



## **How new motor oil standards will impact you**

By Tom Nash, AAM

Two new standards for motor oil will soon arrive. They will reshape the way you buy oil and how you market maintenance programs to your customers. Your net profit margin will be affected by the decisions you make.

Changes are coming in the formulation of motor oil that will be used in 2011 passenger cars and light trucks. These changes are needed to increase engine life, reduce emissions and improve engine efficiency. However, these new oils also bring longer change intervals (resulting in fewer customer visits to your shop) and higher prices to cover the cost of research and development, testing, more expensive ingredients, licensing fees and royalties.

It will be difficult to initially market the oil change price increase to your customers unless you are educated about the new oils—why they are better, last longer and are a positive step forward—and can convey that information to the customer.

While longer change intervals may offset the higher product prices over the life of the vehicle, fewer scheduled maintenance visits will require you to make the best of each visit. Thorough inspections and marketing to customers during each visit will be a must to prevent small issues from becoming serious problems, as well as to ensure a continued flow of revenue for your shop.

To avoid “sticker shock,” prepare customers for the cost increase when it arrives. Explain the increase and stress the benefits. You can create a small handout to explain the new oil standards and why the price has risen. It can also be added to your website or included in mailers.

The two new incoming standards are ILSAC GF-5 and General Motors Dexos. What each entails and how and why they differ will be detailed, but first it's necessary to explain “standards” and “specifications” and the players involved. It will help you understand all those acronyms and references you see on oil bottles and drums.

### **Motor oil standards and specifications**

Motor oil standards have been developed by various organizations to ensure consistency, compatibility and quality from oil formulators who are the people who produce and package oil. In this case, we are speaking of those who offer motor oil for use in vehicles.

## SAE viscosity standards

Motor oil standards were established soon after automobiles first hit the road. The Society of Automotive Engineers (SAE) was formed in 1905 with the vision of standardizing all the technologies of automobile design, manufacture and maintenance.

Today, we still adhere to the countless SAE standards created since then. Motor oil and lubrication became one of the early projects of the SAE.

As early as 1911, petroleum refiners began to embrace SAE standards for viscosity. Refiners still use the SAE J300 method of testing and certifying the viscosity of motor oil.

## ACEA

The European Automobile Manufacturers Association (ACEA), was founded in 1991 to represent the interests of the 15 European automotive manufacturers.

ACEA works with the various countries and the European Union for standardization among the nations. All European-made vehicles list ACEA standards for oil in their specifications, along with ILSAC standards.

The vast majority of motor oils in North America meet or exceed ACEA standards, so it shouldn't be an issue when servicing a European vehicle. Always refer to the owner's manual or check the manufacturer's technical website, if in doubt.

## API

The API "donut" indicates the SM performance rating and SAE viscosity. The text displays the ILSAC GF-4 standard and other specifications the oil meets - in this case Chrysler and GM, who will receive royalties from the marketer.

At the beginning of World War I, Congress mandated the domestic oil and natural gas industry to work together with the government to help the war effort. After the war, there was a need for an organization to continue representing the petroleum industry, so the American Petroleum Institute (API) was established in 1919.

API sets standards, according to specified testing parameters, and approves products based on testing results. The latest motor oil standard for gasoline-powered passenger car and light trucks is "SM," which you will find on the oil bottle or drum label. The current API standard for light diesel engines is CJ-4.

Most standards are "backward compatible," meaning the oil may safely be used in older vehicles, which called for earlier standards - but, always check the service information and owner's manual, especially in unusual applications.

## ILSAC

The International Lubricants Standardization and Approval Committee, better known as ILSAC, is a consortium of the auto makers — GM, Ford Motor Co. and Chrysler L.L.C. — and the Japan Automobile Manufacturers Association (JAMA).

ILSAC's Oil subcommittee works with API and additive suppliers to identify the need for an improved motor oil specification and sets testing standards.

The latest standard is GF-4, which came into usage in early 2004. Since then, the need for longer oil life, improved mileage and lower emissions has heightened. Not long after the GF-4 standard was adopted, the industry began to look at raising the bar for the next generation of engines.

### ILSAC GF-5

While the GF-4 standard was acceptable when it was introduced nearly six years ago, new formulas will be required to meet upcoming government regulations for improved fuel economy and lower emissions. Improvements over GF-4 must include:

Fuel economy and fuel economy retention;

Engine oil robustness; and

Protection of emission control systems.

The next ILSAC standard, GF-5, is scheduled to be released this year, about the time the 2011 models hit the market. The challenges toward attaining GF-5 are many. More sophisticated additive mixtures will need to be incorporated to improve the following:

Fuel economy;

Emission systems protection;

Rust protection with the use of E85 (ethanol/gasoline blend);

Protection for turbochargers;

Avoiding engine sludge;

Keeping pistons clean; and

Compatibility with sealing materials.

Right now, oil formulators are performing six months of testing to ensure their products meet the stringent GF-5 standards.

After the testing has been completed and the results examined, API will begin licensing marketers to produce and distribute GF-5 certified products. The product range is expected to include 0W-20, 0W-30, 5W-20, 5W-30 and 10W-30.

While each company must meet the stringent GF-5 standards, they may take slightly different approaches to meeting the specification in types and amounts of additives and modifiers.

One thing is certain: there will be a higher content of additives and synthetic compounds.

This will increase oil life, protect the metal and sealing materials better but increase the cost of the end product. The end price of GF-5 may range from 15 percent to 20 percent higher than the current GF-4 spec due to the formulation, development, testing, royalties and marketing costs.

### GM Dexos

GM has decided to take a separate path to setting standards for its global family of engines. The company plans to introduce its Dexos global motor oil specification (until recently called Global Engine Oil Specification, or GEOS) with 2011 models.

Actually, the standard contains two specifications: Dexos-1, as factory-fill and service-fill for gasoline engines; and Dexos-2 as factory-fill and service-fill for diesel engines. Both are compatible with previous models.

GM manufactures more than 20 engines in 18 plants worldwide and assembles vehicles in 37 countries — although all that may change drastically under the new government-controlled strategy.

The intent of the global Dexos specification is to ensure the same quality and specification from all suppliers for all engines in all countries.

According to Eric Johnson, of GM Powertrain, the reasons for developing the Dexos specifications are:

To ensure worldwide availability of equal quality oil for factory and service fill.

To further improve fuel economy;

To provide a more robust formulation (added engine protection);

To further extend service intervals; and

To support longer intervals for GM's Oil Life Monitoring System (OLMS).

GM has used OLMS for many years, and it is now entering a completely global application. These intervals, based on engine speed, ambient air and engine temperatures, runtime, etc., will certainly lengthen with the new specification.

“We’re always trying to calibrate OLMS to maximize drain intervals to reduce the nation’s dependence on crude oil,” Mr. Johnson said. “It’s about putting the customer first and continuing GM’s commitment to quality, design and innovation.”

Dexos-1 for gasoline engines will be offered in these formulations: 0W-20, 5W-20, 0W-30 and 5W-30. Dexos-2 for light diesel engines will be packaged in 5W-30, 0W-40 and 5W-40.

Dexos-1 will supersede the current GM6094M specification for most GM gasoline vehicles. At this time, GM plans to also use Dexos-1 to replace the GM4718M spec for Corvette, Cadillac and engines with turbochargers, which stipulated Class III synthetic blends: Mobil 1 or the equivalent.

Higher prices due

Under this new GM proprietary specification, two economic factors will increase the end price of Dexos-approved oils: the higher cost of more exotic base stocks and additives, plus GM’s licensing fee and royalty structure.

GM will charge oil formulators an annual licensing fee of \$1,000 per viscosity.

Additionally, there will be a \$.09 per quart royalty. Industry experts predict a 25 percent to 30 percent increase in cost.

However, when considering the much longer replacement intervals, Dexos may be cheaper for the consumer in the long run.

“The revenue from the Dexos royalties program,” Mr. Johnson said, “would be used to sustain and improve the specification in the future.” This would include:

Current test replacement;

Future test replacement;

Test maintenance; and

Consumer awareness.

Mr. Johnson wouldn’t speculate on the end cost to the consumer, because it would depend on individual formulation.

There has been some industry talk that to meet the Dexos specification, oil formulators would have to use high levels of molybdenum disulfide (moly), a high-quality friction modifier. Due to its high cost, the conjecture is that it would dramatically increase production costs.

Mr. Johnson said he doesn't believe high portions of moly are required and believes formulators will meet the specification at the lowest cost.

“We just give them a specification to meet—not a recipe. There are benefits for both the consumer and GM,” he said. “Under the Dexos program, fuel economy will improve and drain intervals will increase, thereby reducing consumption of both fuel and motor oil. It also allows us (GM) to be more environmentally responsible and be more efficient as a company with one global specification, rather than several.”

There also has been some concern that if GM is successful in launching a proprietary specification, other companies could follow suit, creating several specifications. However, most large auto makers have voiced their intention to continue following ILSAC standards.

#### GF-5 Vs. Dexos

It's a bit curious that GM is launching the Dexos specification at the same time that ILSAC is releasing the GF-5 standard — especially because GM chairs the ILSAC Oil Committee. Because GF-5 has not been revealed, it's unknown how compatible the two are.

However, GF-5 is generally considered as the next step toward total synthetic products and will probably remain in place no more than five years. GM, on the other hand, is leaping forward a decade to establish its own mark.

Therefore, it's expected that Dexos will meet and exceed GF-5, but GF-5 will not meet the Dexos specification.

Because both GF-5 and Dexos products will contain more synthetic compounds and additional additives, the cost is expected to increase. Research and development, plus testing costs by oil formulators and additive suppliers, will prompt higher prices. Licensing and royalty fees will also be tacked on.

GF-5 is expected to increase by 15 percent to 20 percent; Dexos is expected to bring a 25 percent to 30 percent premium. This brings the two closer to the price of fully synthetic blends.

It bears repeating that with these products, change intervals will be lengthened, so the overall cost may stay close to, or improve, current cost-per-mile levels.

How this affects you

Less frequent oil and filter change procedures will mean you may see your customers less often. It will become increasingly more critical to maintain contact with your customers to take care of minor issues, to prevent them from becoming big problems.

Always maintain good customer records so you can continue your marketing program for preventive maintenance and scheduled services via postal mailers, e-mail, phone messages and even Twitter. Good, up-to-date records are critical.

Make the best of each visit. Thoroughly inspect the vehicle for service needed now and in the near future. Make the customer aware of any findings, market the need for any repair or adjustment, give the customer a copy of the inspection report and make sure to add the findings to the customer's records.

### Smart buying

It will be important to buy right. It will take a while for GF-5 oils to become widely available. At some point, marketers will cease manufacturing and supplying GF-4 product. You'll want to keep a supply of GF-4 product on hand for 2010 and earlier models, but you certainly don't want to hoard it.

Dexos is another question. I believe you will want to keep a supply on hand but not an overabundance of product sitting in your inventory. It will be important to track usage and forecast sales.

### Be prepared

After 30 years as a Boy Scout leader, I can assure you the motto makes sense. Educate yourself about the new GF-5 standard and GM's Dexos specification. Talk to your suppliers and watch for new service information. Be prepared for the upcoming "oil changes."

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