

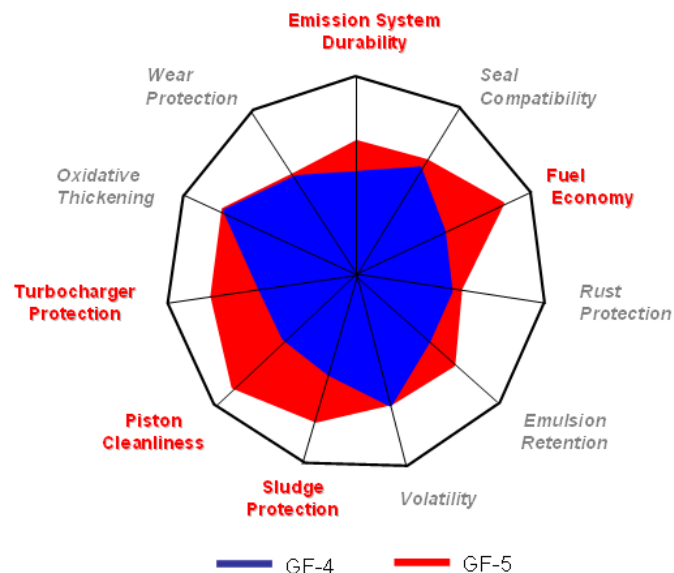
distributor bulletin

FREQUENTLY ASKED QUESTIONS - ILSAC GF-5

What's the difference between GF-4 and GF-5?

Improvements from GF-4 to GF-5 include the following:

- **Improved fuel economy and fuel economy retention.** A key difference between GF-4 and GF-5 specifications concerns fuel economy testing requirements. Different testing will be used to improve measurement of initial fuel economy and retained fuel economy over the life of the oil. Typically, fuel economy deteriorates over time. That's why automakers want to ensure consistent engine-oil performance as measured by fuel economy tests of fresh oil and aged oil.
- **Improved turbocharger protection.** More and more modern engine designs are including turbochargers, which contribute to improved fuel economy. Automakers are looking to the oil industry to improve the turbocharger protection by helping to safeguard the bearings from deposits.
- **Better protection from ethanol containing fuels.** This is the first industry-wide specification to address the unique flex fuel vehicles, offering protection for vehicles from ethanol containing fuels up to E85 (85% Ethanol plus 15% conventional unleaded gasoline)
- **Better emission system protection.** The new specifications will help extend the life of after-treatment devices, such as the catalytic converter and oxygen sensors.
- **Improved oil robustness.** The new specifications call for oils that are more durable to improve high and low temperature deposit protection that leads to better sludge protection and improved piston cleanliness.



Note: The above chart is a visual representation of the benchmarks set by the International Lubricant Standardization and Approval Committee.



What is driving the changes?

Growing environmental concerns about climate change have led to increased government regulations designed to decrease greenhouse gas emissions. As a result, automakers must meet U.S. Corporate Average Fuel Economy (CAFÉ) standards which target about 35 miles per gallon by 2016. So a key automaker objective is to improve fuel economy and fuel economy retention as part of this specification change.

At the same time, automakers are looking for lubricants with improved durability and that offer better protection for emission control systems. As automakers must meet Environmental Protection Agency requirements to provide design and defect warranty coverage for emission related parts, like the catalytic converter, for the first 8 years or 80,000 miles of vehicle use.

Which vehicle brands belong to ILSAC?

ILSAC is made up of American and Japanese and other Asian automakers. This includes automakers like:

- Ford, Chrysler and General Motors
- Toyota, Honda, Nissan and Subaru

ILSAC specification standards are also usually adopted by the United States, Canada, Mexico, Central, South America, Japan and other Asian countries like Korea and China.

Does GF-5 impact European automakers?

European manufacturers **do not** belong to ILSAC. European brands like Mercedes, Volkswagen, BMW and Renault **are not** impacted by the ILSAC GF-5 upgrade. European manufacturers use the ACEA specification. Like ILSAC, ACEA periodically enacts industry-wide upgrades. The current European specification is (ACEA 2008).

Will GF-5 be required for all vehicles?

ILSAC GF-5 is a new specification for **most** vehicle platforms for Japanese and American automakers beginning with model year 2011. It is **not** required for all new vehicles or previous model years. However, this is an industry-wide specification change, so lubricant manufacturers will migrate to the new GF-5 formulations and stop producing the GF-4, by September 30, 2011.

How will you know that the oil meets GF-5 specifications?



The starburst plus the API Service Symbol donut with the new SN designations will indicate the oil meets the ILSAC GF-5 specifications. Here's what it all means.

- 1 Starburst is always used to indicate that the oil meets "current" ILSAC spec
- 2 Performance Level indicates that the oil meets the latest specification. The designation for GF-5 will be SN and will replace the SM designation used for GF-4
- 3 Viscosity Grade indicates the oil's thickness and ability to flow at certain temperatures
- 4 Resource Conserving will replace Energy Conserving. The proposed API SN Resource Conserving category is more demanding than the current Energy Conserving designation. Resource Conserving involves fuel economy test plus some additional tests, hence the change in designation.

SN plus the Resource Conserving designation indicates the product meets all ILSAC GF-5 specifications.

Is there backward compatibility?

Yes, GF-5 oils must also be compatible with engine designs that require GF-4 and prior oils.

What SAE viscosity grades are impacted?

GF-5 impacted viscosity grades are 0W-20, 0W-30, 5W-20, 5W-30, 10W-30.

When do the new specifications go into effect?

ILSAC finalized the specification standards in late 2009. The first licensing by API SN Resource Conserving begins on Oct 1, 2010 and will be used in the 2011 models. All lubricant manufacturers must meet the requirements by September 30, 2011, the mandatory date to upgrade from ILSAC GF-4 to ILSAC GF-5. ILSAC GF-4 will be obsolete after this date.

The upgrade from GF-4 to GF-5 is one the most complicated specification upgrades and must be properly balanced through the use of special base oils and carefully selected additives to achieve the higher performance levels specified. Taking the time to get it right is critical.

