

Hybrid Cars

By Sharon Fabian

How do they do it? How do they make hybrid cars that run on both gas and electricity? Did someone invent an amazing new kind of engine that runs on both gas and electricity?

The answer is no. Hybrid cars aren't based on a magical new technology, just an efficient combination of two old technologies - the gasoline engine and the electric motor. Hybrid cars have both a gasoline engine and an electric motor.

Having an electric motor in addition to the normal gasoline engine is one of the most important features of a hybrid car. The gasoline engine still provides most of the power for cruising at highway speeds, but the electric motor provides a power assist when more power is needed. The power assist kicks in when the car is accelerating, such as for passing another car on the highway and when the car is going uphill. With its electric motor providing a boost of power whenever it is needed, a hybrid car can manage with a smaller gasoline engine and save a lot of energy. The electric motors in some hybrid cars also provide power for starting and for driving at slow speeds, such as driving through your neighborhood.

Gas-electric hybrid cars do not need to be plugged in to recharge their batteries like all-electric cars do. Instead, they recharge their batteries from the gasoline engine while the car is moving.

Another important feature of hybrid cars is regenerative braking. In regenerative braking, energy is actually recaptured from braking for use by the electric motor. When the driver applies the brakes on a hybrid car, the electric motor works in reverse and acts as a generator to produce more electricity from the energy that is normally lost during braking. The electricity that is produced from braking is sent to one of the car's batteries for storage until it is needed.

A third important feature of hybrid cars is automatic shut-off and automatic start. When a hybrid car comes to a stop, the engine is automatically shut off. As soon as the accelerator is pressed, the engine is automatically restarted. This saves all of the energy that would normally be wasted while the car idles at stop signs and red lights.

Hybrid cars have many advantages, and hybrid fans say that they do just what consumers have been looking for. They use less gas than traditional cars, and they also provide the performance and speed that drivers are looking for.

Hybrid cars get good gas mileage with estimates ranging from thirty to sixty miles per gallon. They can also go a long way on one tank of gas, up to six hundred miles per tankful. Maybe most importantly, they produce low carbon-dioxide emissions, putting less dangerous and damaging smog into our air.

One disadvantage of hybrid cars is that they don't work equally well in all circumstances. Hybrid cars are great for city driving where the slow speeds and many stops and starts make maximum use of their technology. For highway driving or driving on open country roads, the savings from a hybrid car is not as significant.

If you decide to buy a hybrid car one day, you will want to know that not all hybrid cars are equal. Some hybrids have more energy-saving features than others, and the gas mileage of hybrid cars varies greatly. Also, there are some cars that are called hybrids, but they are not really energy-saving cars at all. These cars, also called muscle hybrid, use hybrid technologies to give the car increased power rather than to save energy. In this case, the hybrid technology does not help to reduce carbon dioxide emissions.

True energy-saving hybrids have been a good step in reducing the problems of high energy consumption and high emissions caused by gas-guzzling cars. Perhaps in the future, we will find even more ways to make creative uses of technology and finally solve these problems once and for all.



Name _____



Date _____

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Questions

- _____ 1. A hybrid car has a _____.
- A. gasoline engine
 - B. electric motor
 - C. both A and B
 - D. neither A nor B
- _____ 2. Electric motors in hybrid cars may _____.
- A. provide a power assist for highway driving
 - B. provide the main power for slow-speed driving
 - C. both A and B
 - D. neither A nor B
- _____ 3. Most gas-electric hybrid cars must be plugged in to recharge their batteries _____.
- A. never
 - B. daily
 - C. after two hours of driving
 - D. weekly
- _____ 4. Regenerative braking is an important feature in hybrid cars because it _____.
- A. produces electricity
 - B. stops the car more slowly
 - C. is more effective than friction braking
 - D. doesn't use gasoline
- _____ 5. Automatic shut-off and start features in hybrid cars save the energy that would have otherwise been wasted during _____.
- A. speeding up
 - B. slowing down
 - C. braking
 - D. idling
- _____ 6. A hybrid car would probably be most useful when driving _____.
- A. on an interstate highway
 - B. in heavy city traffic
 - C. around a city beltway
 - D. on an open country road
7. List three important features of a hybrid car.
