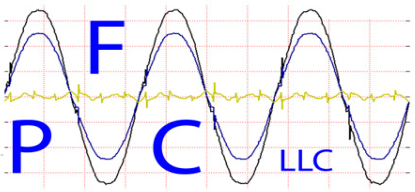

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The Effect of a

Fitch Fuel Catalyst

On the Fuel Economy

Of a 2008 Ford Escape Hybrid

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It has been claimed that the Fitch Fuel catalyst will improve vehicle performance and fuel economy. In an effort to determine the validity of these claims for myself, I chose to install one on my 2008 Ford Escape Hybrid. The vehicle was purchased in February, 2008 and was driven 8 months and 4000 miles prior to installing the catalyst. Fuel economy was carefully monitored during that time period.

As I have a short commute to work in the morning of less than two miles, the vehicle never enters its hybrid mode during the commute. It is during the commute that the vehicle has its poorest mileage performance. This would be classified as city driving without the hybrid.

The second way that the vehicle is operated is in traffic over longer periods. After the engine warms up, the vehicle begins to operate as a hybrid. The internal combustion engine will turn off when stopped at traffic lights or stop signs, which greatly improves fuel economy. This would be classified as city driving with the hybrid.

The third way that the vehicle is used is for highway driving.

The sticker on the vehicle when it was purchased indicated a fuel economy of 27 MPG on the highway and 31 MPG in the city. These mileage figures would have been obtained while using Indolene, a type of gasoline that is used for the Federal Test Procedures on motor vehicles. Unfortunately, commercially available motor fuels don't approach the purity and combustibility of Indolene, resulting in fuel economies that are lower than what is on the vehicle sticker

The vehicle has been driven in "Low" at speeds less than 40 miles per hour and in "Drive" at speeds above 40 miles per hour. Driving the car in Low gear while in traffic enhances the regenerative braking aspects of the hybrid. It will also lengthen brake life. It was operated in this manner, both before and after installing the fuel catalyst. As such, this will not affect the mileage comparison.

For approximately one week after installing the catalyst, vehicle fuel economy was worse than prior to installing the catalyst. This may have had to do with the fact that the vehicle's computer was reset as part of the catalyst installation process.

After two weeks, mileage performance was rechecked. The before and after results appear in Table 1 for all three types of driving listed above.

Table 1 – Fuel Economy Before and After Fuel Catalyst Installation – Ford Escape Hybrid
(Results may be different for other vehicle types)

Mode of Operation	Indolene Fuel Economy (From Vehicle Sticker)	Fuel Economy Before Catalyst	Fuel Economy After Catalyst	% Improvement
City without Hybrid	NA	22	24.5	11.36%
City With Hybrid	31	25.8	29.8	15.50%
Highway	27	26.1	28.5	9.2%

The city fuel economy was measured over a period of two weeks. The highway mileage was measured on the Taconic State Parkway on a trip from Pelham, NY to the Mid Hudson Bridge near Poughkeepsie. The Parkway travels through rolling hills in Northern Westchester County, Putnam County, and Dutchess County. Elevations during the trip varied from sea level to 1133 feet above sea level. Hills are not generally conducive to optimal fuel economy.

Driven in July, without the catalyst, the average fuel economy for the round trip was 26.1 MPG. Driven in November, after the catalyst was installed, the fuel economy on the northern leg was 27.2 MPG with an increase in average elevation. On the return leg of the trip, the fuel economy was 29.8 MPG as we returned to sea level. The average fuel economy for the entire trip was 28.5 MPG. Fuel economy was also checked at highway speeds on a level roadway. Fuel economy varied between 28.4 and 28.8 MPG. Vehicle speeds for all highway measurements varied between 55 MPH and 65 MPH. I was keeping up with the flow of traffic, not trying to optimize fuel economy.1

It can be determined that the fuel catalyst has resulted in a substantial improvement in vehicle fuel economy. It may be psychological, but the vehicle also seems to run more smoothly and also seems to have better acceleration since the catalyst was installed.

Unfortunately, we did not measure exhaust emissions prior to installing the catalyst to determine if there was a reduction in emissions. Intuitively however, if the fuel is combusting more completely resulting in an improvement in mileage, there will be fewer resulting emissions.

The cost for the catalyst and installation was approximately $ 400. The catalyst has a life of 250,000 miles.

A vehicle driven 25,000 miles per year with a fuel economy of 25 miles per gallon would use 1000 gallons of fuel annually. At $ 2.75 per gallon, an 8 % increase in fuel economy would result in a full return on investment of less than two years. If the vehicle is driven more than 25,000 miles per year or has a fuel economy less than 25 miles per gallon, or if fuel prices increase above present levels, then the return on investment will be shorter.


Fitch