

Soft soldering fluxes - Test methods - Part 3:
Determination of acid value, potentiometric and visual
titration methods (ISO 9455-3:2019)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 9455-3:2020 sisaldab Euroopa standardi EN ISO 9455-3:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 9455-3:2020 consists of the English text of the European standard EN ISO 9455-3:2020.
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.
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Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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EUROPEAN STANDARD

EN ISO 9455-3

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English Version

Soft soldering fluxes - Test methods - Part 3:
Determination of acid value, potentiometric and visual
titration methods (ISO 9455-3:2019)

Flux de brasage tendre - Méthodes d'essai - Partie 3:
Détermination de l'indice d'acide par des méthodes de
titrage potentiométrique et visuel (ISO 9455-3:2019)

Flussmittel zum Weichlöten - Prüfverfahren - Teil 3:
Bestimmung des Säurewertes, potentiometrische und
visuelle Titrationsmethoden (ISO 9455-3:2019)

This European Standard was approved by CEN on 10 April 2020.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 9455-3:2020) 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of an identical text or by endorsement, at the latest by November 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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 9455-3:1994.

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 9455-3:2019 has been approved by CEN as EN ISO 9455-3:2020 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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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.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 12, *Soldering materials*.

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

This second edition cancels and replaces the first edition (ISO 9455-3:1992), which has been technically revised.

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

- the automated titration procedure has been added to [4.4](#);
- the document has been editorially aligned with the current Directives, Part 2.

A list of all parts in the ISO 9455 series can be found on the ISO website.

Soft soldering fluxes — Test methods —

Part 3:

Determination of acid value, potentiometric and visual titration methods

1 Scope

This document specifies two methods for the determination of the acid value of a flux of types 1 and 2 only, as defined in ISO 9454-1.

Method A is a potentiometric titration method and is to be considered as the reference method.

Method B is an alternative, visual end-point, titration method.

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 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/>

4 Method A: Potentiometric titration method

4.1 Principle

A prepared, weighed sample of the flux is dissolved in a suitable solvent. The resulting solution is titrated with standard tetrabutyl ammonium hydroxide solution, using a glass electrode, the pH or mV readings being recorded simultaneously. From the graph of volume of titrant against pH or mV readings, the point of inflexion is determined, from which the acid value is calculated.

As fluxes of classes 1131 and 1231 (see ISO 9454-1) can lose some acidity during the determination of non-volatile matter, the non-volatile matter obtained from carrying out the procedure of ISO 9455-1 or ISO 9455-2 on these classes of flux should not be used for this determination.

4.2 Reagents

Use only reagents of recognized analytical quality and only distilled, or deionized, water.

4.2.1 Tetrabutyl ammonium hydroxide $[(\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2)_4\text{N}(\text{OH})]$ 0,1 M (0,1 mol/l).

Use a commercially available standard solution or one prepared from a commercially available concentrated standard solution by dilution with propan-2-ol (4.2.2). Alternatively, prepare an 0,1 mol/l tetrabutyl ammonium hydroxide solution by diluting commercial concentrated solution