

Wheels: An e-mail from Bob says, “I’ve been looking at new cars and the Toyota Camry Sedan and the Camry Solara both say that the V-6 engines can use 87 octane gas but the car books (various consumer books) say that Toyota recommends 91 octane. Two dealers have hedged on the answer to this question. One dealer, however, showed me the Solara manual and it says:

4 cylinder = 87 octane

6 cylinder = 87 octane (for improved performance, use 91 octane)

I have always read that there is no need to use a grade higher than recommended (that an engine designed for 87 will not run any better on 91, and in some cases, worse because the octane is different than the computer was programmed for). If the engine runs better on 91, how can it run on 87, and will 87 damage the engine? I’ve never read or heard of such a thing before. I’m interested in the Solara, but I wanted to use regular gas (87). Now, I think I should buy an Accord coupe (Honda says all of its engines run on 87 octane). I’m a confused new car shopper.”

Halderman: Good question! This means that the engine has a high compression ratio and while it will perform OK using regular (87 octane), it is capable of providing additional performance if premium (91 + octane) is used. My vehicle, for example, recommends premium, but when I use regular, I notice a drop in fuel economy because the knock sensor signals the computer to retard the ignition timing. It may take several tanks of premium to achieve the higher performance after using regular, so I recommend using the same grade all of the time. We can see this using a scan tool on some vehicles where it will display the “calculated octane” of the fuel and this information is based on signals from the knock sensor. What do I do? I use the recommended fuel (premium) all of the time.

