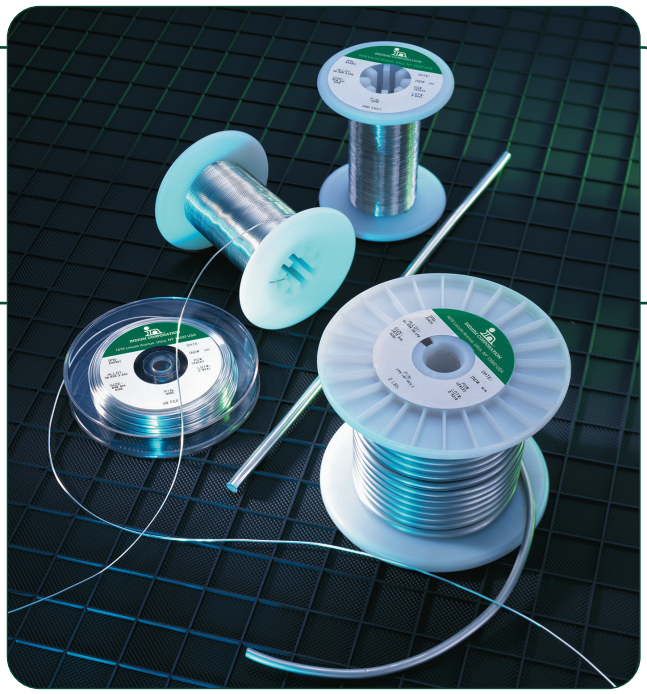
PRODUCT DATA SHEET

CW-301

Water-Soluble Cored Wire Solder



Introduction

CW-301 Wire Solder is cored with a high-reliability water-soluble flux that is compatible with Indium Corporation's full line of Pb-free soldering materials. It provides excellent solder spread with minimal smoking and low odor. The fast wetting speed is beneficial in minimizing rework cycle time which is typically longer with Pb-free solders.

Features

- Optimized for use with Sn/Pb and Pb-free assembly and rework processes
- Excellent cleanability with cold water
- Fast and excellent wetting to common Pb-free surface finishes including: ImSn, ENIG, OSP, and ImAg
- Minimal spattering and low odor
- Resistant to charring

Product Description

IPC J-STD-004B Classification	ORH1
Acid Value (mgKOH/gram of flux)	57
Rosin-Containing	No
Halide Content %	3.0
Smoke	Medium
Odor	Mild
Color	Amber
IPC J-STD-006 Compliance	Indium Corporation impurity levels conform to or exceed IPC J-STD-006
Compatible Alloys	All common and specialty alloys†
Copper Mirror IPC J-STD-004B	Pass
Copper Corrosion IPC J-STD-004B	Pass
SIR J-STD-004B*	Pass
Electromigration J-STD-004B*	Pass

† Common Alloys: SAC305; SACm®0510; Sn995; SAC105; SAC0307; SAC387; 96.5Sn/3.5Ag; 95Sn/5Sb; Indalloy®227; Indalloy®254; 63Sn/37Pb; 60Sn/40Pb; 93.5Pb/5Sb/1.5Ag; 43Sn/43Pb/14B, and all similar alloys.

** Data available upon request.*

Wire Diameters

Wire Solder Length Per Spool	
Wire Diameter	**96.5Sn/3.0Ag/0.5Cu (SAC305)**
0.010" ± .002" (.254mm ± .051mm)	1,950ft (595m)
0.015" ± .002" (.381mm ± .051mm)	2,025ft (618m)
0.020" ± .002" (.508mm ± .051mm)	1,140ft (347m)
0.032" ± .002" (.813mm ± .051mm)	445ft (136m)

Values are only approximate. Actual lengths may vary.

Residue Removal

The flux in **CW-301** is formulated for use in water-wash assembly processes. The post-soldering flux residue should be removed as soon as possible after soldering. The residue may be readily cleaned in conventional equipment without the use of saponifiers or detergents. It is important that the cleanliness of boards and components are thoroughly checked after soldering and cleaning. Deionized water is recommended for final rinse.

Shelf Life

	Warranted	Practical*
Tin-Lead Alloys	3 years from DOM	Indefinite
Lead-Free Alloys	3 years from DOM	Indefinite
>85% High-Lead	2 years from DOM	Indefinite

**When stored at less than 40°C and less than 80% RH*

When stored in a cool, dry environment, there is no reason that Indium Corporation's **CW-301** cannot retain its intended soldering properties for many years. The main causes of degraded cored wire reflow performance are the buildup of a thick oxide layer on the surface of the wire, caused by prolonged exposure to higher than normal temperature and humidity conditions, or the buildup of lead carbonate on high-lead (>85%) alloy-cored wire shipped or stored under very high humidity conditions.

From One Engineer To Another®

INDIUM® CORPORATION®

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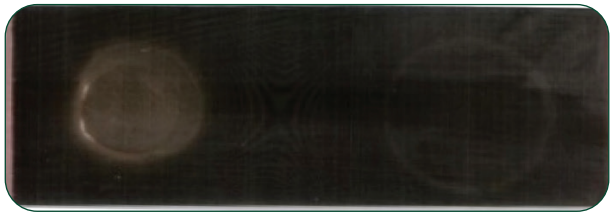
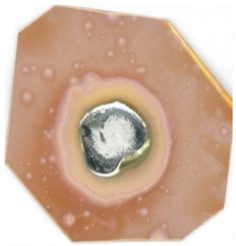
Copper Mirror

The J-STD-004B copper mirror test is performed per IPC-TM-650 method 2.3.32. To be classified as an "L" type flux, there should be no complete removal of the mirror surface. **CW-301** shows complete removal of the copper mirror and, therefore, is classified as an "H" flux, type "ORH0."

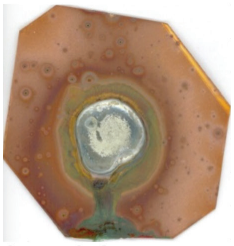


Copper Corrosion

Copper corrosion is tested per IPC-TM-650 method 2.6.15. This test gives an indication of visible reactions that take place between the flux residue after soldering and copper surface finishes. In particular, green copper corrosion (formed as copper-chloride) should not be seen. While green copper chloride is clearly not present, the flux did turn the copper somewhat blue, indicating a reaction product. However, since the residue from this flux is designed to be removed with water and should not be left on the board for 240 hours, this reaction product should not be a concern.



CW-301 SAC305 uncleaned
0 hours



CW-301 SAC305 uncleaned
240 hours

Technical Support

Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Materials Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder properties, alloy compatibility and selection of solder preforms, wire, ribbon, and paste. Indium Corporation's Technical Support Engineers provide rapid response to all technical inquiries.

Safety Data Sheets

Please refer to the SDS document within the product shipment, or contact our local team to receive a copy.

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

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