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ICS 75.160.20

**AUTOMOTIVE FUELS - WATER IN DIESEL
FUEL EMULSIONS FOR USE IN INTERNAL
COMBUSTION ENGINES - REQUIREMENTS
AND TEST METHODS**

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WORKSHOP

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AGREEMENT

ICS 75.160.20

English version

Automotive fuels - Water in diesel fuel emulsions for use in internal combustion engines - Requirements and test methods

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

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Foreword

This CEN/CENELEC Workshop Agreement lays down requirements for emulsion fuels as delivered by the supplier to captive fleets.

This CEN/CENELEC Workshop Agreement is based on current knowledge at the time of publishing, but will require revision when the specification for diesel, EN 590, which defines a blending component in the emulsion fuel, will be revised, or based on further experiences with the use and/or testing of emulsion fuels.

In this edition of CWA 15145:2004 all relevant characteristics, requirements and test methods are specified.

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the Secretariat of which is held by the Netherlands Standardization Institute (NEN). Its constitution was supported by CEN following the public call for participation made on 29-01-2004.

A list of the individuals and organizations which supported the technical consensus represented by the CEN/CENELEC Workshop Agreement is available to purchasers from the CEN Management Centre. These organizations were drawn from the following economic sectors: international energy (fuel, oil) and in particular emulsion fuel companies, refinery organizations, manufacturers of emulsion fuels, suppliers of diesel engine parts, national engine manufacturers organizations, consulting companies and the European Emulsified Fuels Manufacturers Association (EEFMA).

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Comments or suggestions from the users of this CEN Workshop Agreement are welcome and should be addressed to the CEN Management Centre.

CWA 15145:2004 (E)

1 Scope

This CEN Workshop Agreement specifies requirements and test methods for marketed and delivered emulsion fuel. It is applicable to emulsion fuel for use in internal combustion engine vehicles designed to run on diesel as specified in EN 590.

NOTE 1 Deliverance to public fuelling stations is currently not envisaged.

Emulsion fuel is a mixture of 5 % (*m/m*) to 15 % (*m/m*) water, diesel and additives to allow use in internal combustion engines, including the possibility of having different 'seasonal grades' for national and local requirements.

NOTE 2 For the purposes of this CEN Workshop Agreement, the terms “% (*m/m*)” and “% (*V/V*)” are used to represent respectively the mass fraction and the volume fraction.

Two grades of emulsion fuel are introduced, that differentiate for the amount of water and other related parameters (density, viscosity, stability). The higher water content emulsions (Grade A) provide the best environmental benefits, while the lower water content emulsions (Grade B) will provide less power loss, thus enabling applications where power loss is a critical issue.

NOTE 3 Public availability at retail sites of emulsion fuels, other than with specific local exemption rules, may not be allowed according to national legislation implementing European Community Directives for diesel fuels [1].

2 Normative references

This Workshop Agreement incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Workshop Agreement only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 116:1997, *Diesel and domestic heating fuels - Determination of cold filter plugging point*.

EN 590, *Automotive fuels – Diesel – Requirements and test methods*.

EN 12662:1998, *Liquid petroleum products – Determination of contamination in middle distillates*.

EN 27888, *Water quality; determination of electrical conductivity (ISO 7888:1985)*

EN ISO 2160, *Petroleum products - Corrosiveness to copper - Copper strip test (ISO 2160:1998)*.

EN ISO 2592, *Determination of flash point - Cleveland open cup method (ISO 2592:2000)*

EN ISO 3104, *Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104:1997, including Cor. 2:1999)*.

EN ISO 3170, *Petroleum liquids – Manual sampling (ISO 3170:2004)*.

EN ISO 3171, *Petroleum liquids – Automatic pipeline sampling (ISO 3171:1988)*.

EN ISO 12156-1:1998, *Diesel fuels - Assessment of lubricity by HFRR (ISO 12156-1:1997, including Cor.1:1998)*.

EN ISO 12185, *Crude petroleum and petroleum products - Determination of density - Oscillating U-tube method (ISO 12185:1996, including Cor.1:2001)*.

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