
Determination of fatty acid methyl esters (*cis* and *trans*) and squalene in olive oil and other vegetable oils by gas chromatography

Détermination des esters méthyliques d'acides gras (cis et trans) et du squalène dans l'huile d'olive et d'autres huiles végétales par chromatographie en phase gazeuse



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Foreword

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

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.

Determination of fatty acid methyl esters (*cis* and *trans*) and squalene in olive oil and other vegetable oils by gas chromatography

1 Scope

This document specifies the determination of the fatty acid methyl esters (FAME) and squalene in olive oil and other vegetable oils by gas chromatography (GC).

This document is applicable to the determination of FAME from C12 to C24, including saturated, *cis*- and *trans*-monounsaturated, *cis*- and *trans*-polyunsaturated FAME and squalene.

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*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

squalene content

mass fraction of squalene in the sample

Note 1 to entry: As determined under the conditions specified in this document.

Note 2 to entry: The squalene content is expressed in milligrams per kilogram of oil, without a decimal place.

3.2

fatty acids methyl esters

FAME

percentage area of triglyceride fatty acids as well as free fatty acids that has been methylated in the sample

Note 1 to entry: As determined under the conditions specified in this document.

Note 2 to entry: The FAME are expressed as percentage area of FAME (% area of individual fatty acid per 100 % area of total FAME present in the sample taken).

4 Principle

FAME are formed by *trans*-esterification with methanolic solution of potassium hydroxide at room temperature. FAME from C12 to C24, including saturated, *cis*- and *trans*- monounsaturated and *cis*- and