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## **Petroleum products — Determination of low concentration of sulfur in automotive fuels — Energy-dispersive X-ray fluorescence spectrometric method**

*Produits pétroliers — Détermination de la teneur en soufre en faible concentration dans les carburants pour automobiles — Méthode spectrométrique de fluorescence de rayons X dispersive en énergie*



Reference number  
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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 13032 was prepared by 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 collaboration with ISO Technical Committee TC 28, *Petroleum products and lubricants*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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## Introduction

This International Standard is directed specifically at the lower end of the concentration range covered in ISO 20847<sup>[2]</sup>. By selecting the instrument type, a better signal-to-background ratio for sulfur K-L<sub>2,3</sub> emission is assured. A knowledge of the general composition of the sample for analysis is advantageous in obtaining the best test result.

NOTE IUPAC X-ray line notation (S K-L<sub>2,3</sub>) is used in this International Standard; the corresponding Siegbahn X-ray line notation (S-K $\alpha$ ) is being phased out.

Where matrix matching is not used and where the C:H mass ratio of the test sample is known or can be determined, accuracy can be improved by the use of Equation (A.1) (see A.2.3) to correct the result to the C:H mass ratio of the calibration standards, i.e. the reference diluent oil (see 4.1).

Some instruments include the capability for instrument-based matrix correction; notes on the use of this approach to compensate for matrix effects in the test sample are provided in A.3 for information.

This International Standard is based on IP test method PM DU<sup>[3]</sup> developed by the Energy Institute.