

Automotive News

Mercedes: In a crankcase, biodiesel can become 'gunky, goopy' sludge

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Not all diesel is created equal, and that fact has challenged Mercedes-Benz and Volkswagen Group in their quest to popularize the fuel in the United States.

Two summers ago, Mercedes stopped allocating BlueTEC diesels to dealerships in Illinois. The reason? Testing showed the engines could be ruined by diesel blends heavy on biodiesel, a fuel made from crops, animal fat or fryer grease that has strong political support in the Midwestern farm belt.

Biodiesel can seep into the crankcase of a diesel engine, form acids and degrade into "gunky, goopy" sludge, says William Wuebkenberg, fuels policy director for Mercedes-Benz USA. The sludge can coat intercoolers, exhaust gas recirculation valves and engine and turbocharger bearings, putting a driver at risk of an engine failure.

"Once you sludge an engine, there's no going back," Wuebkenberg says. "There's no magical stuff that you can pour into the top of the engine and flush it all away."

Mercedes, like all the German brands, has certified its engines to handle blends with up to 5 percent biodiesel, which are called B5. Higher blends void the warranty.

In most parts of the United States, that is not a problem, but Illinois helps out local biodiesel producers with tax incentives that put their fuel at a price advantage. This, combined with a federal law that created a lucrative market for renewable fuel credits, means diesel in Illinois usually contains about 11 percent biodiesel.

It is a situation that could spread across the Midwest as stricter biofuels laws take effect. Minnesota is next; the state is on track to have a mandate by June 2014 that all diesel contain more than 10 percent biodiesel.

Only one U.S. passenger car, the Chevrolet Cruze, is certified to handle that much biodiesel. It can take any blend from 0 to

20 percent biodiesel, which is called B20.

VW and Audi have kept selling their TDI models, sending letters to owners saying that they will cover any damage caused by B20. Service intervals for diesel vehicles have also been tweaked so oil filters can be changed more often.

It could raise warranty costs, but given the huge bet that VW and Audi have placed on diesel engines, the company deemed it a necessary risk.

Eric Matway, general manager of Continental Audi in Naperville, Ill., said customers are asking about the situation, but he thinks Audi's promise of warranty coverage will keep them from being scared off. Diesel versions of the A6, A7 and Q5 launch this fall; his store is ordering about 20 percent of them with diesel engines.

"They've taken a very specific position with the letter," he said of Audi. "It's strong and confident, saying 'We're going to take care of you.'"

Mercedes says that using blends with more biodiesel than B5 can cause damage that isn't covered by a warranty, but the company will consider paying for repairs case by case, depending on whether a vehicle has been regularly serviced.

Automakers are also looking at B20-certified engines, but it would take costly re-engineering, Woeb-kenberg said. That includes redesigning crankcases, oil filters and oil pans to hold more oil, which adds weight and creates packaging problems.

"It becomes a study in risk management," he said. "How much are we willing to do? What do our warranty claims look like? We know what to do to make our hardware more tolerant to higher blends, but by the nature of the fuel ... there are things that you can't get past."



Unlike German brands' vehicles, the Chevrolet Cruze diesel is certified to handle fuel that contains as much as 20 percent biodiesel.

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