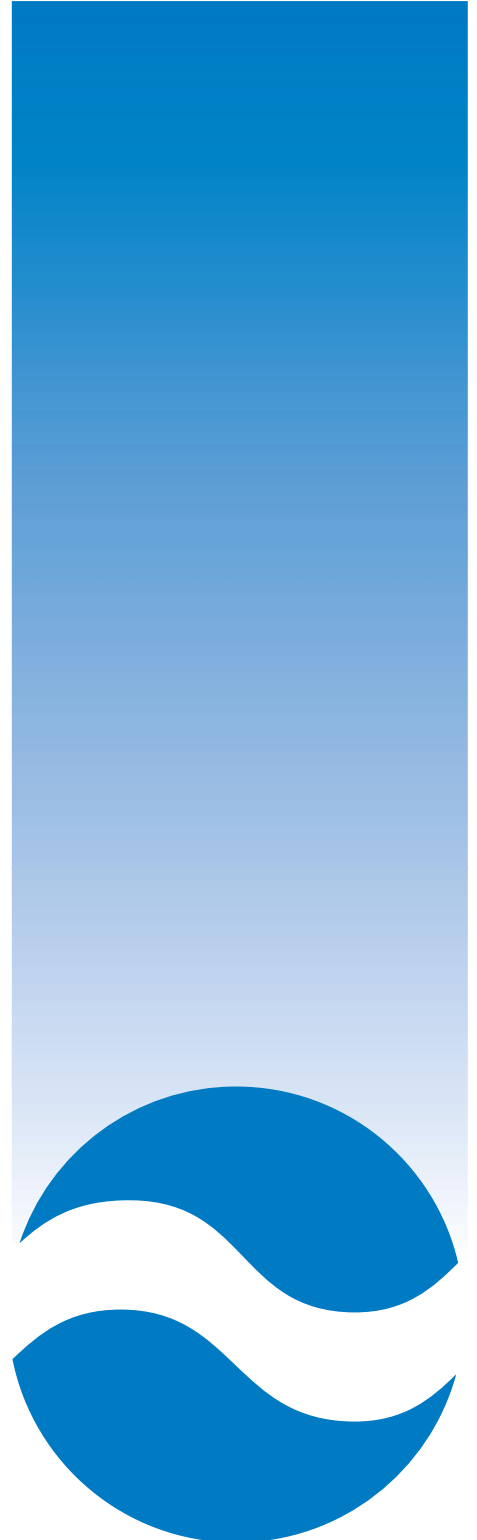


IPC J-STD-004B
Amendment 1
November 2011

JOINT INDUSTRY STANDARD

Requirements for Soldering Fluxes

Amendment 1



Requirements for Soldering Fluxes

Editorial Change

1.2 Purpose The purpose of this standard is to classify and characterize tin/lead and lead-free soldering flux materials for use in electronic metallurgical interconnections for printed circuit board assembly. Soldering flux materials include the following: liquid flux, paste flux, solder paste, solder cream as well as flux-coated and flux-cored solder wires and preforms. It is not the intent of this standard to exclude any acceptable flux or soldering material; however, these materials must produce the desired electrical and metallurgical interconnection.

Change in Note 1

Table 1-1 Flux Identification System

Note 1. Halide measuring <0.05% by weight in flux solids may be known as halide-free. The quantitative halide method determines the amount of halide present (see Appendix B-10).

Remove the Prefix BS from the Document Number

2.4 British Standards

EN 14582 Characterization of waste. Halogen and sulfur content. Oxygen combustion in closed systems and determination methods.

Insert 5 New Paragraphs

3.2.4 Halide In this standard, halogen ions are known as halides. Specifically, chlorine ion is known as chloride or (Cl⁻), bromine ion is known as bromide or (Br⁻), fluorine ion is known as fluoride or (F⁻), iodine ion is known as iodide or (I⁻) and halogen compounds that have ionic character are termed halide compounds.

3.2.5 Halogen In this standard, halogen is the term for all chlorine (Cl) and/or bromine (Br) in compounds. These two types of compounds are referenced based upon the EN 14582 test method (see 3.5.4).

3.2.6 Low Halogen Flux (Cl and Br) For the purpose of this standard, low halogen materials contain ≤1000 ppm (0.1%) Br, and ≤1000 ppm (0.1%) Cl. Sample preparation should be AABUS.

3.2.7 Resin Flux Primarily composed of synthetic resins and/or natural resins other than rosin types.

3.2.8 Rosin Flux Primarily composed of natural rosin, extracted from the oleoresin of pine trees and refined. The rosins used shall have a minimum acid value of 130 as determined per ASTM D-465. A synonym for rosin is colophony.

Insert Row at the Bottom of the Table and Replace Note 1

Table 3-1 Preparation of Flux Forms for Testing

Halogen Content	Flux residue after reflow	Flux residue after reflow	Flux residue after reflow; metal removed	Flux residue after reflow; metal removed	Flux residue after reflow; metal removed
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1. Testing an as-received flux containing >50% water may give a failing result due to the presence of water, so it may be oven dried at 80° ± 2°C for 1 hour +15 minutes/-0 minutes and reconstituted (dissolved in the appropriate solvent) per IPC-TM-650, Method 2.3.32 for use in this test. If the sample is tested in the reconstituted state, results from both the as-received and reconstituted samples shall be reported.

Change Paragraph

3.3.1.2.2 Halide Content Flux Type shall be identified using 0 or 1 to indicate the absence or presence of halide in the flux, where <0.05% halide is defined as halide free. The absence or presence of halide shall be determined per the test method outlined in Table 3-2 and the corresponding paragraphs. The quantitative halide method determines the amount of halide present (see Appendix B-10). Testing for halide content does not include evaluation for halogen content. A material with a “0” indicator may contain non-ionic halogen. See 3.2.4 and 3.2.5.