

Soft soldering fluxes - Test methods - Part 6:
Determination and detection of halide (excluding
fluoride) content (ISO 9455-6:2022)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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English Version

Soft soldering fluxes - Test methods - Part 6:
Determination and detection of halide (excluding fluoride)
content (ISO 9455-6:2022)

Flux de brasage tendre - Méthodes d'essai - Partie 6:
Dosage et détection des halogénures (à l'exception des
fluorures) (ISO 9455-6:2022)

Flussmittel zum Weichlöten - Prüfverfahren - Teil 6:
Bestimmung und Nachweis des Halogenidgehaltes
(außer Fluorid) (ISO 9455-6:2022)

This European Standard was approved by CEN on 29 November 2022.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 9455-6:2022) 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of an identical text or by endorsement, at the latest by June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

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 9455-6:1997.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 9455-6:2022 has been approved by CEN as EN ISO 9455-6:2022 without any modification.

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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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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 and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 9455-6:1995), of which it constitutes a minor revision. The changes are as follows:

- [Clause 2](#) has been updated;
- new [Clause 3](#), Terms and definitions, has been inserted;
- the coding of the fluxes has been updated in accordance with ISO 9454-1:2016;
- [4.2](#), [5.2](#), [6.2](#) and [A.3](#) restructured;
- notes changed to body text in [4.4](#), [5.4](#), [5.6](#), [6.4](#) and [7.4.1.4](#);
- title added to [Table 1](#);
- formulae numbered;
- minor editorial changes.

A list of all parts in the ISO 9455 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. Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

Soft soldering fluxes — Test methods —

Part 6:

Determination and detection of halide (excluding fluoride) content

1 Scope

This document specifies three quantitative methods for the determination of the ionic halide (excluding fluoride) content of soldering fluxes. Halides are calculated as chlorides. A useful qualitative test method for the detection of ionic halides is also described.

Method A is a potentiometric titration method for the determination of halide (excluding fluoride) content and is applicable to flux classes 1 and 2, defined in ISO 9454-1. This method, which is considered the reference method for these fluxes, is suitable for halide contents generally within the range of 0,05 % mass fraction to 2 % mass fraction in the non-volatile matter of the flux.

Method B is a titration method for the determination of the total halide (excluding fluoride) content of water-soluble fluxes. It is applicable to flux classes 2122 to 2124, 3112 to 3114 and 3212 to 3214, as defined in ISO 9454-1.

Method C is a titration method for the determination of the halide (excluding fluoride) content of water-soluble fluxes containing phosphates and is applicable to flux class 331, as defined in ISO 9454-1.

Method D is a qualitative test, using silver chromate test paper, for the presence of ionic halides. The technique can be used for all classes of flux.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Method A: Potentiometric method (Reference method)

4.1 Principle

A prepared, weighed sample of the flux is dissolved in a suitable solvent. The resulting solution is titrated with standard silver nitrate solution, using a silver electrode, the mV readings being recorded simultaneously. From the graph of volume of titrant readings against mV readings, the point of inflexion is determined and the percentage halide content, expressed as chloride, is calculated. The method is not suitable for the determination of fluoride.

This method is applicable to flux classes 1 and 2, as defined in ISO 9454-1.