

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 848

PHOSPHORIC ACID FOR INDUSTRIAL USE

DETERMINATION OF CALCIUM CONTENT

VOLUMETRIC METHOD

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 848, *Phosphoric acid for industrial use – Determination of calcium content – Volumetric method*, was drawn up by Technical Committee ISO/TC 47, *Chemistry*, the Secretariat of which is held by the Ente Nazionale Italiano di Unificazione (UNI).

Work on this question by the Technical Committee began in 1960 and led, in 1966, to the adoption of a Draft ISO Recommendation.

In December 1966, this Draft ISO Recommendation (No. 1109) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	Israel	Spain
Belgium	Italy	Switzerland
Brazil	Japan	Thailand
Bulgaria	Korea, Dem. P. R. of	Turkey
Chile	Korea, Rep. of	U.A.R.
Czechoslovakia	Netherlands	United Kingdom
France	New Zealand	U.S.S.R.
Germany	Poland	Yugoslavia
Hungary	Romania	
India	South Africa, Rep. of	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in October 1968, to accept it as an ISO RECOMMENDATION.

PHOSPHORIC ACID FOR INDUSTRIAL USE

DETERMINATION OF CALCIUM CONTENT

VOLUMETRIC METHOD

1. SCOPE

This ISO Recommendation describes a volumetric method for the determination of the calcium content in phosphoric acid for industrial use.

2. FIELD OF APPLICATION

The general method is applicable to the determination of the calcium content in phosphoric acid for industrial use.

2.1 Special case

Phosphoric acid for industrial use containing polyphosphoric acids (see section 8).

NOTE. — In case there is no certainty of absence of polyphosphoric acids, carry out the determination according to the procedure of the special case directly.

3. PRINCIPLE

Precipitation of calcium as calcium oxalate at $\text{pH } 4 \pm 0.3$.

Filtration of the precipitate and purification by dissolving in hydrochloric acid and re-precipitation under the same operating conditions.

Oxidimetric titration in sulphuric acid solution by means of potassium permanganate.

4. REAGENTS

Distilled water or water of equivalent purity should be used in the test.

- 4.1 *Sulphuric acid*, approximately $d = 1.84$, 96 % (m/m) or 36 N solution.
- 4.2 *Hydrochloric acid*, approximately $d = 1.19$, 37 % (m/m) or 12 N solution.
- 4.3 *Ammonium hydroxide*, approximately $d = 0.91$, 25 % (m/m) or 15 N solution.
- 4.4 *Ammonium chloride*, saturated solution at room temperature (approximately 300 g/l).
- 4.5 *Ammonium oxalate*, 40 g/l solution.
Dissolve 4 g of ammonium oxalate monohydrate in water and dilute to 100 ml.
- 4.6 *Potassium permanganate*, 0.1 N standard volumetric solution (see Note, section 7).