
INTERNATIONAL STANDARD 3693

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Nitric acid for industrial use — Determination of chloride ions content — Potentiometric method

Acide nitrique à usage industriel — Dosage des ions chlorure — Méthode potentiométrique

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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 3693 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in January 1975.

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

Austria	Israel	South Africa, Rep. of
Belgium	Italy	Spain
Brazil	Netherlands	Switzerland
Bulgaria	New Zealand	Turkey
France	Poland	United Kingdom
Germany	Portugal	U.S.S.R.
Ireland	Romania	Yugoslavia

No member body expressed disapproval of the document.

Nitric acid for industrial use – Determination of chloride ions content – Potentiometric method

1 SCOPE

This International Standard specifies a potentiometric method for the determination of the chloride ions content of nitric acid for industrial use.

2 FIELD OF APPLICATION

The method is applicable to products having chloride ions contents, expressed as chloride (Cl^-), equal to or greater than 0,000 2 % (*m/m*).

3 PRINCIPLE

Potentiometric titration of the chloride ions with silver nitrate solution in a nitric acid-acetone-water medium, using a silver measurement electrode and a calomel reference electrode.

4 REAGENTS

During the analysis, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

4.1 Acetone.

4.2 Nitric acid, ρ approximately 1,40 g/ml, about 68 % (*m/m*) solution.

4.3 Silver nitrate, approximately 0,1 N solution.

Dissolve 8,5 g of silver nitrate in water in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Store this solution in a brown glass bottle.

4.4 Silver nitrate, approximately 0,01 N solution.

Take 50 ml of the silver nitrate solution (4.3), place in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution at the time of use.

4.5 Silver nitrate, approximately 0,004 N solution.

Take 20 ml of the silver nitrate solution (4.3), place in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution at the time of use.

4.6 Silver nitrate, approximately 0,001 N solution.

Take 5 ml of the silver nitrate solution (4.3), place in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution at the time of use.

4.7 Potassium chloride, 0,1 N standard reference solution.

Weigh, to the nearest 0,000 1 g, 3,727 6 g of potassium chloride, previously dried for 1 h at about 130 °C and cooled in a desiccator. Dissolve in a little water, transfer the solution quantitatively to a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution fresh.

4.8 Potassium chloride, 0,01 N standard reference solution.

Take 50,0 ml of the standard reference potassium chloride solution (4.7), place in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution fresh.

4.9 Potassium chloride, 0,004 N standard reference solution.

Take 20,0 ml of the standard reference potassium chloride solution (4.7), place in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution at the time of use.

4.10 Potassium chloride, 0,001 N standard reference solution.

Take 5,0 ml of the standard reference potassium chloride solution (4.7), place in a 500 ml one-mark volumetric flask, dilute to the mark and mix.

Prepare this solution the at time of use.