ICS 67.200.10 SLOVENSKÁ TECHNICKÁ NORMA Apríl 2025

STN	**Deriváty tukov a olejov Metylestery mastných kyselín (FAME) Stanovovanie obsahu Ca, K, Mg a Na optickou emisnou spektrálnou analýzou s indukčne viazanou plazmou (ICP OES)**	**STN EN 14538** 65 6534

Fat and oil derivatives - Fatty acid methyl ester (FAME) - Determination of Ca, Mg, Na, K and P content by optical emission spectral analysis with inductively coupled plasma (ICP OES)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/25

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ICS 67.200.10 Supersedes EN 14538:2006

English Version

Fat and oil derivatives - Fatty acid methyl ester (FAME) - Determination of Ca, Mg, Na, K and P content by optical emission spectral analysis with inductively coupled plasma (ICP OES)

Produits dérivés des corps gras - Esters méthyliques d'acides gras (EMAG) - Détermination de la teneur en Ca, Mg, Na, K et P par spectrométrie d'émission optique avec plasma à couplage inductif (ICP OES)

Erzeugnisse aus pflanzlichen und tierischen Fetten und Ölen - Fettsäure-Methylester (FAME) - Bestimmung des Ca-, Mg-, Na-, K-, und P-Gehaltes durch optische Emissionsspektralanalyse mit induktiv gekoppeltem Plasma (ICP OES)

This European Standard was approved by CEN on 25 November 2024.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 14538:2025) has been prepared by 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.

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of an identical text or by endorsement, at the latest by July 2025, and conflicting national standards shall be withdrawn at the latest by July 2025.

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

This document will supersede EN 14538:2006.

EN 14538:2025 includes the following significant technical changes with respect to EN 14538:2006:

— update of the precision details for Ca, Mg, Na and K following the statistical analysis of new interlaboratory tests data [1] in accordance with EN ISO 4259-1 [2];

— inclusion of the determination of P content with precision details obtained from the statistical analysis of new interlaboratory tests data [1] in accordance with EN ISO 4259-1 [2];

— addition of Clause 3 “Terms and definitions” and renumbering of the other clauses accordingly;

— addition of a Bibliography section with two references.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies a procedure for the direct determination of the content of the soap building elements Calcium (Ca), Magnesium (Mg), Sodium (Na) and Potassium (K) as well as Phosphorus (P) in fatty acid methyl esters (FAME) by ICP OES.

The concentrations of each component or the combinations of some to which this method is applicable are given in Table 1.

Table 1 — Scope ranges for each element

Element	Scope range mg/kg
Ca	0,3 – 5,4
Mg	0,3 – 4,6
Na	0,4 – 5,0
K	0,6 – 5,3
P	1,0 – 5,0
Ca + Mg	0,5 – 9,4
Na + K	1,0 – 9,9
Ca + Mg + Na + K	1,4 – 19,3

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

NOTE For the purposes of this document, the term "% (V/V)" is used to represent the volume fraction, φ, of a material.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN ISO 3170, *Petroleum liquids — Manual sampling (ISO 3170)*