International Standard ISO 6320

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Animal and vegetable fats and oils — Determination of refractive index

Corps gras d'origines animale et végétale — Détermination de l'indice de réfraction

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6320 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in July 1982.

It has been approved by the member bodies of the following countries :

Australia	Iraq	Portugal
Canada	Israel	Romania
Chile	Italy	South Africa, Rep. of
Egypt, Arab Rep. of	Kenya	Tanzania
Ethiopia	Korea, Rep. of	Thailand
France	Malaysia	Turkey
Germany, F. R.	Mexico	United Kingdom
Hungary	New Zealand	USA
India	Peru	USSR
Iran	Poland	Yugoslavia

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Austria
Netherlands

Printed in Switzerland

Animal and vegetable fats and oils — Determination of refractive index

1 Scope and field of application

This International Standard specifies a method for the determination of the refractive index of animal and vegetable fats and oils.

2 References

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

ISO 5555, *Animal and vegetable fats and oils — Sampling.*

3 Definition

refractive index (of a medium) : The ratio of the velocity of light of a definite wavelength in a vacuum to its velocity in the medium.

In practice, the velocity of light in air is used in place of that in a vacuum, and, unless otherwise specified, the selected wavelength is the mean wavelength of the sodium D-lines (589,6 nm).

The refractive index of a given substance varies with the wavelength of the incident light and with temperature. The notation used is n_D^t, where t is the temperature in degrees Celsius.

4 Principle

Measurement, by means of a suitable refractometer, of the refractive index of a liquid sample at a constant temperature.

5 Reagents

5.1 **α-Bromonaphthalene,** or **ethyl laurate,** of quality suitable for refractometry, and of known refractive index.

5.2 **Trichloroethylene.** or other suitable solvents such as **hexane, light petroleum, acetone, toluene,** for cleaning the prism of the refractometer.

6 Apparatus

Usual laboratory equipment, and in particular :

6.1 **Refractometer,** for example of the Abbe type, suitable for measurements of refractive index to within 0,000 2 over the range n_D = 1,300 0 to n_D = 1,700 0.

6.2 **Light source : sodium vapour lamp.**

White light can also be used if the refractometer is fitted with an achromatic compensation system.

6.3 **Glass plate,** of known refractive index.

6.4 **Water bath,** thermostatically controlled, with a circulation pump, capable of being controlled to the nearest 0,1 °C.

6.5 **Water bath,** capable of being controlled at the temperature at which the measurements are to be made (in the case of solid samples).

7 Sampling

See ISO 5555.

8 Procedure

8.1 Preparation of the test sample

Prepare the test sample in accordance with ISO 661.

The refractive index shall be determined on completely anhydrous filtered fats and oils.

In the case of a solid sample, transfer the sample prepared in accordance with ISO 661 to a suitable container and place it in the water bath (6.5), controlled at the temperature at which the measurements are to be made. Allow sufficient time for the temperature of the sample to stabilize.