfactory performance or equipment harm.

Note: API intentionally omitted "SI" and "SK" from the sequence of categories.



DIESEL ENGINES		
Category	Status	Service
<b>CJ-4</b>	<b>Current</b>	Introduced in 2006. For high-speed, four-stroke engines designed to meet 2007 model year on-highway exhaust emission standards. CJ-4 oils are compounded for use in all applications with diesel fuels ranging in sulfur content up to 500 ppm (0.05% by weight). However, use of these oils with greater than 15 ppm (0.0015% by weight) sulfur fuel may impact exhaust aftertreatment system durability and/or oil drain interval. CJ-4 oils are effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used. Optimum protection is provided for control of catalyst poisoning, particulate filter blocking, engine wear, piston deposits, low- and high-temperature stability, soot handling properties, oxidative thickening, foaming, and viscosity loss due to shear. API CJ-4 oils exceed the performance criteria of API CI-4 with CI-4 PLUS, CI-4, CH-4, CG-4 and CF-4 and can effectively lubricate engines calling for those API Service Categories. When using CJ-4 oil with higher than 15 ppm sulfur fuel, consult the engine manufacturer for service interval.
<b>CI-4</b>	<b>Current</b>	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 where exhaust gas recirculation (EGR) is used and are intended for use with diesel fuels ranging in sulfur content up to 0.5% weight. Can be used in place of CD, CE, CF-4, CG-4, and CH-4 oils. Some CI-4 oils may also qualify for the CI-4 PLUS designation.
<b>CH-4</b>	<b>Current</b>	Introduced in 1998. For high-speed, four-stroke engines designed to meet 1998 exhaust emission standards. CH-4 oils are specifically compounded for use with diesel fuels ranging in sulfur content up to 0.5% weight. Can be used in place of CD, CE, CF-4, and CG-4 oils.
<b>CG-4</b>	<b>Current</b>	Introduced in 1995. For severe duty, high-speed, four-stroke engines using fuel with less than 0.5% weight sulfur. CG-4 oils are required for engines meeting 1994 emission standards. Can be used in place of CD, CE, and CF-4 oils.
<b>CF-4</b>	<b>Obsolete</b>	Introduced in 1990. For high-speed, four-stroke, naturally aspirated and turbocharged engines. Can be used in place of CD and CE oils.
<b>CF-2</b>	<b>Current</b>	Introduced in 1994. For severe duty, two-stroke-cycle engines. Can be used in place of CD-II oils.
<b>CF</b>	<b>Current</b>	Introduced in 1994. For off-road, indirect-injected and other diesel engines including those using fuel with over 0.5% weight sulfur. Can be used in place of CD oils.
<b>CE</b>	<b>Obsolete</b>	Introduced in 1985. For high-speed, four-stroke, naturally aspirated and turbocharged engines. Can be used in place of CC and CD oils.
<b>CD-II</b>	<b>Obsolete</b>	Introduced in 1985. For two-stroke cycle engines.
<b>CD</b>	<b>Obsolete</b>	Introduced in 1955. For certain naturally aspirated and turbocharged engines.
<b>CC</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in diesel-powered engines built after 1990.
<b>CB</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in diesel-powered engines built after 1961.
<b>CA</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in diesel-powered engines built after 1959.

For more information about API's Engine Oil Program, visit [www.api.org/eolcs](http://www.api.org/eolcs). Interested in learning about the chemical additives in engine oil? Visit [www.americanchemistry.com](http://www.americanchemistry.com). Copyright 2008 - API, all rights reserved. API, the API logo, the API Service Symbol (Donut), the API Service Symbol with CI-4 PLUS logo and the API Certification Mark (Starburst) are either trademarks or registered trademarks of API in the United States and/or other countries. API Creative | 2008-129 | 07.08 | PDF  
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