

Results of the investigation of the influence of the petrol system cleaner „Petrol System Cleaner Plus” on the emissions of a gasoline engine

The company GAT Gesellschaft für Kraftstoff- und Automobiltechnologie mbH & Co. KG in Uhlstädt-Kirchhasel offers various products to improve the combustion process in engines. For the detection of the influence of the petrol system cleaner “Petrol System Cleaner Plus” on the emissions of a gasoline engine different tests have been performed under different charge conditions on a motor power testing station in the laboratory for internal combustion engines of the Universität der Bundeswehr München.

Experimental engine:

An in-line six-cylinder gasoline engine of the company BMW with four-valve technology and an engine displacement of 2.5 litres was used as test driver. The engine is equipped with variable camshaft control (VANOS).

Used measuring methods:

The emission levels were measured before the introduction of the exhaust in the catalytic converter. A non-dispersive infra-red analyser (NDIR) was used to determine the carbon monoxide and carbon dioxide concentrations and a chemiluminescence analyser (CLD) was used to determine the nitrogen oxide levels. The proof of the unburned hydrocarbons was determined using a flame ionization detector (FID).

Results:

While the measurements showed no significant changes in the emission of unburned hydrocarbons and carbon monoxide after the addition of the fuel system cleaner under all charge conditions, the carbon dioxide and nitrogen oxide values were significantly reduced. The CO₂ emissions were in average reduced by almost 22%, the NO_x emissions by 35%. The investigations also showed that the product “Petrol System Cleaner Plus” has no negative influence on the performance and fuel consumption data of the engine.

