

# EPA Evaluation Program for Aftermarket Products That Are Intended to Improve Fuel Economy or Reduce Emissions

**T**he U.S. Environmental Protection Agency (EPA) conducts a voluntary program to evaluate aftermarket retrofit devices or fuel additives that are intended to improve vehicle fuel economy and/or reduce exhaust emissions. Through engineering, scientific, and statistical analysis of data obtained from independent and EPA laboratory testing, EPA objectively determines the effects a device or fuel additive may have on fuel economy and exhaust emissions. The Agency does not approve, certify, or endorse these products.

## Background

The purpose of the program is to generate, analyze, and disseminate resulting technical data to the public. A manufacturer's participation in the program is voluntary unless ordered by the EPA Administrator or the Federal Trade Commission.

"Retrofit device" means any component that is designed to be installed in or on an automobile (as an addition to, a replacement for, or through alteration or modification of any original component, equipment, or other device) that the manufacturer states will provide higher fuel economy and/or lower emissions. The term also includes fuel additives for use in an automobile. Devices and fuel additives meant to be used by four-wheel highway vehicles with gross vehicle weight of 6,000 pounds or less can be tested in the program. Flow-measuring instruments or other driving aids, oil additives, lubricants, and lubricant additives do not qualify to be tested in this program.

EPA does not approve, certify, or endorse any product tested in this program, any independent laboratory, or the results of any independent laboratory testing. Any claims of EPA certification in this program are false.

## Requirements for Evaluation

To enter this program, manufacturers should first submit an application for evaluation to EPA using the format set forth in the program description document on our web site at: [www.epa.gov/otaq/consumer/b00003.pdf](http://www.epa.gov/otaq/consumer/b00003.pdf). A plan for the device to be tested at an independent test lab should be developed by the applicant in consultation with EPA. If the results of these tests demonstrate a statistically significant improvement in fuel economy and/or emissions reduction, then EPA may choose to allow the device to be tested at its lab. The applicant submitting the product must pay for all testing costs for both the independent lab and EPA tests.

Manufacturers of fuel additives are required to register their product with EPA prior to its introduction into commerce or evaluation in this program. Many of the fuel line devices and liquids sold and associated with vapor bleed devices may be considered additives for the purpose of registration. Registration involves providing a chemical description of the product and certain technical, marketing, and health-effects information. This allows EPA to identify the likely combustion and evaporative emissions. In certain cases, health-effects testing is required for a product to maintain its registration or before a new product can be registered. EPA uses this information to identify products whose emissions may pose an unreasonable risk to public health, warranting further investigation and/or regulation. Information on the registration of fuels and fuel additives is available on our website at: [www.epa.gov/otaq/additive.htm](http://www.epa.gov/otaq/additive.htm).

## Testing

EPA's evaluation program uses the same scientific laboratory test methods that are used to certify vehicles in the United States: the Federal Test Procedure (FTP) and the Highway Fuel Economy Test (HFET). Both tests involve placing the test vehicle on a dynamometer (a laboratory test machine that simulates road conditions) and driving through a specified trace simulating city and highway driving. Exhaust gases are captured and analyzed to determine the rate of each pollutant emission in grams per mile (g/mi) and to calculate fuel economy in miles per gallon (mpg).

The controlled laboratory conditions and use of a standard test fuel in this evaluation program minimizes variables one would have to address when using actual outdoor driving on roadways. Laboratory testing assures that the test results' comparisons, with and without the device, are not influenced by outside, uncontrollable factors, such as individual driving habits, wind, weather, and traffic.

EPA conducts tests on at least two different vehicles which are representative of the typical vehicle for which the device or additive is intended. The tests are done in three stages. First, the baseline is established by testing each vehicle without the device at least three times. Next, the device or additive is installed on the vehicles and the same tests are repeated. For the third stage, if and when EPA deems it necessary, the device is removed from the vehicles and the tests are done again to determine whether the device affected the vehicles' original performance. Applicants are invited to be present during installation and testing of the device at EPA's test laboratory located in Ann Arbor, Michigan.

## Test Results

EPA analyzes the data obtained from testing for statistically significant differences, either positive or negative. Emission results for each of the criteria pollutants (carbon monoxide, hydrocarbons and nitrogen oxides) are analyzed. EPA publishes a report of its findings in the Federal Register, and posts it on our website.

If EPA finds that the device or additive caused a statistically significant increase in any of the criteria pollutants, EPA will consider installation of the device/additive as tampering with the emission control system even in the case where fuel economy is improved by the product. Tampering with a vehicle's emission control system is illegal.

## For More Information

A complete description of the Aftermarket Retrofit Device Evaluation Program is available on EPA's Office of Transportation and Air Quality website at:

[www.epa.gov/otaq/consumer/reports.htm](http://www.epa.gov/otaq/consumer/reports.htm)

A list of independent testing laboratories and an application for testing at EPA's National Vehicle Fuel Emissions Laboratory are also available on the website.

You can also contact the OTAQ library for document information at:

U.S. Environmental Protection Agency  
Office of Transportation and Air Quality Library  
2000 Traverwood Drive  
Ann Arbor, MI 48105  
734-214-4311 & 214-4434  
E-mail: [Group\\_AALibrary@epa.gov](mailto:Group_AALibrary@epa.gov)