

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 914

SULPHURIC ACID AND OLEUM FOR INDUSTRIAL USE

DETERMINATION OF TOTAL NITROGEN CONTENT

Volumetric method

1st EDITION
December 1968

COPYRIGHT RESERVED

The copyright of ISO Recommendations and ISO Standards belongs to ISO Member Bodies. Reproduction of these documents, in any country, may be authorized therefore only by the national standards organization of that country, being a member of ISO.

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 914, *Sulphuric acid and oleum for industrial use – Determination of total nitrogen 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).

Based on detailed work on this question carried out by the Technical Committee, a Draft ISO Recommendation was adopted in 1965.

In June 1967, this Draft ISO Recommendation (No. 1184) 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	India	South Africa, Rep. of
Belgium	Iran	Spain
Brazil	Ireland	Switzerland
Chile	Italy	Thailand
Cuba	Japan	Turkey
Czechoslovakia	Netherlands	U.A.R.
France	New Zealand	United Kingdom
Germany	Poland	U.S.S.R.
Hungary	Portugal	Yugoslavia
ICAITI *	Romania	

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 December 1968, to accept it as an ISO RECOMMENDATION.

* Instituto Centroamericano de Investigación y Tecnología Industrial (Costa Rica, Guatemala, Honduras, Nicaragua, El Salvador, Panama).

SULPHURIC ACID AND OLEUM FOR INDUSTRIAL USE

DETERMINATION OF TOTAL NITROGEN CONTENT

Volumetric method

1. SCOPE

This ISO Recommendation describes a volumetric method for the determination of total nitrogen content of sulphuric acid and oleum for industrial use.

2. FIELD OF APPLICATION

The method is applicable to the determination of total nitrogen content greater than 0.05 % (m/m) of sulphuric acid and oleum for industrial use.

3. PRINCIPLE

Conversion of the nitrogen present to ammonia by means of nascent hydrogen. Distillation and absorption of ammonia by an excess of sulphuric acid standard volumetric solution and back-titration with a sodium hydroxide standard volumetric solution in the presence of methylened-methylene blue indicator.

4. REAGENTS

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

4.1 *Devarda alloy* (45 % Al – 50 % Cu – 5 % Zn), particle size 0.2 to 0.3 mm.

4.2 *Sodium hydroxide*, 250 g/l solution.

4.3 *Potassium permanganate*, 10 g/l solution.

Dissolve 1 g of potassium permanganate in water and dilute to 100 ml.

4.4 *Sulphuric acid*, 0.1 N standard volumetric solution (see Note, section 7).

4.5 *Sodium hydroxide*, 0.1 N standard volumetric solution (see Note, section 7).