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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Animal and vegetable fats and oils — Determination of 1-monoglycerides and free glycerol contents

Corps gras d'origines animale et végétale — Dosage des mono-1 glycérides et du glycérol libre

Reference number
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Foreword

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International Standard ISO 7366 was prepared by Technical Committee ISO/TC 34, *Agricultural food products.*

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Animal and vegetable fats and oils — Determination of 1-monoglycerides and free glycerol contents

1 Scope

This International Standard specifies a method for the determination of 1-monoglycerides content and of free glycerol content consecutively on the same test portion.

2 Field of application

It is applicable to animal and vegetable fats and oils and to interesterified products of oils, fats and fatty acids with glycerol.

It is not applicable when the sample contains

a) in addition to 1-monoglycerides : chloroform-soluble polyhydric substances with two or more adjacent hydroxyl groups;

b) in addition to free glycerol : water-soluble polyhydric substances with two or more adjacent hydroxyl groups.

3 Reference

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

4 Principle

Dissolution of a test portion in chloroform. Extraction of free glycerol from this solution with acetic acid solution. Oxidation of 1-monoglycerides in the chloroform solution by an excess of periodic acid solution. Addition of potassium iodide and titration of the liberated iodine with a sodium thiosulfate standard volumetric solution.

Oxidation of free glycerol in the aqueous solution by an excess of periodic acid solution. Addition of potassium iodide and titration of the liberated iodine with a sodium thiosulfate standard volumetric solution.

5 Reagents

All reagents shall be of recognized analytical grade. The water used shall be distilled water or water of at least equivalent purity.

5.1 Chloroform.

5.2 Acetic acid, 5 % (*V*/*V*) solution.

5.3 Periodic acid, 2,7 g/l solution.

Weigh 2,7 g of periodic acid (H_5IO_6) in a 1 litre volumetric flask and dissolve in 50 ml of water. Make up to the mark with glacial acetic acid and mix thoroughly. Store in the dark.

5.4 Potassium iodide, 150 g/l solution, not containing free iodine or iodates.

5.5 Sodium thiosulfate, standard volumetric solution, $c(Na_2S_2O_3)$ = 0,1 mol/l.

5.6 Starch, indicator solution, 10 g/l.

Dissolve 1 g of soluble starch in 100 ml of water by stirring and heating. Add 0,1 g of salicylic acid to preserve the indicator solution and boil for 3 min. Cool to room temperature.

6 Apparatus

Usual laboratory equipment and in particular

6.1 Conical flasks, of capacity 500 ml, with ground-glass stoppers.

6.2 Magnetic stirrer.

7 Sampling

See ISO 5555.

8 Procedure

8.1 Preparation of the test sample

8.1.1 Solid samples in flake or in powder form

Mix the sample thoroughly without melting.