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**Titanium and titanium alloys —  
Determination of iron — Atomic  
absorption spectrometry**

*Titane et alliages de titane — Dosage du fer — Spectrométrie  
d'absorption atomique*



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Case postale 56 • CH-1211 Geneva 20  
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Published in Switzerland

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22961 was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 11, *Titanium*.

# Titanium and titanium alloys — Determination of iron — Atomic absorption spectrometry

## 1 Scope

This International Standard specifies an atomic absorption spectrometric method for the determination of the mass fraction of iron in titanium and titanium alloys.

The method is applicable to titanium and titanium alloys with a mass fraction of iron in the range from 0,005 % to 2,0 %.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 384:1978, *Laboratory glassware — Principles of design and construction of volumetric glassware*

ISO 648:—<sup>1)</sup>, *Laboratory glassware — Single volume pipettes*

ISO 1042:1998, *Laboratory glassware — One-mark volumetric flasks*

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

ISO 4787:1984, *Laboratory glassware — Volumetric glassware — Methods for use and testing of capacity*

## 3 Principle

Dissolve the test portion in hydrochloric acid and hydrofluoric acid. Add nitric acid to oxidize titanium, iron and other elements. Then add boric acid, determine the iron concentration in the test portion using an atomic absorption spectrometer.

## 4 Reagents

### 4.1 General

During the analysis, use only reagents of recognized analytical grade and water that complies with grade 2 of ISO 3696.

1) To be published. (Revision of ISO 648:1977)