

BS 2000-510: Petroleum products — Determination of organic halogen content — Oxidative microcoulometric method

(Identical with IP 510-2004)

The European Standard EN 14077:2003 has the status of a
British Standard

ICS 75.080

National foreword

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The Institute of Petroleum publishes and sells all Parts of BS 2000, and all BS EN petroleum test methods that would be Part of BS 2000, both in its annual publication “Standard methods for analysis and testing of petroleum and related products and British Standard 2000 Parts” and individually.

For further information is available from:

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halogènes organiques - Méthode par microcoulométrie
oxydante

Mineralölerzeugnisse - Bestimmung des Gehaltes an
organisch gebundenem Halogen - Verfahren der oxidativen
Mikrocoulometrie

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Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	4
4 Principle	5
5 Reagents and materials.....	5
6 Apparatus	7
7 Sampling and sample preparation	8
7.1 Sampling	8
7.2 Sample preparation	8
7.2.1 Distillate fuels.....	8
7.2.2 Residual fuels.....	8
8 Preparation of apparatus	9
9 Procedure	12
9.1 Check of apparatus stability	12
9.2 Sample analysis	13
10 Calculation.....	13
11 Expression of results	14
12 Precision	14
12.1 General.....	14
12.2 Repeatability, r	14
12.3 Reproducibility, R	14
12.4 Bias.....	14
13 Test report	14
Annex A (normative) Calculation of conversion factor.....	16
Bibliography	17

Foreword

This document EN 14077:2003 has been prepared by CEN /TC 19, "Petroleum products, lubricants and related products", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

In this standard annex A is normative.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

The method is directly applicable to the determination of low contents (2 mg/kg to 100 mg/kg) of organic halogen in petroleum products such as gasolines, middle distillates and residual fuels. The method can also be applied to crude oils; however, no precision data have been established for this additional product type. Except for fluorine (F), the organic halogens chlorine (Cl), bromine (Br) and iodine (I) that may be present in the sample are determined quantitatively. The halogen is reported as the equivalent number of chloride ions. A sample preparation is described for the removal of inorganic halides from residual fuels, before the determination of the organic halogen content. This procedure is essential to obtain a result of organic halogen only.

NOTE The total halogen content can be measured by ISO 15597 'Petroleum and related products – Determination of chlorine and bromine content – Wavelength-dispersive X-ray fluorescence spectrometry method'. This method does not use a combustion step, but it requires a sample preparation according to clause 7 of this standard to determine the organic halogen content.

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

2 Normative references

This European Standard 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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 595-2, *Reusable all-glass or metal-and-glass syringes for medical use - Part 2: Design, performance requirements and tests (ISO 595-2:1987).*

EN ISO 3170, *Petroleum liquids - Manual sampling (ISO 3170:1988, including Amendment 1:1998).*

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

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987).*

ISO 595-1, *Reusable all-glass or metal-and-glass syringes for medical use - Part 1: Dimensions.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1 organic halogen

all organically bound halogen, which are converted to the halide ion under the conditions of the test, titrated with electrolytically generated silver ions and expressed as the equivalent number of chloride ions

NOTE Under the conditions of this test, organic halogen compounds include organic compounds of chlorine (Cl), bromine (Br) and iodine (I). It does not include organic compounds of fluorine (F). Some inorganic halide compounds, if not quantitatively removed, are also determined as organic halogen.

3.2 residual fuel

residue of any distillation process, applied to hydrocarbon mixtures derived from crude petroleum and obtained either directly or through a specific process, which is intended to be used as a fuel oil or a fuel oil component