
International Standard 6656

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Animal and vegetable fats and oils — Determination of polyethylene-type polymers

Corps gras d'origines animale et végétale — Dosage des polymères de type polyéthylène

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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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6656 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Animal and vegetable fats and oils — Determination of polyethylene-type polymers

0 Introduction

The presence of polyethylene-type polymers, which originate from packaging materials, may cause serious difficulties in the processing of fats, as they may lead to deposits and blockages in pipes, valves, etc., and in the manufacture of soap, to the appearance of fibre marbling and undesirable specks.

1 Scope and field of application

This International Standard specifies the reference method for the determination of polyethylene-type polymers in animal and vegetable fats and oils.

It has been established that, below 50 mg of polymers per kilogram, the precision of the method is insufficient (see the results for tallow 1 in 9.2).

NOTE — This method is used for animal fats and oils in particular.

2 Reference

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

3 Definition

For the purpose of this International Standard, the following definition applies.

polyethylene-type polymers : Impurities which are soluble in boiling tetrachloroethylene, such as polyethylenes which originate from packaging materials.

4 Principle

After acid treatment to decompose any soaps present, dissolution of a test portion in chloroform (which leaves polyethylene-type polymers in suspension) and filtration through a sintered filter crucible containing a mat of filter aid. Washing the crucible and its contents, drying and weighing. Extraction of polyethylene-type polymers from the insoluble matter by boiling tetrachloroethylene. Drying the crucible with its contents and weighing again.

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 Methanol, containing not more than 0,5 % (*m/m*) of water.

5.2 Acetone.

5.3 Chloroform.

5.4 Tetrachloroethylene.

5.5 Hydrochloric acid, ethanolic solution.

Mix 1 volume of hydrochloric acid ($\rho_{20} = 1,19$ g/ml) with 9 volumes of 95 % (*V/V*) ethanol.

5.6 Diatomaceous earth-type filter aid, acid-washed.

6 Apparatus

WARNING — Plastics apparatus is likely to be affected by solvents (particularly chloroform or tetrachloroethylene). Care shall be taken to ensure that the solvents used do not come into contact with plastics.

Usual laboratory equipment, and in particular

6.1 Beakers, of capacity 1 000 ml.

6.2 Filter flasks, of capacities 250 and 1 000 ml.

6.3 Sintered filter crucibles, of porosity grade P 40 (16 to 40 μm).

6.4 Desiccator.

6.5 Magnetic stirrer, with heater.