
INTERNATIONAL STANDARD



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Meat and meat products — Determination of total phosphorus content (Reference method)

Viandes et produits à base de viande — Détermination de la teneur en phosphore (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 2294 was drawn up by Technical Committee ISO/TC 34, *Agricultural food products*, and circulated to the Member Bodies in April 1971.

It has been approved by the Member Bodies of the following countries:

Austria	France	Poland
Belgium	Germany	Portugal
Brazil	Hungary	South Africa, Rep. of
Bulgaria	India	Spain
Chile	Ireland	Thailand
Czechoslovakia	Israel	Turkey
Denmark	Netherlands	United Kingdom
Egypt, Arab Rep. of	New Zealand	

This International Standard has also been approved by the Association of Official Analytical Chemists (AOAC).

No Member Body expressed disapproval of the document.

Meat and meat products — Determination of total phosphorus content (Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the total phosphorus content of meat and meat products.

2 REFERENCES

ISO/R 936, *Meat and meat products — Determination of ash*.

ISO 3100, *Meat and meat products — Sampling*.¹⁾

3 DEFINITION

total phosphorus content of meat and meat products: The phosphorus content determined by the procedure described, and expressed as a percentage by mass of phosphorus pentoxide.

4 PRINCIPLE

Mineralization of a test portion with sulphuric and nitric acids. Precipitation of the phosphorus as quinoline phosphomolybdate. Drying and weighing of the precipitate.

An alternative method of mineralization is described in clause 10.

5 REAGENTS

All reagents shall be of recognized analytical reagent quality. Distilled water or water of equivalent purity shall be used in the test.

5.1 Sulphuric acid, ρ_{20} 1,84 g/ml.

5.2 Nitric acid, ρ_{20} 1,40 g/ml.

5.3 Precipitating reagent

5.3.1 Dissolve 70 g of sodium molybdate dihydrate ($\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$) in 150 ml of water.

5.3.2 Dissolve 60 g of citric acid monohydrate [$\text{CH}_2(\text{CO}_2\text{H})\text{COH}(\text{CO}_2\text{H})\text{CH}_2(\text{CO}_2\text{H}) \cdot \text{H}_2\text{O}$] in 150 ml of water and add 85 ml of nitric acid (5.2).

5.3.3 Gradually add solution 5.3.1 to solution 5.3.2, while stirring.

5.3.4 To 100 ml of water add successively 35 ml of nitric acid (5.2) and 5 ml of distilled quinoline.

Gradually add this solution to the mixture 5.3.3, while stirring. Leave for 24 h at room temperature.

Filter, add 280 ml of acetone and dilute to 1 000 ml with water.

Store the reagent in a well-stoppered plastics bottle in the dark.

6 APPARATUS

Usual laboratory equipment not otherwise specified, and

6.1 Mechanical meat mincer, laboratory size, fitted with a plate with holes of diameter not exceeding 4 mm.

6.2 Analytical balance.

6.3 Kjeldahl flask, 250 ml capacity, or a long-necked round-bottom flask.

6.4 Heating device, on which the flask (6.3) can be heated in an inclined position in such a way that the source of heat only touches the part of the wall of the flask which is below the level of the liquid. For heating by gas, a suitable device is a plate of asbestos provided with a circular hole, such that only the lower part of the flask is exposed to the flame.

6.5 Suction device, to remove the acid fumes evolved during the digestion.

6.6 Fritted glass filter, pore diameter 5 to 15 μm (P. 16).

1) At present at the stage of draft.