International Standard

ISO 20846

Petroleum and related products — Determination of sulfur content of automotive fuels — Ultraviolet fluorescence method

Produits pétroliers et connexes — Détermination de la teneur en soufre des carburants pour automobiles — Méthode par fluorescence ultraviolette

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 document 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 Technical Committee ISO/TC 28, *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 19, *Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 20846:2019), which has been technically revised.

The main changes are as follows:

— the extension of the application scope to include higher blends of biodiesel (FAME) from 50 % up to neat FAME (B100);

— further instructions regarding the (validity of the) multi-point calibration have been implemented.

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.

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1 Scope

This document specifies an ultraviolet (UV) fluorescence test method for the determination of the sulfur content of the following products:

— having sulfur contents in the range 3 mg/kg to 500 mg/kg:

  — motor gasolines containing up to a mass fraction of 3,7 % (3,7 % (*m/m*)) of oxygen [including those blended with a volume fraction of ethanol up to about 10 % (10 % (*V/V*))];

  — diesel fuels, including those containing up to a volume fraction of about 50 % of fatty acid methyl ester (FAME);

— having sulfur contents in the range of 3 mg/kg to 45 mg/kg:

  — synthetic fuels, such as hydrotreated vegetable oil (HVO) and gas to liquid (GTL);

— having sulfur contents in the range of 3 mg/kg to 30 mg/kg:

  — neat FAME (B100) and diesel fuels containing volume fraction of more than 50 % of FAME.

Other products (for example process feeds and effluents) can be analysed and other sulfur contents can be determined according to this test method, however, no precision data for products other than automotive fuels and for results outside the specified range have been established for this document. Halogens interfere with this detection technique at concentrations above approximately 3 500 mg/kg.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1042, *Laboratory glassware — One-mark volumetric flasks*

ISO 3170, *Hydrocarbon Liquids — Manual sampling*

ISO 3171, *Petroleum liquids — Automatic pipeline sampling*

ISO 3675, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*

ISO 12185, *Crude petroleum, petroleum products and related products — Determination of density — Laboratory density meter with an oscillating U-tube sensor*