

PRODUCT DATA SHEET

# No-Clean Flux-Cored Wire

for Circuit Board Assembly and Rework

## Standard Flux Core Sizes, Alloys, and Shelf Life

Alloys	High Flux %	Medium Flux %	Low Flux %	Shelf Life
SnPb <80% Pb	2.7–3.2%	1.8–2.5%	0.8–1.2%	10 years from DOM
Pb-Free Alloys	2.7–3.2%	1.8–2.5%	0.8–1.2%	10 years from DOM
High-Lead >85%	1.8–2.5%	1.3–1.7%	0.8–1.2%	2 years from DOM

Indium Corporation can produce many of the alloys on its alloys list as cored wire. Alloys containing greater than 20% bismuth, greater than 8% antimony, gold, or greater than 5% silver cannot be produced as cored wire at this time.

## Standard Diameters and Packaging

Diameters		Packaging
Inches	Millimeters	
0.010 ± 0.002	0.25 ± 0.05	¼lb (113g)
0.015 ± 0.002	0.38 ± 0.05	¼lb (113g)
0.020 ± 0.002	0.51 ± 0.05	1lb (454g)
0.025 ± 0.002	0.64 ± 0.05	1lb (454g)
0.032 ± 0.002	0.81 ± 0.05	1lb (454g)
0.040 ± 0.002	1.02 ± 0.05	1lb (454g)
0.062 ± 0.002	1.57 ± 0.05	1lb (454g), 5lb (2,268g), 20lb (9,072g)
0.125 ± 0.002	3.18 ± 0.05	1lb (454g), 5lb (2,268g), 20lb (9,072g)

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

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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## Introduction

Indium Corporation has developed a range of flux-cored wire solutions to meet the needs of virtually every electronic assembly and rework operation. Flux-cored wire solutions are created when the desired alloy, cored-wire flux, and flux percentage are combined into a void-free, perfectly layer-wound package which can be easily used for both hand soldering and automated wire feed solder. Indium Corporation prides itself on providing the industry's widest range of flux-cored wire solders for both standard electronic assembly as well as highly specialized needs. No application is too large or too small.

## No-Clean Cored Wire Flux Formulations

• **CW-807 Standard Halogen-Free No-Clean:** This formula provides a balance of properties needed for high-reliability no-clean soldering and rework—high-reliability, considered halogen-free, low smoke, non-offensive odor, clear residue, and fast wetting to clean copper and solder-coated surfaces. CW-807 meets the requirements of J-STD-004 and J-STD-004B as a ROL0.

• **CW-807M Higher Activity No-Clean:** CW-807M has the same characteristics as CW-807, but with a small addition of a halogen activator for more difficult-to-solder assemblies. This formula is considered ROL0 by J-STD-004, and ROM1 by the updated J-STD-004B.

• **CW-807H No-Clean for High-Temp Alloys:** CW-807H has very similar characteristics to CW-807, except that a high-temperature modified rosin has been substituted for the lower melting point rosin used in CW-807. This change makes the CW-807H slower wetting with standard solder alloys, but provides heat stability when soldering with high-lead content, high-temperature alloys for applications such as “down-hole” electronics, while still maintaining the same reliability characteristics.

• **CW-802 Low Activity No Halogen Added No-Clean:** While very small amounts of halogen (<500ppm) are perfectly fine and considered halogen-free for virtually all electronic assemblies, some electronic assemblers want a formula that eliminates as much halogen as possible. CW-802 was created with this in mind. However, it is recommended only for applications where no halogen is a must, the surfaces to be soldered are in pristine condition, and the process is well-controlled.

Formula	CW-807	CW-807M	CW-807H	CW-802
IPC J-STD-004B	ROL0	ROM1	ROL0	ROL0
Acid Value (mgKOH/gram of flux)	270	270	250	270
Rosin Containing	Yes	Yes	Yes	Yes
Halide Content %	<0.05	0.23	<0.05	<0.05
Smoke	Minimal	Minimal	Minimal	Minimal
Odor	Mild, sweet	Mild, sweet	Mild, sweet	Mild, sweet
Color	Clear, light	Clear	Amber	Clear
IPC J-STD-006 Compliance	Indium Corporation impurity levels conform to or exceed IPC J-STD-006	Indium Corporation impurity levels conform to or exceed IPC J-STD-006	Indium Corporation impurity levels conform to or exceed IPC J-STD-006	Indium Corporation impurity levels conform to or exceed IPC J-STD-006
Compatible Alloys	All common and specialty alloys <sup>†</sup>	All common and specialty alloys <sup>†</sup>	High-Temp Alloys <sup>††</sup>	All common and specialty alloys <sup>†</sup>
Copper Mirror IPC J-STD-004B	See Copper Mirror section	Pass	Pass	Pass
Copper Corrosion IPC J-STD-004B	See Copper Corrosion section	Pass	Pass	Pass
SIR J-STD-004B*	Pass	Pass	Pass	Pass
Electromigration J-STD-004B*	Pass	Pass	Pass	Pass

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

<sup>††</sup> High-Temp Alloys: 5Sn/95Pb, 5Sn/93.5Pb/1.5Ag, 5Sn/92.5Pb/2.5Ag, 10Sn/88Pb/2Ag, and similar alloys.

\* Data available upon request.



From One Engineer To Another<sup>®</sup>

Form No. 98823 R10

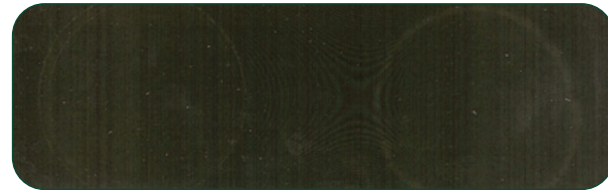
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# No-Clean Flux-Cored Wire

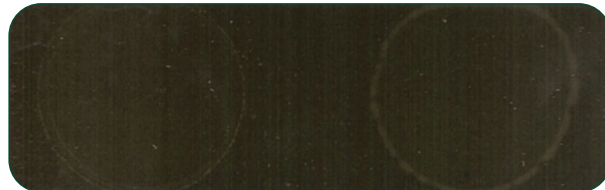
for Circuit Board Assembly and Rework

## 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-807, CW-807H, and CW-802 show no complete removal of the copper mirror and, therefore, are classified as an ROL0. CW-807M shows minor removal of the mirror surface, therefore, can be classified as an "M" type flux.



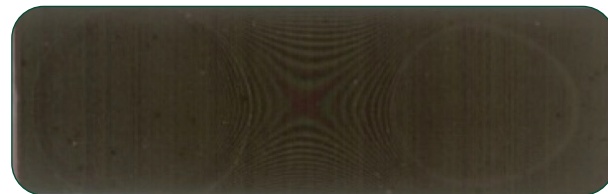
CW-807 5% Solution (IPA) Standard Rosin  
Front Side



CW-807 5% Solution (IPA) Standard Rosin  
Back Side



CW-807M 5% Solution (IPA) Control



CW-807H 5% Solution (IPA) Control



CW-802 10% Solution (IPA) Control

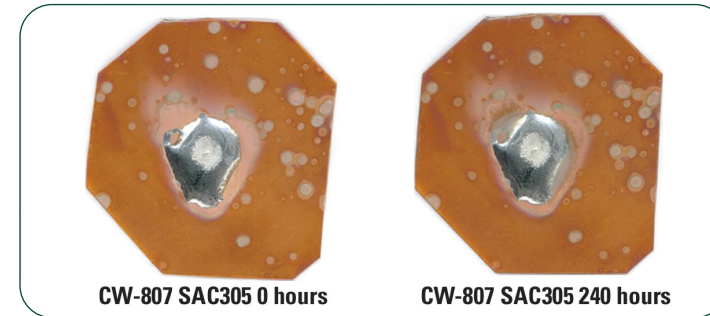
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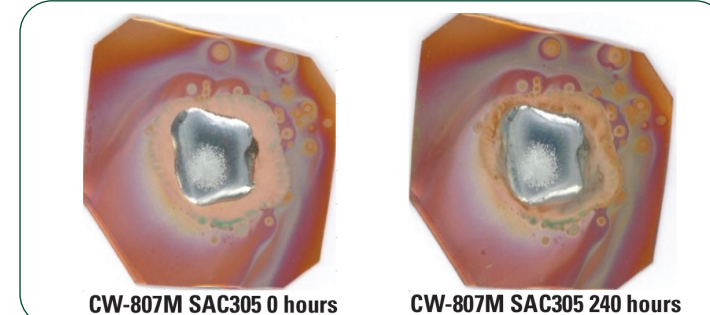
## Copper Corrosion

Copper corrosion is tested per IPC-TM-650 method 2.6.15. This test gives an indication of any visible reactions that take place between the flux residue after soldering and copper surface finishes. With CW-807M, there is a minor amount of color change, acceptable for an "M" type flux.



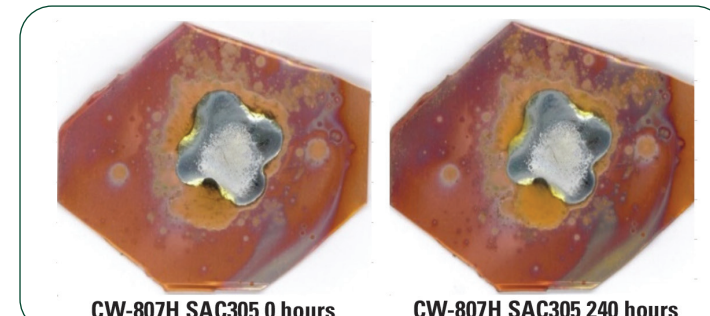
CW-807 SAC305 0 hours

CW-807 SAC305 240 hours



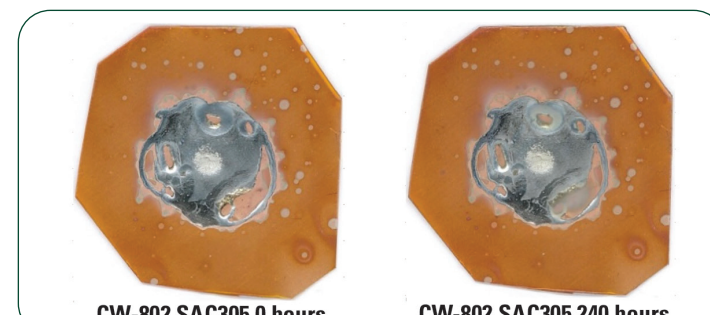
CW-807M SAC305 0 hours

CW-807M SAC305 240 hours



CW-807H SAC305 0 hours

CW-807H SAC305 240 hours



CW-802 SAC305 0 hours

CW-802 SAC305 240 hours

