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Soft solder alloys — Chemical compositions and forms

Alliages de brasage tendre — Compositions chimiques et formes

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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).

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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 44, *Welding and allied processes*, Subcommittee SC 12, *Soldering materials*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 9453:2014), which has been technically revised.

The main changes compared to the previous edition are as follows:

— alloys 303 and 304 have been added to Table 3 and Table A.1;

— Table A.1 has been updated according to IEC 61190-1-3;

— patent information was updated on the relevant ISO web page and Annex B was removed.

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.

Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

Introduction

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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Soft solder alloys — Chemical compositions and forms

1 Scope

This document specifies the requirements for chemical composition for soft solder alloys containing two or more of: tin, lead, antimony, copper, silver, bismuth, zinc, indium and/or cadmium.

An indication of the forms generally available is also included.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

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

3.1
soft solder
metallic filler material which is used to join metallic parts and which has a melting temperature (liquidus) lower than that of the parts to be joined and, usually, lower than 450 °C and which wets the parent metals

3.2
batch
collection of one or more units of product, made in a single production operation

4 Chemical composition

The chemical composition of the soft solder, sampled and analysed in accordance with Clause 6, shall be as given for the appropriate material in Table 2 or Table 3.

5 Forms of delivery

5.1 General

Soft solders conforming to this document shall be supplied in one of the following forms: ingot, slab, stick, bar, rod, wire, pellets, preforms, spheres, ribbons, powder or pastes and creams containing powder. Solder shall be uniform in quality and free from detrimental conditions such as contamination or surface oxide that prevent melting and flow in a manner suitable for the intended application.

NOTE 1 Solders supplied in the form of rod, wire, or preforms can be supplied with or without an integral flux, subject to agreement between the supplier and the purchaser.

NOTE 2 Not all the solder compositions given in the tables are necessarily available in all the product forms listed.