

**ISO**

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

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**ISO RECOMMENDATION**  
**R 1980**

NITRIC ACID FOR INDUSTRIAL USE

DETERMINATION OF TOTAL ACIDITY

VOLUMETRIC METHOD

1st EDITION

May 1971

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## BRIEF HISTORY

The ISO Recommendation R 1980, *Nitric acid for industrial use – Determination of total acidity – 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 led to the adoption of Draft ISO Recommendation No. 1980, which was circulated to all the ISO Member Bodies for enquiry in May 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Iran	Romania
Austria	Ireland	South Africa, Rep. of
Belgium	Israel	Switzerland
Chile	Italy	Thailand
Czechoslovakia	Netherlands	Turkey
France	New Zealand	U.A.R.
Germany	Peru	United Kingdom
Greece	Poland	U.S.A.
India	Portugal	U.S.S.R.

No Member Body opposed the approval of the Draft.

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

ISO Recommendation

R 1980

May 1971

## NITRIC ACID FOR INDUSTRIAL USE

## DETERMINATION OF TOTAL ACIDITY

## VOLUMETRIC METHOD

## 1. SCOPE

This ISO Recommendation describes a volumetric method for the determination of the total acidity of nitric acid for industrial use, conventionally expressed as  $\text{HNO}_3$ .

## 2. PRINCIPLE

Dissolution of a test portion in an excess of a standard volumetric sodium hydroxide solution and back titration with standard volumetric sulphuric acid solution in the presence of an indicator.

## 3. REAGENTS

Distilled water or water of equivalent purity, neutral to the indicator (3.3), should be used in the test.

3.1 *Sodium hydroxide*, N standard volumetric solution.

3.2 *Sulphuric acid*, N standard volumetric solution.

3.3 *Indicator*, having an end point within the pH range between 3.2 and 4.4, for example :

3.3.1 *Methyl orange*, 0.5 g/l solution.

Dissolve 0.05 g of methyl orange in water and dilute to 100 ml.

## 4. APPARATUS

Ordinary laboratory apparatus and

4.1 *Flask, ground glass stoppered*, capacity approximately 500 ml, with neck of about 30 mm diameter.

4.2 *Spherical glass ampoule*, of suitable shape and capacity, for example 20 mm diameter, having one capillary end of about 50 mm length (see, for example, that indicated in the following Figure).

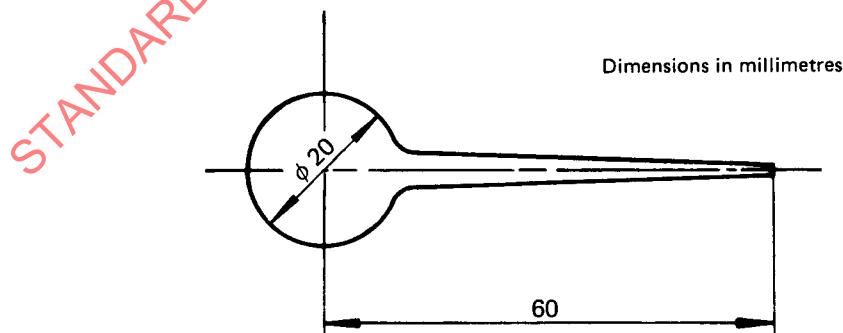


FIGURE – Spherical glass ampoule

4.3 *Conical flask*, capacity 500 ml, with ground glass stopper.