
INTERNATIONAL STANDARD



5554

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Meat products — Determination of starch content (Reference method)

Produits à base de viande — Détermination de la teneur en amidon (Méthode de référence)

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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 5554 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in September 1976.

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

Australia	Germany	Portugal
Austria	India	Romania
Bulgaria	Ireland	South Africa, Rep. of
Chile	Korea, Rep. of	Spain
Czechoslovakia	Netherlands	United Kingdom
Egypt, Arab Rep. of	New Zealand	U.S.S.R.
France	Poland	Yugoslavia

No member body expressed disapproval of the document.

Meat products — Determination of starch content (Reference method)

1 SCOPE

This International Standard specifies a reference method for the determination of the starch content of meat products.

2 FIELD OF APPLICATION

This International Standard applies only to products which do not contain added substances, other than starch, that yield reducing sugars on hydrolysis.

3 REFERENCE

ISO 3100, *Meat and meat products — Sampling*.

4 DEFINITION

starch content of meat products: The starch content determined according to the procedure described in this International Standard and expressed as a percentage by mass.

5 PRINCIPLE

Heating of a test portion with ethanolic potassium hydroxide solution until the meat components are totally dissolved. Decantation, washing of the remaining residue with hot ethanol, filtering, dissolution in hydrochloric acid, and hydrolysis. Titrimetric determination of the glucose formed.

6 REAGENTS

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

6.1 Potassium hydroxide, ethanolic solution.

Dissolve 50 g of potassium hydroxide in 800 ml of 95 % (V/V) ethanol and dilute to 1 000 ml with the same ethanol.

6.2 Ethanol, 80 % (V/V).

6.3 Hydrochloric acid, 1,0 M solution (chlorine-free).

6.4 Bromothymol blue, 10 g/l solution in 95 % (V/V) ethanol.

6.5 Sodium hydroxide, 300 g/l solution.

6.6 Solutions for precipitation of proteins.

Solution I

Dissolve 106 g of potassium hexacyanoferrate(II) trihydrate $[\text{K}_4\text{Fe}(\text{CN})_6 \cdot 3\text{H}_2\text{O}]$ in water in a 1 000 ml one-mark volumetric flask and dilute to the mark.

Solution II

Dissolve 220 g of zinc acetate dihydrate $[\text{Zn}(\text{CH}_3\text{COO})_2 \cdot 2\text{H}_2\text{O}]$ in water in a 1 000 ml one-mark volumetric flask. Add 30 ml of glacial acetic acid, and dilute to the mark with water.

6.7 Copper reagent

Prepare the following solutions :

a) 25 g of copper(II) sulphate pentahydrate $(\text{CuSO}_4 \cdot 5\text{H}_2\text{O})$ in 100 ml of water;

b) 144 g of sodium carbonate (Na_2CO_3) in 300 to 400 ml of water at 50 °C;

c) 50 g of citric acid monohydrate $(\text{C}_6\text{H}_8\text{O}_7 \cdot \text{H}_2\text{O})$ in 50 ml of water.

Add solution c) slowly and carefully, stirring continuously, to solution b). Continue stirring until evolution of carbon dioxide ceases.

Add solution a) to this mixture, stirring continuously.

Allow to cool to room temperature, transfer quantitatively to a 1 000 ml one-mark volumetric flask, dilute to the mark and filter after 24 h.

The pH of the solution, after 1 + 49 dilution with freshly boiled and cooled water, should be $10,0 \pm 0,1$.

6.8 Starch indicator solution.

Add a mixture of 10 g of soluble starch, 10 mg of mercury(II) iodide (as a preservative) and 30 ml of water to 1 litre of boiling water. Continue boiling for 3 min and cool.