

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



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Foreword

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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).

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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.