
INTERNATIONAL STANDARD



1784

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Aluminium alloys — Determination of zinc — EDTA titrimetric method

Alliages d'aluminium — Dosage du zinc — Méthode titrimétrique à l'EDTA

First edition — 1976-06-01

Sample Document

get full document from standards.iteh.ai

UDC 669.71 : 546.47 : 543.24

Ref. No. ISO 1784-1976 (E)

Descriptors : aluminium alloys, aluminium, chemical analysis, determination of content, zinc, volumetric analysis.

Price based on 3 pages

ISO 1784:1976 • <https://standards.iteh.ai/catalog/standards/iso/a1c8a701-12e9-4fd8-a656-1074401b1eb4/iso-1784-1976>

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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 79 has reviewed ISO Recommendation R 1784 and found it technically suitable for transformation. International Standard ISO 1784 therefore replaces ISO Recommendation R 1784-1970 to which it is technically identical.

ISO Recommendation R 1784 was approved by the Member Bodies of the following countries :

Australia	Israel	South Africa, Rep of
Belgium	Italy	Spain
Czechoslovakia	Japan	Sweden
Egypt, Arab Rep. of	Korea, Rep. of	Switzerland
Germany	Netherlands	Thailand
Greece	New Zealand	Turkey
Hungary	Norway	United Kingdom
India	Peru	U.S.A.
Iran	Poland	

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Canada
France

No Member Body disapproved the transformation of ISO/R 1784 into an International Standard.

Aluminium alloys — Determination of zinc — EDTA titrimetric method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies an EDTA titrimetric method for the determination of zinc in aluminium alloys not containing cadmium.

This method is applicable to products having a zinc content between 0,10 and 12 % (*m/m*).

2 PRINCIPLE

Hydrochloric acid attack and elimination of the excess of acid by evaporation. Taking up of the residue in 2 N hydrochloric acid solution and passage of the solution through a strongly basic anion exchange resin.

Elution of the zinc absorbed on the resin with 0,005 N hydrochloric acid solution.

Titration of the zinc by standard volumetric disodium EDTA solution using dithizone as indicator.

3 REAGENTS

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

3.1 Strongly basic anion exchange resin, either heteroporous or isoporous, of the polystyrene type with quaternary ammonium groups (for example Dowex 1 × 2, De-Acidite FF SRA 62 or equivalent) in the chloride form, containing from 2 to 3 % cross linking (expressed as a percentage by mass of DVB (divinylbenzene) and preferably with a particle size between 150 and 295 μm (−52 + 100 mesh).

3.2 Acetone, ρ approximately 0,79 g/ml.

3.3 Hydrochloric acid, ρ approximately 1,10 g/ml, solution approximately 6 N.

Dilute 515 ml of hydrochloric acid, ρ approximately 1,18 g/ml, approximately 12 N, with water and make up the volume to 1 000 ml.

3.4 Hydrochloric acid, ρ approximately 1,03 g/ml, solution approximately 2 N.

Dilute 170 ml of hydrochloric acid, ρ approximately 1,18 g/ml, approximately 12 N, with water and make up the volume to 1 000 ml.

3.5 Hydrochloric acid, ρ approximately 1,01 g/ml, solution approximately 1 N.

Dilute 85 ml of hydrochloric acid, ρ approximately 1,18 g/ml, approximately 12 N, with water and make up the volume to 1 000 ml.

3.6 Hydrochloric acid, solution approximately 0,005 N.

Dilute 5 ml of hydrochloric acid (3.5) with water and make up the volume to 1 000 ml.

3.7 Nitric acid, ρ approximately 1,4 g/ml, solution approximately 67 % (*m/m*) or 15 N.

3.8 Hydrogen peroxide, ρ approximately 1,135 g/ml, solution approximately 36 % (*m/m*).

3.9 Ammonium hydroxide solution, ρ approximately 0,90 g/ml, solution approximately 28 % (*m/m*) or 14 N.

3.10 Acetic acid, ρ approximately 1,007 g/ml, solution approximately 1 N.

Dilute 58 ml of glacial acetic acid, ρ approximately 1,05 g/ml, solution approximately 17,4 N, with water and make up the volume to 1 000 ml.

3.11 Ammonium acetate solution, 500 g/l.

Dissolve 50 g of ammonium acetate ($\text{CH}_3\text{COONH}_4$) in water and make up the volume to 100 ml.

3.12 Zinc, standard solution containing 2 g of zinc per litre.

Weigh, to the nearest 0,001 g, 2,00 g of extra pure zinc and dissolve in 50 ml of hydrochloric acid solution (3.3) diluted with approximately 50 ml of water. Dilute and transfer the solution quantitatively to a 1 000 ml volumetric flask. Make up to volume and mix.

1 ml of this solution contains 2 mg of zinc.

3.13 (Ethylenedinitrilo)tetraacetic acid (EDTA), disodium salt, 0,02 M standard volumetric solution.

3.13.1 Preparation

Dissolve approximately 7,5 g of disodium EDTA, dihydrate, in water, filter if necessary, and make up the volume to 1 000 ml. Keep in a plastics bottle.