

# SERVICE PRO<sup>®</sup>

## PREMIUM LUBRICANTS



# MOTOR OIL MATTERS<sup>™</sup>



## GET MORE FROM YOUR MOTOR OIL.

Follow your vehicle manufacturer's oil change recommendations. This includes using recommended SAE oil viscosity and ILSAC or API performance standards.

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 at [www.recycleoil.org](http://www.recycleoil.org). Go to [www.earth911.com](http://www.earth911.com) for used oil collection center locations.

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

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

For more information visit [MotorOilMatters.org](http://MotorOilMatters.org).

Learn about the chemical additives in motor oil at [AmericanChemistry.com](http://AmericanChemistry.com).

## API's Certification Mark and Service Symbol

identify quality motor 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 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. Automobile manufacturers recommend oils that carry the API Certification Mark. See the **ILSAC STANDARD FOR PASSENGER CAR ENGINE OILS** chart on the next page for descriptions of current and obsolete ILSAC standards.

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

#### 1. Performance Level

Motor oils designed for cars, vans, and light trucks with gasoline engines fall under API's "S" (Service) categories. Motor oils designed for heavy-duty trucks and vehicles with diesel engines fall under API's "C" (Commercial) categories. Please see the **Gasoline Engines** and **Diesel Engines** charts on the next pages for descriptions of current and obsolete API service categories.

#### 2. Viscosity Grade

The measure of an oil's ability to flow at certain temperatures. Vehicle requirements may vary. Follow your vehicle manufacturer's recommendations on SAE oil viscosity.

#### 3. Resource Conserving and Energy Conserving

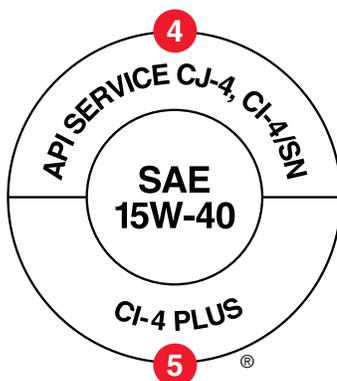
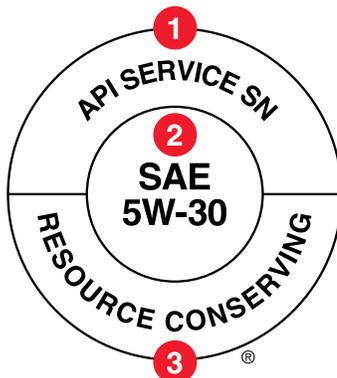
These designations apply to oils intended for gasoline-engine cars, vans, and light trucks. Widespread use of "Resource Conserving" or "Energy Conserving" oils may result in an overall savings of fuel in the vehicle fleet as a whole.

#### 4. Multiple Performance Levels

Oils designed for diesel engine service might also meet gasoline engine service. For these oils the designation is "C" category first followed by the "S" category. "C" category oils have been formulated primarily for diesel engines and may not provide all of the performance requirements consistent with vehicle manufacturers' recommendations for gasoline-fueled engines.

#### 5. The API Service Symbol with CI-4 Plus

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. When originally introduced, CI-4 PLUS identified CI-4 oils meeting a higher level of performance. CJ-4 oils include all CI-4 PLUS performance requirements. CI-4 PLUS appears in the lower portion of the API Service Symbol "Donut."



The current and previous ILSAC standards and API Service Categories are listed here. 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 ILSAC standard or API Service Category includes the performance properties of each earlier category and can be used to service older engines where earlier category oils were recommended.

## ILSAC STANDARD FOR PASSENGER CAR ENGINE OILS

Name	Status	Service
GF-5	Current	Introduced in October 2010, designed to provide improved high temperature deposit protection for pistons and turbochargers, more stringent sludge control, improved fuel economy, enhanced emission control system compatibility, seal compatibility, and protection of engines operating on ethanolcontaining fuels up to E85.
GF-4	Obsolete	Use GF-5 where GF-4 is recommended.
GF-3	Obsolete	Use GF-5 where GF-3 is recommended.
GF-2	Obsolete	Use GF-5 where GF-2 is recommended.
GF-1	Obsolete	Use GF-5 where GF-1 is recommended.

## GASOLINE ENGINES

(Follow your vehicle manufacturer's recommendations on oil performance levels)

Category	Status	Service
SN	Current	Introduced in October 2010, designed to provide improved high temperature deposit protection for pistons, more stringent sludge control, and seal compatibility. API SN with Resource Conserving matches ILSAC GF-5 by combining API SN performance with improved fuel economy, turbocharger protection, emission control system compatibility, and protection of engines operating on ethanolcontaining fuels up to E85.
SM	Current	For 2010 and older automotive engines.
SL	Current	For 2004 and older automotive engines.
SJ	Current	For 2001 and older automotive engines.
SH	Obsolete	For 1996 and older automotive engines.
SG	Obsolete	CAUTION: Not suitable for use in most gasoline-powered automotive engines built after 1993. May not provide adequate protection against build-up of engine sludge, oxidation, or wear.
SF	Obsolete	CAUTION: Not suitable for use in most gasoline-powered automotive engines built after 1988. May not provide adequate protection against build-up of engine sludge.
SE	Obsolete	CAUTION: Not suitable for use in most gasoline-powered automotive engines built after 1979.
SD	Obsolete	CAUTION: Not suitable for use in most gasoline-powered automotive engines built after 1971. Use in more modern engines may cause unsatisfactory performance or equipment harm.
SC	Obsolete	CAUTION: Not suitable for use in most gasoline-powered automotive engines built after 1967. Use in more modern engines may cause unsatisfactory performance or equipment harm.
SB	Obsolete	CAUTION: Not suitable for use in most gasoline-powered automotive engines built after 1951. Use in more modern engines may cause unsatisfactory performance or equipment harm.
SA	Obsolete	CAUTION: Contains no additives. Not suitable for use in most gasoline-powered automotive engines built after 1930. Use in modern engines may cause unsatisfactory performance or equipment harm.

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## DIESEL ENGINES

(Follow your vehicle manufacturer's recommendations on oil performance levels)

Category	Status	Service
CJ-4	Current	For high-speed four-stroke cycle diesel engines designed to meet 2010 model year on-highway and Tier 4 nonroad 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 sulfur content up to 500 ppm (0.05% by weight). However, the use of these oils with greater than 15 ppm (0.0015% by weight) sulfur fuel may impact exhaust aftertreatment system durability and/or drain interval. CJ-4 oils are especially 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.
CI-4	Current	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 D, CE, CF-4, CG-4, and CH-4 oils. Some CI-4 oils may also qualify for the CI-4 PLUS designation.
CH-4	Current	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.
CG-4	Obsolete	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.
CF-4	Obsolete	Introduced in 1990. For high-speed, four-stroke, naturally aspirated and turbocharged engines. Can be used in place of CD and CE oils.
CF-2	Obsolete	Introduced in 1994. For severe duty, two-stroke-cycle engines. Can be used in place of CD-II oils.
CE	Obsolete	CAUTION: Not suitable for use in most diesel-powered automotive engines built after 1994.
CD-II	Obsolete	CAUTION: Not suitable for use in most diesel-powered automotive engines built after 1994.
CD	Obsolete	CAUTION: Not suitable for use in most diesel-powered automotive engines built after 1994.
CC	Obsolete	CAUTION: Not suitable for use in most diesel-powered engines built after 1990.
CB	Obsolete	CAUTION: Not suitable for use in most diesel-powered engines built after 1961.
CA	Obsolete	CAUTION: Not suitable for use in most diesel-powered engines built after 1959.

## SAE VISCOSITY GRADES: PASSENGER CAR MOTOR OIL

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

0°C (32°F)

-18°C (0°F)

Below -18°C (0°F)

### Typical SAE viscosity grades for passenger cars

0W-20, 0W-30, 5W-20, 5W-30, 10W-30, 10W-40, 20W-50

0W-20, 0W-30, 5W-20, 5W-30, 10W-30, 10W-40

0W-20, 0W-30, 5W-20, 5W-30