

**Teras ja raud. Titaanisisalduse
määramine. Diantipürüülmetaan-
spektrofotomeetriline meetod**

Steel and iron - Determination of titanium content -
Diantipyrylmethane spectrophotometric method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10280:2000 sisaldab Euroopa standardi EN ISO 10280:1995 ingliskeelset teksti.

Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 10280:2000 consists of the English text of the European standard EN ISO 10280:1995.

This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

Käsitlusala:

Standard esitab diantipürüülmetaan-spektrofotomeetrilise meetodi titaanisalduse määramiseks terases ja rauas. Meetodit saab rakendada, kui titaanisaldus on vahemikus 0,002 kuni 0,80 massiprotsenti.

Scope:

ICS 77.080.01

Võtmesõnad: keemiline analüüs, leekaatomiabsorptsioon-spektromeetriline meetod, malm, raud, sisalduse määramine, terased, titaan

ICS 77.120.50

Descriptors: Steel, iron, titanium content, analysis.

English version

Steel and iron

Determination of titanium content

Diantipyrylmethane spectrophotometric method

(ISO 10280:1991)

Aciers et fontes; dosage du titane;
méthode spectrophotométrique au
diantipyrylméthane (ISO 10280:1991)

Stahl und Eisen; Bestimmung von Titan;
spektralphotometrisches Verfahren mit
Diantipyrylmethan (ISO 10280:1991)

This European Standard was approved by CEN on 1995-08-06 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 10280:1991 Steel and iron; determination of titanium content; diantipyrylmethane spectrophotometric method, which was prepared by ISO/TC 17 'Steel' of the International Organization for Standardization, has been adopted by Technical Committee EC/SS/TC 20 'Methods of chemical analysis' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by March 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 10280:1991 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

1 Scope

This International Standard specifies a diantipyrylmethane spectrophotometric method for the determination of titanium in steel and iron.

The method is applicable to titanium contents between 0,002 % (*m/m*) and 0,80 % (*m/m*).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 377-2:1989, *Selection and preparation of samples and test pieces of wrought steels — Part 2: Samples for the determination of the chemical composition*.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements*.

ISO 648:1977, *Laboratory glassware — One-mark pipettes*.

ISO 1042:1983, *Laboratory glassware — One-mark volumetric flasks*.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*.

ISO 5725:1986, *Precision of test methods — Determination of repeatability and reproducibility for a standard test method by inter-laboratory tests*.

3 Principle

Dissolution of a test portion in hydrochloric, nitric and sulfuric acids.

Fusion of the residue with potassium hydrogen sulfate.

Formation of a yellow complex with 4,4'-diantipyrylmethane.

Spectrophotometric measurement of the coloured complex at a wavelength of about 385 nm.

4 Reagents

During the analysis, unless otherwise stated, use only reagents of recognized analytical grade and only grade 2 water as specified in ISO 3696.

4.1 Iron, of high purity containing less than 2 µg Ti/g.

4.2 Potassium hydrogen sulfate (KHSO₄).

4.3 Sodium carbonate (Na₂CO₃), anhydrous.

4.4 Hydrochloric acid, ρ about 1,19 g/ml.

4.5 Nitric acid, ρ about 1,40 g/ml.

4.6 Hydrofluoric acid, ρ about 1,15 g/ml.

4.7 Hydrochloric acid, ρ about 1,19 g/ml, diluted 1 + 1.

4.8 Hydrochloric acid, ρ about 1,19 g/ml, diluted 1 + 3.

4.9 Sulfuric acid, ρ about 1,84 g/ml, diluted 1 + 1.

4.10 Tartaric acid solution, 100 g/l.