International Standard ISO 7692

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Ferrotitanium — Determination of titanium content — Titrimetric method

Ferro-titane — Dosage du titane — Méthode titrimétrique

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Foreword

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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 7692 was developed by Technical Committee ISO/TC 132, *Ferroalloys*, and was circulated to the member bodies in May 1982.

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

Austria	India	Poland
Brazil	Iran	Romania
Canada	Italy	South Africa, Rep. of
China	Japan	Spain
Czechoslovakia	Korea, Rep. of	Sweden
Egypt, Arab Rep. of	Mexico	United Kingdom
France	Norway	USSR

The member body of the following country expressed disapproval of the document on technical grounds :

Australia

Ferrotitanium — Determination of titanium content — Titrimetric method

1 Scope and field of application

This International Standard specifies a titrimetric method for the determination of the titanium content of ferrotitanium.

The method is applicable to ferrotitanium having titanium contents between 20 and 80 % (*m/m*).

2 Reference

ISO 3713, *Ferroalloys — Sampling and preparation of samples — General rules.*[1)]

3 Principle

Dissolution of a test portion using sulphuric, hydrofluoric, nitric and hydrochloric acids.

Separation of the interfering elements (chromium, vanadium, molybdenum and tin), if present, by precipitation of titanium hydroxide in the presence of hydrogen peroxide.

Reduction of the titanium to Ti^{3+} by aluminium metal in an atmosphere of carbon dioxide or nitrogen.

Titration of the Ti^{3+} with standard volumetric iron(III) ammonium sulphate solution in the presence of thiocyanate as indicator.

4 Reagents

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

4.1 Aluminium, of minimum purity 99,5 %, in the form of foil 0,05 mm thick, and free from titanium.

4.2 Sodium hydrogen carbonate ($NaHCO_3$).

4.3 Nitric acid, ϱ 1,42 g/ml.

4.4 Sulphuric acid, ϱ 1,84 g/ml.

4.5 Hydrochloric acid, ϱ 1,19 g/ml.

4.6 Hydrofluoric acid, ϱ 1,14 g/ml.

4.7 Sulphuric acid, diluted (1 + 1).

Add carefully 1 volume of the sulphuric acid (4.4) to 1 volume of water. Cool while mixing.

4.8 Sulphuric acid, diluted (1 + 4).

Add carefully 1 volume of the sulphuric acid (4.4) to 4 volumes of water. Cool while mixing.

4.9 Sodium hydroxide, 100 g/l solution.

4.10 Sodium hydroxide, 20 g/l solution.

4.11 Ammonium thiocyanate, 100 g/l solution.

4.12 Nitrogen, practically oxygen-free (less than 10 ppm by volume), 99,998 % pure, or **carbon dioxide** of similar purity.

4.13 Hydrogen peroxide, 30 % or 100 volume solution.

1) At present at the stage of draft.