
**Animal and vegetable fats and oils —
Determination of oxidative stability
(accelerated oxidation test)**

*Corps gras d'origines animale et végétale — Détermination de la
stabilité à l'oxydation (essai d'oxydation accéléré)*



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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.

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 documents 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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

This third edition cancels and replaces the second edition (ISO 6886:2006), of which it constitutes a minor revision.

Animal and vegetable fats and oils — Determination of oxidative stability (accelerated oxidation test)

1 Scope

This International Standard specifies a method for the determination of the oxidative stability of fats and oils under extreme conditions that induce rapid oxidation: high temperature and high air flow. It does not allow determination of the stability of fats and oils at ambient temperatures, but it does allow a comparison of the efficacy of antioxidants added to fats and oils.

The method is applicable to both virgin and refined animal and vegetable fats and oils. Milk and milk products (or fat coming from milk and milk products) are excluded from the scope of this International Standard.

NOTE The presence of volatile fatty acids and volatile acidic oxidation products prevents accurate measurement.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

3.1

induction period

time between the start of the measurement and the time when the formation of oxidation products rapidly begins to increase

3.2

oxidative stability

induction period, expressed in hours, determined according to the procedure specified in this International Standard

Note 1 to entry: A temperature of 100 °C to 120 °C is usually applied for the determination of oxidative stability. Depending on the oxidative stability of the sample under test, or when an extrapolation of regression is required, the determination may be carried out at other temperatures. The optimal induction period is between 6 h to 24 h. A temperature increase or decrease of 10 °C decreases or increases the induction period by a factor of approximately 2.

3.3

conductivity

ability of a material to conduct electric current

4 Principle

A stream of purified air is passed through the sample, which has been brought to a specified temperature. The gases released during the oxidation process, together with the air, are passed into a flask containing water that has been demineralized or distilled and contains an electrode for