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Nickel alloys — Determination of lead — Electrothermal atomic absorption spectrometric method

Alliages de nickel — Détermination du plomb — Méthode par spectrométrie d'absorption atomique électrothermique

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Foreword

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This document was prepared by Technical Committee ISO/TC 155, *Nickel and nickel alloys*.

This first edition cancels and replaces ISO 11437-1:1994 and ISO 11437-2:1994, which have been merged and technically revised.

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Nickel alloys — Determination of lead — Electrothermal atomic absorption spectrometric method

1 Scope

This document specifies an electrothermal atomic absorption spectrometric method for the determination of lead in the range of 1 µg/g to 10 µg/g in nickel alloys.

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*

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 a mixture of nitric acid and hydrofluoric acid, dilution of the test solution to a known volume, and transfer of an aliquot to a plastic vial.

Addition of a modifier to the aliquot of the test solution, and injection of a small volume of this solution into the electrothermal atomizer of an atomic absorption spectrometer.

Measurement of the atomic absorption of the 283,3 nm spectral line energy emitted by a lead hollow-cathode lamp and comparison with those of the calibration solutions.

5 Reagents

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

5.1 **Pure nickel**, containing less than 1 µg/g of lead.

5.2 **Nickel**, base-solution 50 g/l.

Weigh, to the nearest 0,1 g, 25,0 g of pure nickel (5.1). Transfer to a 600 ml tall-form beaker and add 100 ml of water. Cautiously add 100 ml of nitric acid (ρ_{20} = 1,41 g/ml) in small portions, in such a manner that the dissolution remains under control. Cool the solution and transfer it to a 500 ml one-mark volumetric flask. Make up to the mark with water and mix.

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