GASOLINE Test Results

Automotive Testing and Development Services (ATDS) is pleased to report the results of testing conducted for ECO-FUEL SAVER fuel additive which was tested for fuel economy benefits in a gasoline passenger car application.

The testing was conducted in an on-road environment, using public highways, and based upon the Society of Automotive Engineers (SAE) J1321* (TYPE II) test protocol. Two Ford Taurus V-6 passenger cars were provided for test by the client. Prior to the start of the first phase, over the road testing, ATDS mechanics disconnected the original fuel system and installed as a stand-alone fuel tank in the trunk of each car. Electric fuel pumps and regulators were also installed to ensure the vehicle received the appropriate fuel flow and pressure. The stand-alone fuel tank had quick disconnected fittings on the fuel and return lines so that the tanks could be easily removed from the trunk for weighing after each test run. In this manner it was possible to determine the fuel usage of each precisely.

The SAE J1321* (TYPE II) protocol requires two sequences of test runs. The first sequence of runs is used to establish the Baseline fuel economy of the two vehicles. Normally one of any pair of vehicles, even ones that are essentially the same, will get better fuel economy than the other. The vehicles are run over the course at the same time with the drivers endeavoring to remain in sight of one another and to start and stop the vehicles simultaneously. This way the relative fuel economy of one to the other can be established. The effects of temperature, wind, humidity, traffic, etc., are therefore controlled for and it is only the intrinsic difference in fuel economy between the vehicles that is measured. Drivers are also swapped between the vehicles so as to reduce the effect of driver skill and temperament.

The second sequence of runs is conducted with one vehicle using normal fuel and the other one using related fuel. The runs are conducted and the relative fuel economy of the two vehicles is again determined. The absolute value of fuel economy for the test vehicle with the additive is not compared directly to the economy and then compared from run to run. This ratio comparison minimizes the effects of differing traffic and weather conditions from one day to the next.

During the test, ATDS drivers drove both cars over a real-world road route in the Ontario, CA, area of approximately 54 miles in length. Depending upon traffic conditions the vehicles were able to complete either 2 or 3 legs prior to returning to ATDS for fuel measurement and refill. The cars were fueled with Indolene, a specifically blended unleaded test gasoline which was taken from marked barrels, one for each vehicle.

Prior to beginning driving each day the fuel tanks were removed from the vehicle trunks and weighed on a scale with resolution of 0.02Kg. The weight of the fuel had been previously established by weighing a 5 gallon "Prover" bucket of the fuel on the same scale; the weight of the fuel was 2.79 Kg/gallon. The tanks were then filled to the full mark on the tank and weighed again. This is the starting weight for each run. At the end of the run the cars were stopped in the parking area and the tanks removed and weighed again to provide the ending weight for each run. The process was then repeated for each additional run.

The SAE test protocol calls for the vehicles to run until 3 runs had been completed where the difference in the ration in fuel usage between the cars for those runs was less than 2%. It took a total of seven runs to achieve the 3 runs within the 2% window. Once the Baseline testing was completed the fuel barrel for one vehicle was treated with ECO-FUEL SAVER per the customer's instructions. Then the over-the-road testing was restarted. Neither driver was informed of the whether their vehicle was using the original fuel or the ECO-FUEL SAVER treated fuel to reduce the possibility of a 'placebo' effect. The process continues until again 3 runs are completed where the difference in relative fuel economy of the two vehicles for those runs is within a 2% window. A total of 6 runs were made with one the vehicles using the ECO-FUEL SAVER treated fuel in order to achieve the three repeating runs.

The test results show that the test vehicle, with the ECO-FUEL SAVER additive mixed into its' fuel, showed a 13% improvement in Fuel Economy when compared to the control vehicle.

The power of a comparative test protocol like the SAE J1321 (Type II) is that it removes the effects of changes in weather and traffic from the Fuel Economy equation since both vehicles are operating under exactly the same conditions. In this case, without the use of a comparative test protocol it would have been possible to miss the positive effect of ECO-FUEL SAVER on the economy of the test vehicle.

The results of this test are summarized in the following table. A 13% fuel saving was demonstrated with fuel treated with ECO-FUEL SAVER fuel additive on a 2007 Ford Taurus with only 5,000 miles on its' odometer; therefore it appears possible that there is beneficial fuel economy effect in this application.

SAEJ1321 Type Test of Eco-Fuel Saver
on Gasoline Fueled Vehicles

Date: 10/16/2006

CONTROL VEHICLE

DATE	KG	MILES	GALLONS	BASELINE MPG	
9/25/2006	17.14	157	6.14	25.57	
9/19/2006	11.54	105	4.13	25.40	
9/19/2006	11.9	104	4.26	24.40	
				25.13	

TEST VEHICLE

DATE	KG	MILES	GALLONS	BASELINE MPG	
9/25/2006	18.3	157	6.55	23.95	93.7%
9/19/2006	12.44	104	4.46	23.34	91.9%
9/19/2006	13.02	104	4.66	22.30	91.4%
				23.20	92.3%

With Eco-Fuel Saver

CONTROL VEHICLE

DATE	KG	MILES	GALLONS	WITH ECO-FUEL SAVER MPG	
10/3/2006	19.72	157	7.06	22.2284	
10/9/2006	18.22	157	6.53	24.0584	
10/11/2006	22.64	156	8.11	19.23816	
				21.84	

TEST VEHICLE

DATE	KG	MILES	GALLONS	WITH ECO-FUEL SAVER MPG	
10/3/2006	18.8	157	6.733524	23.32	105%
10/9/2006	17.36	157	6.217765	25.25	105%
10/11/2006	21.42	157	7.67192	20.46	106%
				23.01	105.4%

Net Gain In Relative Fuel Economy **13.02%**