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Petroleum products — Determination of sulfur content of automotive fuels — Energy-dispersive X-ray fluorescence spectrometry

Produits pétroliers — Détermination de la teneur en soufre des carburants pour automobiles — Spectrométrie de fluorescence de rayons X dispersive en énergie



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 20847 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

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Introduction

This International Standard is directed specifically at the lower end of the concentration range covered in ISO 8754 ([3] in the Bibliography), which covers sulfur contents from 0,01 % (*m/m*) up to 5,00 % (*m/m*). By restriction of instrument type, a better signal to background ratio for sulfur K emission is assured and by the use of matrix matched calibration standards or other means of matrix corrections (as detailed below), the precision and accuracy of results for samples having varying C:H mass ratios and oxygen contents are improved. A knowledge of the general composition of the sample for analysis is advantageous in obtaining the best test result.

Where matrix matching is not used and where the C:H mass ratio of the test sample is known or can be determined, accuracy may be improved by the use of the equation given in A.2.2 to correct the result to the C:H mass ratio of the calibration standards, i.e. the reference diluent oil (4.1).

Some instruments include the capability for the separate measurement of scattered radiation from the X-ray tube, and notes for information are provided in A.2.3 on the use of this scattered radiation for compensation for matrix effects in the test sample.