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Standards

Irish Standard  
I.S. EN ISO 9453:2020

# Soft solder alloys - Chemical compositions and forms (ISO 9453:2020)

**I.S. EN ISO 9453:2020**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN ISO 9453:2020 is the adopted Irish version of the European Document EN ISO 9453:2020, Soft solder alloys - Chemical compositions and forms (ISO 9453:2020)

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*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.*

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EUROPEAN STANDARD

EN ISO 9453

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2020

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Supersedes EN ISO 9453:2014

English Version

## Soft solder alloys - Chemical compositions and forms (ISO 9453:2020)

Alliages de brasage tendre - Compositions chimiques et formes (ISO 9453:2020)

Weichlote - Chemische Zusammensetzung und Lieferformen (ISO 9453:2020)

This European Standard was approved by CEN on 20 September 2020.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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**EN ISO 9453:2020 (E)**

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## **European foreword**

This document (EN ISO 9453:2020) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding and allied processes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 9453:2014.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Endorsement notice**

The text of ISO 9453:2020 has been approved by CEN as EN ISO 9453:2020 without any modification.

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# INTERNATIONAL STANDARD

**ISO  
9453**

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## **Soft solder alloys — Chemical compositions and forms**

*Alliages de brasage tendre — Compositions chimiques et formes*



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## ISO 9453:2020(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.

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](http://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](http://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](http://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](http://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.

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