

What Is Octane And Should It Affect Drivers' Decisions At The Pump?

Anyone who has ever driven their vehicles into a filling station is no doubt familiar with the word "octane." But few drivers may know what octane refers to and how it might affect their vehicles.

According to Kelley Blue Book®, octane is a colorless component that boils at high temperatures. Octane is added to fuels, including gasoline used in vehicles, to eliminate preignition in combustion engines. The higher the octane rating, which is a measure of a fuel's ability to resist "knocking" or "pinging," the less likely the fuel is going to explode unexpectedly. In fact, KBB notes that gasoline with a high octane rating can withstand more compression than gas with a low octane rating.



Drivers encounter octane anytime they visit a filling station. Learning more about octane and what it does for vehicles can help drivers become more informed motorists.

So what does this mean for the average driver when he or she arrives at the pump and has to choose between 87, 89 or 93 octane gasoline? Likely very little. The U.S. Department of Energy notes that most gasoline vehicles are designed to run on 87 octane gasoline. However, some vehicles are still designed to run on higher octane fuel, so drivers should always consult their owners' manuals to determine which octane is best for their vehicles.

Using a lower octane fuel than the one mentioned by the vehicle manufacturer can damage the engine over time. The DOE even notes that using a fuel with an octane rating other than

the one recommended by the vehicle manufacturer may actually void the warranty. That gives drivers even greater incentive to consult their owner's manuals before filling up for the first time.

Drivers may wonder if using a higher octane fuel than the one recommended by their car's manufacturer will improve performance. And in certain instances, it might. The DOE notes that higher octane fuel may improve performance and gas mileage and reduce carbon emissions when towing or carrying heavy loads. However, there's typically no such benefit when driving in normal conditions.



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