

INTERNATIONAL
STANDARD

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**Petroleum products — Determination of
alkyl nitrate in diesel fuels — Spectrometric
method**

*Produits pétroliers — Détermination du nitrate d'alkyle dans les carburants
diesels — Méthode spectrométrique*



Reference number
ISO 13759:1996(E)

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.

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.

International Standard ISO 13759 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*.

Annex A of this International Standard is for information only.

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Petroleum products — Determination of alkyl nitrate in diesel fuels — Spectrometric method

WARNING — The use of this International 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.

1 Scope

This International Standard specifies a procedure for the determination of alkyl nitrate in diesel fuel in the concentration range 0,03 % (V/V) to 0,30 % (V/V) (volume fraction 0,03 % to 0,30 %).

A knowledge of the specific alkyl nitrate present in the diesel fuel is required for accurate determinations, as the calibration of instrumentation is reliant on reference solutions containing the nitrate to be analysed. When the specific alkyl nitrate is not known, a result comparative to a reference alkyl nitrate (4.2) gives indicative information.

NOTE — The addition of certain alkyl nitrates to diesel fuel enhances the cetane number as measured by the engine test described in ISO 5165. It has no effect on the cetane index value as described in ISO 4264. See annex A.

The presence of nitrate esters, inorganic nitrate ions and nitrogen oxides will interfere with this determination.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

ISO 835-1:1981, *Laboratory glassware — Graduated pipettes — Part 1: General requirements.*

ISO 1042:1983, *Laboratory glassware — One-mark volumetric flasks.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*