

INTERNATIONAL STANDARD

ISO
11437-1

First edition
1994-12-01

Nickel alloys — Determination of trace-element content by electrothermal atomic absorption spectrometric method —

Part 1:

General requirements and sample dissolution

*Alliages de nickel — Dosage des éléments-traces — Méthode par
spectrométrie d'absorption atomique à excitation électrothermique —
Partie 1: Caractéristiques générales et mise en solution de l'échantillon*



Reference number
ISO 11437-1:1994(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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11437-1 was prepared by Technical Committee ISO/TC 155, *Nickel and nickel alloys*, Subcommittee SC 4, *Analysis of nickel alloys*.

ISO 11437 consists of the following parts, under the general title *Nickel alloys — Determination of trace-element content by electrothermal atomic absorption spectrometric method*:

- Part 1: General requirements and sample dissolution
- Part 2: Determination of lead content
- Part 3: Determination of bismuth content
- Part 4: Determination of silver content

Annex A forms an integral part of this part of ISO 11437. Annex B is for information only.

This document is a preview generated by EVS

Introduction

This part of ISO 11437 is to be used in conjunction with the other parts which specify methods for the determination of individual trace elements in nickel alloys by electrothermal atomic absorption spectrometry.

Although the analytical methods are specified in independent International Standards, it is possible to determine more than one element on a single test solution.

This document is a preview generated by EVS

This page intentionally left blank

Nickel alloys — Determination of trace-element content by electrothermal atomic absorption spectrometric method —

Part 1:

General requirements and sample dissolution

1 Scope

1.1 ISO 11437 specifies electrothermal atomic absorption methods for the determination of trace elements in nickel alloys, in the concentration ranges given in clause 1 of other parts of ISO 11437. Other elements may be added in subsequent parts of ISO 11437. Typical compositions of some nickel alloys are given in annex B.

1.2 This part of ISO 11437 specifies the general requirements for analysis by electrothermal atomic absorption spectrometry, preparation and dissolution of the test sample, method of calculation and the procedures used for the evaluation of the repeatability and reproducibility of the individual methods specified in other parts of ISO 11437.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11437. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 11437 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

ISO 648:1977, *Laboratory glassware — One-mark pipettes.*

ISO 1042:1983, *Laboratory glassware — One-mark volumetric flasks.*

ISO 5725:1986, *Precision of test methods — Determination of repeatability and reproducibility for a standard test method by inter-laboratory tests.*

3 Principle

Dissolution of a test portion in a mixture of dilute nitric acid and hydrofluoric acid.

Dilution of the test solution to a known volume and transfer of an aliquot to a plastics vial.

Addition of a modifier and/or diluent, where necessary, and injection of a small volume of the test solution into an electrothermal atomizer.

Measurement of the absorption of the resonance line energy from the spectrum of the element being determined and comparison with that of calibration solutions containing the same element.

4 Reagents

During the analysis, unless otherwise stated, use only