

FUEL REQUIREMENTS FOR PRESENT AND FUTURE VEHICLE

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Abstract

The automotive industry is now facing new challenging issues, related to environmental aspect, to the increasing customer expectations and to the international expansion of the automotive market. The OEMs have therefore developed new engine technologies to respond to these challenges. The World Wide Fuel Charter is collecting the common OEMs recommendations, as per the fuel quality that should be offered. The aim is a) to improve the fuel quality and b) to achieve a harmonization of the worldwide fuel quality. Four categories are proposed, adapted to the fundamental customer expectations and to the level of local emission control. The main properties that should comply with WWFC recommendations are detailed, for both diesel fuel and gasoline. The current European fuel regulations and standards are reviewed, focusing on future requirements in light of 2005 and beyond and of the recent European Commission proposal on bio – fuels. The fuel requirements needed for modern engines are then detailed. These needs are related to the modern engine technologies of increasing complexity, namely the Diesel Common Rail and the Gasoline Direct Injection. The fuel cleanliness, the gasoline deposit control capability and the anti – corrosion performance of diesel fuel are the main requirements that are detailed.

Keywords

Fuel quality, diesel fuel, gasoline, engine, automotive