

SLOVENSKI STANDARD
oSIST prEN 10181:2018
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Jeklo - Določevanje svinca - Plamenska atomska absorpcijska spektrometrična metoda (FAAS)

Steels - Determination of lead content - Flame atomic absorption spectrometric method (FAAS)

Stahl - Bestimmung des Bleianteils - Flammenatomabsorptionsspektrometrisches Verfahren (FAAS)

Aciers - Détermination de la teneur en plomb - Méthode par spectrométrie d'absorption atomique dans la flamme (SAAF)

Ta slovenski standard je istoveten z: prEN 10181

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ICS:

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EUROPEAN STANDARD
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prEN 10181

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Will supersede EN 10181:1989

English Version

**Steels - Determination of lead content - Flame atomic
absorption spectrometric method (FAAS)**

Aciers - Détermination de la teneur en plomb -
Méthode par spectrométrie d'absorption atomique
dans la flamme (SAAF)

Stahl - Bestimmung des Bleianteils -
Flammenatomabsorptionsspektrometrisches
Verfahren (FAAS)

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ECIS/TC 102.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 10181:2018) has been prepared by Technical Committee ECISS/TC 102 “Methods of chemical analysis for iron and steel”, the secretariat of which is held by SIS.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 10181:1989.

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prEN 10181:2018 (E)**1 Scope**

This document specifies a flame atomic absorption spectrometric method (FAAS) for the determination of lead content in non-alloy and low alloy steels.

The method is applicable to lead contents between 0,005 % and 0,5 %.

The method can be adapted to lower or higher lead contents by changing the test portion or the dilution process, provided the criteria in 6.2.2 and 6.2.3 are still met.

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.

EN ISO 648, *Laboratory glassware - Single-volume pipettes (ISO 648)*

EN ISO 1042, *Laboratory glassware - One-mark volumetric flasks (ISO 1042)*

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:

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

4 Principle

Dissolution of a test portion in hydrochloric acid followed by oxidation with nitric acid.

NOTE 1 Aqua regia can be used for simultaneous dissolution and oxidation of the test portion.

Nebulization of the test solution into an air/acetylene flame of an atomic absorption spectrometer.

Spectrometric measurement of the atomic absorption of the 283,3 nm spectral line emitted by a lead hollow-cathode lamp.

NOTE 2 Other suitable radiation sources can also be used and measurements can also be carried out at 217,0 nm, provided the criteria in 6.2.2 and 6.2.3 are still met.

5 Reagents

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

The following concentrations and amounts can be modified, provided the changes are taken into account in 8.3 and Clause 9.

5.1 Pure iron, with lead content < 0,001 %.

5.2 Hydrochloric acid solution, 1 + 1.

Add 500 ml of hydrochloric acid ($\rho_{20} = 1,19$ g/ml, approximately) to 500 ml of water and mix.

5.3 Nitric acid solution, 4 + 6.

Add 400 ml of nitric acid ($\rho_{20} = 1,40$ g/ml, approximately) to 600 ml of water and mix.