SLOVENSKI STANDARD
SIST EN ISO 16591:2011

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Naftni proizvodi - Določevanje koncentracije žvepla - Oksidativna mikrokulometrična metoda (ISO 16591:2010)

Petroleum products - Determination of sulfur content - Oxidative microcoulometry method (ISO 16591:2010)

Mineralölerzeugnisse - Bestimmung des Schwefelgehaltes - Oxidatives mikrocoulometrisches Verfahren (ISO 16591:2010)

Produits pétroliers - Dosage du soufre - Méthode par microcoulométrie oxydante (ISO 16591:2010)

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Produits pétroliers - Dosage du soufre - Méthode par microcoulométrie oxydante (ISO 16591:2010)

Mineralölerzeugnisse - Bestimmung des Schwefelgehaltes - Oxidatives mikrocoulometrisches Verfahren (ISO 16591:2010)

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Foreword

This document (EN ISO 16591:2010) has been prepared by Technical Committee ISO/TC 28 “Petroleum products and lubricants” in collaboration with Technical Committee CEN/TC 19 “Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin” the secretariat of which is held by NEN.

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INTERNATIONAL STANDARD

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Petroleum products — Determination of sulfur content — Oxidative microcoulometry method

Produits pétroliers — Dosage du soufre — Méthode par microcoulométrie oxydante

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO 16591 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

Petroleum products — Determination of sulfur content — Oxidative microcoulometry method

WARNING — The use of this International Standard may involve hazardous material, operations and equipment. This International Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies a method for the determination of the sulfur content by oxidative microcoulometry of petroleum light and middle distillates with a final boiling point not higher than 400 °C. It is applicable to materials with sulfur contents in the range of 1 mg/kg to 100 mg/kg. Products with sulfur contents above 100 mg/kg can be analysed after dilution with a suitable sulfur-free solvent. Products with sulfur contents below 1 mg/kg can also be analysed by a modified technique described in Annex A. The precision quoted only applies to measurements in the 1 mg/kg to 100 mg/kg range. Nitrogen interferes with the analysis at concentrations above 0,1 % (m/m), and chlorine interferes at concentrations above 1,0 % (m/m), but these interferences are overcome by the addition of sodium azide to the cell electrolyte. Bromine and organometallic compounds also interfere with the analysis at concentrations above approximately 500 mg/kg.

NOTE 1 The microcoulometric method is capable of analysing light liquid hydrocarbons boiling in the range from 26 °C to 274 °C (for example, naphtha and MS samples) that undergo pyrolysis at 900 °C to 1 200 °C. The combustion of high boiling components (for example, diesel) can result in the formation of carbonaceous deposits in the inlet portion of the combustion tube, which need to be removed frequently.

NOTE 2 The results obtained using this International Standard on light and light-middle distillates generally approximate to those obtained using ISO 4260.

NOTE 3 For the purposes of this International Standard, the term "% (m/m)" is used to represent the mass fraction of a material.

2 Normative references

The following referenced documents are indispensable for the application 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 3170, *Petroleum 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 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 12185, *Crude petroleum and petroleum products — Determination of density — Oscillating U-tube method*

