

Wheels: Kurt asks via e-mail if there is a benefit of using plus or premium fuel when 87 octane is recommended? He has a 1993 Camry and a 2000 Buick LeSabre Limited.

Halderman: There is no advantage to using premium grade fuel in either of your vehicles. In fact, there are service bulletins that recommend against using premium because it can cause stalling problems in very cold weather due to the different volatility of the grade. Do yourself and your wallet a favor and continue to use regular grade and purchase it from a busy station to be assured that the fuel is fresh. Premium grade does not mean better refined, it is simply blended to have a higher octane rating that your vehicles do not need or require.

Some vehicles specify that premium (91 octane or higher) is “required.” Some manufacturers specify that premium grade gasoline is “recommended.” For example, Acura specifies that premium fuel be used in several of their vehicles but that lower octane regular can be used with “reduced performance.” In other words, the engine control system is capable of detecting the use of lower octane fuel and start retarding the programmed amount of spark advanced to prevent possible engine damage. This revised spark advance will reduce engine power and fuel economy. Many drivers do not notice the slight decrease in performance and would rather spend less to fill their fuel tanks. When higher-octane gasoline is used again, the computer slowly restores the most efficient spark advance for best performance. This relearning may take several days whereas the change from premium to regular is accomplished almost immediately because this change could cause serious engine damage.

Interesting Note: Because the electronic control system of many of today’s vehicles can detect engine knock associated with the use of low octane fuel, the computer can calculate the rating of the fuel being used. Some vehicles can display their calculated octane rating on the display of a scan tool. Therefore, your local service technician can learn what grade of fuel you have been using by simply accessing the parameter data that many scan tools are able to display.

