
Soft soldering fluxes — Classification and requirements —

Part 2:
Performance requirements

*Flux de brasage tendre — Classification et caractéristiques —
Partie 2: Prescriptions de performance*



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Foreword

ISO (the International Standards Organization) is a worldwide federation of national standards bodies (ISO members). 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9454-2 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*
Soldering and brazing materials

ISO 9454 consists of the following parts, under the general title *Soft soldering fluxes — Classification and requirements*:

- *Part 1: Classification, labelling and packaging*
- *Part 2: Performance requirements*

Annex A of this part of ISO 9454 is for information only.

Introduction

Fluxes assist molten solder to wet metals surfaces to be joined by removing oxides and related contaminants from the solder and surfaces of the parts during soldering. Fluxes also protect surfaces from oxidization and assist wetting of the base metals by molten solder.

Care is necessary when selecting a flux for a particular application, in order to ensure an adequate service life of the assembly. Factors such as the ease of residue removal, corrosiveness, possible health and safety hazards and the efficacy of the flux, should all be considered when making the choice.

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Soft soldering fluxes — Classification and requirements —

Part 2: Performance requirements

1 Scope

This part of ISO 9454 specifies the performance requirements for fluxes in solid, liquid and paste forms intended for use with soft solders.

NOTES

- 1 ISO 9454-1 specifies the requirements for labelling and packaging as well as the coding system for the classification of the fluxes.
- 2 Some of the fluxes intended for inert gas and vapour phase soldering may not pass some of the criteria in tables 1 and 2. Requirements for these fluxes should be agreed between the purchaser and the supplier.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 9454-1:1990, *Soft soldering fluxes — Classification and requirements — Part 1: Classification, labelling and packaging.*

ISO 9455-1:1990, *Soft soldering fluxes — Test methods — Part 1: Determination of non-volatile matter, gravimetric method.*

ISO 9455-2:1993, *Soft soldering fluxes — Test methods — Part 2: Determination of non-volatile matter, ebulliometric method.*

ISO 9455-3:1992, *Soft soldering fluxes — Test methods — Part 3: Determination of acid value, potentiometric and visual titration methods.*

ISO 9455-5:1992, *Soft soldering fluxes — Test methods — Part 5: Copper mirror test.*

ISO 9455-6:1995, *Soft soldering fluxes — Test methods — Part 6: Determination and detection of halide (excluding fluoride) content.*

ISO 9455-8:1991, *Soft soldering fluxes — Test methods — Part 8: Determination of zinc content.*

ISO 9455-9:1993, *Soft soldering fluxes — Test methods — Part 9: Determination of ammonia content.*

ISO 9455-10:1998, *Soft soldering fluxes — Test methods — Part 10: Flux efficacy tests, solder spread method.*

ISO 9455-11:1991, *Soft soldering fluxes — Test methods — Part 11: Solubility of flux residues.*

ISO 9455-12:1992, *Soft soldering fluxes — Test methods — Part 12: Steel tube corrosion test.*

ISO 9455-13:1996, *Soft soldering fluxes — Test methods — Part 13: Determination of flux spattering.*

ISO 9455-14:1991, *Soft soldering fluxes — Test methods — Part 14: Assessment of tackiness of flux residues.*

ISO 9455-15:1996, *Soft soldering fluxes — Test methods — Part 15: Copper corrosion test.*

ISO 9455-16:—¹⁾, *Soft soldering fluxes — Test methods — Part 16: Flux efficacy tests, wetting balance method.*

ISO 9455-17:—¹⁾, *Soft soldering fluxes — Test methods — Part 17: Surface insulation resistance, comb test and electrochemical migration test of flux residues.*

3 Definitions

For the purposes of this part of ISO 9454, the following definitions apply.

3.1

flux

chemical substance in a form which assists molten solder to wet metal surfaces to be joined, by removing oxides and related contaminants from the solder and from the surfaces of the parts during soldering

NOTE — Flux may be in solid, liquid or paste form.

3.2

liquid flux

solution of a flux in a suitable liquid solvent

3.3

paste flux

solution or uniform dispersion of flux in a suitable viscous medium

3.4

colophony (rosin)

hard, natural resin, extracted from the oleoresin of pine trees and refined, consisting of abietic and pimaric acids and their isomers, some organic fatty acids and terpene hydrocarbons

NOTE — These natural rosins, or modified rosins, should give a positive reaction to the Liebermann and Storch test ^[1] and shall have an acid value greater than 155 mg KOH/g.

3.5

resin

general, non-specific, widely accepted term for natural and synthetic resinous products

3.6

activator

substance which increases the chemical reactivity of a flux

3.7

organic type flux

flux which is based on non-rosin organic substances

3.8

inorganic type flux

flux containing inorganic acids or alkalis, or their salts.

4 Flux condition

Solid fluxes shall be of uniform composition and be free from foreign matter or impurities deleterious to the fluxing action.

1) To be published.