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Irish Standard
I.S. EN ISO 9455-5:2014

Soft soldering fluxes - Test methods - Part 5: Copper mirror test (ISO 9455-5:2014)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9455-5

July 2014

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Supersedes EN 29455-5:1993

English Version

Soft soldering fluxes - Test methods - Part 5: Copper mirror test (ISO 9455-5:2014)

Flux de brasage tendre - Méthodes d'essai - Partie 5: Essai au miroir de cuivre (ISO 9455-5:2014)

Flussmittel zum Weichlöten - Prüfverfahren - Teil 5: Kupferspiegeltest (ISO 9455-5:2014)

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Foreword

This document (EN ISO 9455-5:2014) 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of an identical text or by endorsement, at the latest by January 2015, and conflicting national standards shall be withdrawn at the latest by January 2015.

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

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INTERNATIONAL STANDARD

ISO 9455-5

Second edition
2014-07-01

Soft soldering fluxes — Test methods —

Part 5: Copper mirror test

Flux de brasage tendre — Méthodes d'essai —

Partie 5: Essai au miroir de cuivre

Reference number
ISO 9455-5:2014(E)

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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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 44, *Welding and allied processes*, Subcommittee SC 12, *Soldering materials*.

This second edition cancels and replaces the first edition (ISO 9455-5:1992), which has been technically revised.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 12 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

ISO 9455 consists of the following parts, under the general title *Soft soldering fluxes — Test methods*:

— *Part 1: Determination of non-volatile matter, gravimetric method*

— *Part 2: Determination of non-volatile matter, ebulliometric method*

— *Part 3: Determination of acid value, potentiometric and visual titration methods*

— *Part 5: Copper mirror test*

— *Part 6: Determination and detection of halide (excluding fluoride) content*

— *Part 8: Determination of zinc content*

— *Part 9: Determination of ammonia content*

— *Part 10: Flux efficacy test, solder spread method*

— *Part 11: Solubility of flux residues*

— *Part 13: Determination of flux spattering*

— *Part 14: Assessment of tackiness of flux residues*

— *Part 15: Copper corrosion test*

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— *Part 16: Flux efficacy tests, wetting balance method*

— *Part 17: Surface insulation resistance comb test and electrochemical migration test of flux residues*

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Soft soldering fluxes — Test methods —

Part 5: Copper mirror test

1 Scope

This part of ISO 9455 specifies a qualitative method for assessing the aggressiveness of a flux towards copper. The test is applicable to all fluxes of type 1 as defined in ISO 9454-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9454-1, *Soft soldering fluxes — Classification and requirements — Part 1: Classification, labelling and packaging*

ISO 9455-1, *Soft soldering fluxes — Test methods — Part 1: Determination of non-volatile matter, gravimetric method*

ISO 9455-2, *Soft soldering fluxes — Test methods — Part 2: Determination of non-volatile matter, ebulliometric method*

3 Principle

For flux samples in the form of a solid or paste, and for flux-cored solder, a flux test solution containing 25 % (m/m) of solids is prepared. For liquid flux samples, the liquid is used full strength as the flux test solution. The flux test solution is then evaluated in terms of its attack on a copper film previously vacuum deposited onto a glass plate (copper mirror). A rosin reference solution, which should not cause removal of the copper film, is used as a control. The object of the test is to determine the flux reactivity due to the presence of free halide activators.

NOTE The presence of amines in the flux can cause misleading results in that the flux appears to pass the test, when in fact it has a highly reactive composition.

4 Reagents

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

4.1 Acetone.

4.2 Propan-2-ol.

4.3 Degreasing agent, such as a suitable neutral organic solvent such as acetone or petroleum ether.

4.4 Rosin reference solution, 25 % (m/m), prepared by dissolving 25 g of W-W grade colophony in 75 g of propan-2-ol (see 4.2).

4.5 Ethylenediaminetetraacetic acid (EDTA), 0,1 % (m/m) solution.

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