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less expensive oil but at shorter drain intervals.

- Medium quality oils (sheets 229.3/31 for cars and 228.2/3/31 for heavy-duty application) are formulated with additives producing more ash, for greater endurance.

- Top quality oils (229.5/51 for light duty and 228.5/51 for heavy duty) provide fuel economy improvements of up to 1.7 percent and oil drain intervals of

up to 30,000 kilometers (18,000 miles) or two years for passenger cars, and up to 120,000 km for heavy-duty applications.

Only top quality oils, blended with API Group IV polyalphaolefin base oils, are used for factory fill, Keppeler said.

Schenk added, "We only recommend our own 'sheets' in our owner's manuals and don't mention ACEA Oil Sequences." He acknowledged that with three quality levels these specifications are quite elaborate, but declared, "We believe it is impor-

Michael Schenk (left) and Stefan Keppeler

tant to have our specifications written in this way in order to give the most options to our customers. Most oil changes are done by our dealers, and they have all the oils available on site and understand our requirements."

Current factory fill is an SAE 5W-30 multigrade, but MB does not recommend a viscosity grade for service fill. "Our customers can select the viscosity grade, which will depend primarily on where our cars are operated," Schenk said. "An oil used in South Africa would be different from an oil used in Norway."

Service Calls

Most European vehicle manufacturers also have their own oil recommendations, equivalent to Mercedes' "sheets," and car dealers perform most oil changes. With 13 vehicle manufacturers in Europe as well as a number of imports, it would be difficult (if not impossible) for a quick lube store to stock all the necessary oils in all the desired grades. Further, Asian vehicle manufacturers usually recommend their own branded "genuine" oil. These multiple stocking requirements and customer comfort with having dealers perform maintenance are the primary reasons there are so few quick-lube outlets in Europe.

Mercedes drivers also have become comfortable with its onboard oil life monitors, the Flexible Service System (FSS) which began appearing in its European vehicles a decade ago. FSS determines the remaining time and mileage before the next oil change, and displays this information on the dashboard instrument cluster. Current oil change intervals for cars usually are 12,000 miles, but the monitor can alter this depending on operating conditions. The driver sees

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only the countdown, in miles or time, to when the next service is expected.

“Our oil life monitor does not check the condition of the oil directly,” Schenk commented. “It uses proxies. For example, you get a miles bonus if driving conditions favor the oil, such as long driving periods at reasonable speeds, but miles subtracted if there are lots of cold starts with short distances.”

Biodiesel Riddle

“We have seen oil breakdowns in the field,” noted Keppeler, “but most of these breakdowns are a result of fuel quality issues. There is a lot of fuel in the market — in particular biofuels — that does not have the right quality, and we get a lot of engine and oil related problems from that. So we have to work together in the future to improve the quality of fuels in the market. We’ve had that issue here for a long time.

“And with the introduction of biofuels it’s becoming a serious issue in the U.S., too,” he went on. “If the fuel quality is not sufficient it can impact severely on oil effectiveness. For example, with the introduction of biofuels we have seen a decrease in piston cleanliness of 10 to 15 points, which is considerable.”

When CEC began developing the OM 646 test, Keppeler said, “the main focus was on wear but today the main focus has shifted to oxidation and deposits.” He added, “The major issue is biofuels compatibility and so we are working on future tests where we check this. Specifically, we are working to develop a new Daimler oxidation test where we use biofuel, and we have seen a dramatic influence of the biofuel on oxidation.”

He sees growing interest in ACEA to use the OM 646 procedure to test piston cleanliness, and MB has offered CEC the 646 engine (a common-rail direct injected diesel) as the platform for a future test on biofuels effects. Not everyone is on board with the idea, though, as some feel the proposed fuel — B20 — is not representative of the European market. “However, we export our cars to North America and there the biofuel is based on soybean, not rapeseed as it is here, so we think the use of B20 fuel is more critical and cor-

rect,” Keppeler stressed.

“A set of global standards is necessary,” Schenk added, “and that hasn’t happened yet.”

Mercedes also has an oil certification program for aftermarket engine oils. In the past if MB approved an oil, that approval was valid forever — an oil marketer simply needed to certify annually that the product was unchanged and no additional testing was required.

Last year, MB introduced a time limit

on approvals. An oil’s approval is valid for five years, and now can be extended only if the product meets the latest specifications. That requirement almost always results in additional testing.

Schenk noted, “We have an internet listing of all approved oils [see <http://bevo.mercedes-benz.com>] and that list is now updated immediately. In the past updates would happen only every six months. Immediate updating has made a positive difference with our oil customers.” ■