INTERNATIONAL STANDARD

ISO 11127-7

Third edition
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Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives —

Part 7: Determination of water-soluble chlorides

Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Méthodes d'essai pour abrasifs non métalliques destinés à la préparation par projection —

Partie 7: Détermination des chlorures solubles dans l'eau

Reference number
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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.

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).

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).

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

For an explanation of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 12, *Preparation of steel substrates before application of paints and related products,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 11127-7:2011), which has been technically revised.

The main changes are as follows:

— an Introduction has been added;

— the scope has been expanded to include spectrophotometric and ion chromatographic methods of analysis;

— Clauses 3, 4, 9 and 10 have been added;

— the list of apparatus in Clause 5 has been expanded;

— Clause 8 has been renamed;

— Annex A has been deleted.

A list of all parts in the ISO 11127 series can be found on the ISO website.

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.

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Introduction

Amperometric titration against silver nitrate has been the established method of determining water-soluble chlorides in non-metallic abrasives since the first edition of this document. Subsequently, other methods of analysis offering faster and more sensitive determinations, namely ion chromatography and spectrophotometry, have gained popularity. This document specifies three methods of analysis for water-soluble chlorides.

The spectrophotometric determination of water-soluble chloride relies on the dissociation of mercuric thiocyanate by chloride ions. In the presence of ferric ion, the liberated thiocyanate ion forms the dark red coloured ferric thiocyanate complex in a concentration which is proportional to the original chloride ion concentration. The concentration of the ferric thiocyanate is determined by measuring the absorbance at 450 nm. This method can be used to determine chloride concentrations as low as 0,1 mg/l. Commercially available reagent kits offer determinations in the ranges 0,1 mg/l to 25 mg/l and 1 mg/l to 70 mg/l. Portable spectrophotometers allow the adoption of this method as field method of determination of water-soluble chloride. This method has also been adapted for flow injection analysis.

The determination of chloride by ion chromatograph separates the chloride from other water-soluble anions by liquid chromatography, applying an anion exchange resin as stationary phase, and aqueous solutions of carbonate, hydrogencarbonate, hydroxide as eluent. The detection is carried out using a conductivity detector (CD). This method permits the determination of both chloride and sulfate at the same time. The determination can be used for chloride concentrations down to 0,1 mg/l.

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Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives —

Part 7: Determination of water-soluble chlorides

1 Scope

This document specifies three methods for the determination of water-soluble chlorides in non-metallic blast-cleaning abrasives, namely, amperometric titration, spectro-photometry and ion chromatography.

This document is part of the ISO 11127 series dealing with the sampling and testing of non-metallic abrasives for blast-cleaning.

The types of non-metallic abrasive and requirements on each are contained in the ISO 11126 series.

The ISO 11126 series and the ISO 11127 series have been drafted as a coherent set of International Standards on non-metallic blast-cleaning abrasives.

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

ISO 11127-1, *Preparation of steel substrates before application of paints and related products — Test methods for non-metallic blast-cleaning abrasives — Part 1: Sampling*

ISO 10304-1, *Water quality — Determination of dissolved anions by liquid chromatography of ions — Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
cuvette
absorption cell

3.2
eluent
liquid phase used to achieve separation and transport of analytes

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