ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES®

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Number	
2.3.35.1	
Subject	
Fluorides By Spot Test, Fluxes-Qualitative	
Date	Revision
06/04	**A**
Originating Task Group	
Flux Specifications Task Group (5-24a)	

IPC-TM-650
TEST METHODS MANUAL

1 Scope This test method is designed to determine the presence (if any) of fluoride(s) in soldering flux by visual examination after placement of a drop of liquid test flux in a zirconium - alizarin purple lake.

2 Applicable Documents

IPC J-STD-004 Requirements for Soldering Fluxes

3 Test Specimen

3.1 A minimum of 10 ml of first article or production specimen of liquid flux, solder paste, paste flux, or extracted flux from preform or wire.

3.2 The extraction of preforms or wire should be carried out in accordance with J-STD-004.

3.3 For paste flux or solder paste, dilute the sample in 2-propanol or another suitable solvent. A minimum amount of solvent should be used just allowing for the sample to be dropped from a dropper.

Note: The solvent used in dilution/extraction must be water miscible.

4 Apparatus and Reagents

4.1 Apparatus

4.1.1 White spot plate

4.1.2 Glass droppers

4.1.3 Glass rods

4.2 Reagents

4.2.1 Zirconium nitrate solution: 0.05 g dissolved in 50 ml of deionized water.

4.2.2 Sodium alizarin sulfate solution: 0.05 g dissolved in 50 ml of deionized water acidified with 10 ml of hydrochloric acid.

5 Procedure

5.1 Preparation Prepare a fresh zirconium - alizarin purple lake in three spots of the white spot plate by adding one drop each of zirconium nitrate and sodium alizarin sulfate solutions.

5.2 Test

5.2.1 Add one drop of the test flux to each of the spots.

5.2.2 Mix each spot with a clean glass rod.

5.2.3 Examine for any color change.

5.3 Evaluation A change in color of the lake from purple to yellow is an indication of the presence of fluoride(s). A color change is typically seen at concentrations between 100 and 150 parts per million fluoride.

6 Notes

6.1 Safety Observe all appropriate precautions on MSDS for chemicals involved in this test method.