

<b>STN</b>	<b>Rastlinné oleje</b> <b>Stanovenie nasýtených uhľovodíkov</b> <b>minerálnych olejov (MOSH) a aromatických</b> <b>uhľovodíkov minerálnych olejov (MOAH)</b> <b>on-line analýzou vysokoúčinnou kvapalinovou</b> <b>chromatografiou-plynovou chromatografiou s</b> <b>plameňovoionizačnou detekciou (HPLC-GC-FID)</b> <b>Metóda na kvantifikáciu dolného limitu</b> <b>(ISO 20122: 2024, opravená verzia 2024-11)</b>	<b>STN</b> <b>EN ISO 20122</b>  58 8798
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Vegetable oils - Determination of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) with online-coupled high performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID) analysis - Method for low limit of quantification (ISO 20122:2024, Corrected version 2024-11)

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**Vegetable oils - Determination of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) with online-coupled high performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID) analysis - Method for low limit of quantification (ISO 20122:2024, Corrected version 2024-11)**

Huiles végétales - Dosage des hydrocarbures saturés d'huile minérale (MOSH) et des hydrocarbures aromatiques d'huile minérale (MOAH) par analyse par chromatographie en phase liquide haute performance et chromatographie en phase gazeuse couplées à un détecteur à ionisation de flamme (CLHP-CG-FID) en ligne - Méthode pour une faible limite de quantification (ISO 20122:2024, Version corrigée 2024-11)

Pflanzliche Öle - Bestimmung von gesättigten Mineralölkohlenwasserstoffen (MOSH) und aromatischen Kohlenwasserstoffen (MOAH) mit Analyse durch online gekoppelte Hochleistungsflüssigkeitschromatographie-Gaschromatographie mit Flammenionisationsdetektion (HPLC-GC-FID) - Verfahren für die niedrige Bestimmungsgrenze (ISO 20122:2024, korrigierte Fassung 2024-11)

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**EN ISO 20122:2024 (E)**

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## **European foreword**

This document (EN ISO 20122:2024) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 307 "Oilseeds, vegetable and animal fats and oils and their by-products - Methods of sampling and analysis" the secretariat of which is held by AFNOR.

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 October 2024, and conflicting national standards shall be withdrawn at the latest by October 2024.

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## **Endorsement notice**

The text of ISO 20122:2024, Corrected version 2024-11 has been approved by CEN as EN ISO 20122:2024 without any modification.



# International Standard

**ISO 20122**

## **Vegetable oils — Determination of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) with online-coupled high performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID) analysis — Method for low limit of quantification**

*Huiles végétales — Dosage des hydrocarbures saturés d'huile minérale (MOSH) et des hydrocarbures aromatiques d'huile minérale (MOAH) par analyse par chromatographie en phase liquide haute performance et chromatographie en phase gazeuse couplées à un détecteur à ionisation de flamme (CLHP-CG-FID) en ligne — Méthode pour une faible limite de quantification*

**First edition  
2024-04**

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2024-11**

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**ISO 20122:2024(en)**

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**ISO 20122:2024(en)****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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 34 *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 307, *Oilseeds, vegetable and animal fats and oils and their by-products — Methods of sampling and analysis*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This corrected version of ISO 20122:2024 incorporates the following corrections:

- in [8.7.1](#), “the MOAH fraction from 5,7 min” has been corrected to “the MOAH fraction from 4,7 min”.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

**ISO 20122:2024(en)****Introduction**

In order to achieve a low limit of quantification (LOQ), the method contains additional and partially modified processing steps, specifications for the uniform processing of defined product groups and additional requirements for system suitability compared to EN 16995:2017.

The method has been tested in an interlaboratory study via the analysis of both naturally contaminated and spiked vegetable oil samples, ranging from 1 mg/kg to 75 mg/kg for MOSH, and from 1 mg/kg to 7 mg/kg for MOAH.

# Vegetable oils — Determination of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) with online-coupled high performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID) analysis — Method for low limit of quantification

## 1 Scope

This document specifies a procedure for the determination of saturated and aromatic hydrocarbons (from C10 to C50) in vegetable fats and oils using the online-coupled high performance liquid chromatography-gas chromatography-flame ionization detection (HPLC-GC-FID).<sup>[4][5][6]</sup> This document does not apply to other matrices.

The method is applicable for the analysis of mineral oil saturated hydrocarbons (MOSH) and/or mineral oil aromatic hydrocarbons (MOAH).

According to the results of the interlaboratory studies, the method has been proven suitable for MOSH mass concentrations above 3 mg/kg and MOAH mass concentrations above 2 mg/kg.

In case of suspected interferences, the fossil origin of the MOSH and MOAH fraction can be verified by examination by GC×GC-MS.

An alternative method for the epoxidation of the MOAH fraction (performic acid epoxidation) is proposed in [Annex C](#). This alternative method provides comparable results to the ethanolic epoxidation of the MOAH fraction described in [8.6](#). This alternative method for epoxidation has proven to be efficient for samples with a high amount of interferences in the MOAH fraction (e.g. tropical oils).<sup>[14]</sup>

## 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.

ISO 661, *Animal and vegetable fats and oils — Preparation of test sample*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**