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**Jeklo - Določevanje vanadija - Metoda s plamensko atomsko absorpcijsko spektrometrijo (FAAS) (ISO 9647:2020)**

Steel - Determination of vanadium content - Flame atomic absorption spectrometric method (FAAS) (ISO 9647:2020)

Stahl - Bestimmung des Vanadiumgehaltes - Flammen-Atomextinktionsspektrometrisches Verfahren (FAAS) (ISO 9647:2020)

Aciers - Détermination des teneurs en vanadium - Méthode par spectrométrie d'absorption atomique dans la flamme (SAAF) (ISO 9647:2020)

**Ta slovenski standard je istoveten z: EN ISO 9647:2022**

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Steels

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EUROPEAN STANDARD  
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EN ISO 9647

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Steel - Determination of vanadium content - Flame atomic  
absorption spectrometric method (FAAS) (ISO 9647:2020)

Aciers - Détermination des teneurs en vanadium -  
Méthode par spectrométrie d'absorption atomique  
dans la flamme (SAAF) (ISO 9647:2020)

Stahl - Bestimmung des Vanadiumgehaltes - Flammen-  
Atomextinktionsspektrometrisches Verfahren (FAAS)  
(ISO 9647:2020)

This European Standard was approved by CEN on 20 March 2022.

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## European foreword

The text of ISO 9647:2020 has been prepared by Technical Committee ISO/TC 17 "Steel" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 9647:2022 by Technical Committee CEN/TC 459/SC 2 "Methods of chemical analysis for iron and steel" the secretariat of which is held by SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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# INTERNATIONAL STANDARD

**ISO  
9647**

Second edition  
2020-02

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## **Steel — Determination of vanadium content — Flame atomic absorption spectrometric method (FAAS)**

*Aciers — Détermination des teneurs en vanadium — Méthode par  
spectrométrie d'absorption atomique dans la flamme (SAAF)*

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## ISO 9647:2020(E)

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 17, Steel, Subcommittee SC 1, *Methods of determination of chemical composition*.

This second edition cancels and replaces the first edition (ISO 9647:1989), which has been technically revised. The main changes compared to the previous edition are as follows:

- a complete revaluation of the precision data;
- amendment of the field of application.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Steel — Determination of vanadium content — Flame atomic absorption spectrometric method (FAAS)

## 1 Scope

This document specifies a flame atomic absorption spectrometric method (FAAS) for the determination of the vanadium content in steel.

The method is applicable to vanadium contents between 0,01 % (mass fraction) and 0,80 % (mass fraction), provided that the tungsten content in a 1,0 g test portion is not higher than 1,0 % and/or the titanium content is not higher than 0,5 %.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 648, *Laboratory glassware — Single-volume pipettes*

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

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

ISO 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition*

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## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 Principle

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

Addition of an aluminium chloride solution as spectrochemical buffer.

Nebulisation of the test solution into an acetylene/nitrous oxide flame of an atomic absorption spectrometer.

Spectrometric measurement of the atomic absorption of the 318,4 nm spectral line emitted by a vanadium hollow-cathode lamp.

NOTE Other suitable radiation sources can also be used.