Fourth edition
2018-10

Diesel fuel — Assessment of lubricity using the high-frequency reciprocating rig (HFRR) —

Part 1:
Test method

Carburant diesel — Évaluation du pouvoir lubrifiant au banc alternatif à haute fréquence (HFRR) —

Partie 1: Méthode d'essai

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by ISO/TC 22, *Road vehicles*, Subcommittee SC 34, *Propulsion, powertrain, and powertrain fluids*, in collaboration with Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources.*

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

This fourth edition of ISO 12156-1 cancels and replaces the third edition (ISO 12156-1:2016), which has been technically revised after a user feedback survey. This revision includes the following changes:

— lessening of the requirements on reagents and correction of the ambient test conditions (Figure 2) to reflect the actual conditions met by participants in the inter-laboratory test program;

— the Annex containing details of the major changes (adding the camera and deletion of the humidity correction factor) between the second and third edition of this document has been removed; and

— Annex A has been populated with updated photographs of typical wear scars.

A list of all parts in the ISO 12156 series can be found on the ISO website.

Introduction

All diesel fuel injection equipment has some reliance on diesel fuel as a lubricant. Wear due to excessive friction resulting in shortened life of engine components, such as diesel fuel injection pumps and injectors, has sometimes been ascribed to lack of lubricity in the fuel.

The relationship of test results to diesel injection equipment component distress due to wear has been demonstrated for some fuel/hardware combinations where boundary lubrication is a factor in the operation of the component[1)].

Test results from fuels tested to this procedure have been found to correlate with many fuel/hardware combinations and provide an adequate prediction of the lubricating quality of the fuel. The correlation of biodiesel blends has been validated through 15 years of field experience and anecdotal data.

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1) NIKANJAM. Manuch, Teri CROSBY, Paul HENDERSON, Chris GRAY, Klaus MEYER, and Nick DAVENPORT, “ISO Diesel Fuel Round Robin Program,” SAE Technical Paper No. 952372, 1995, ISSN 0148- 7191, doi: 10.4271/952372