

PRODUCT DATA SHEET

No-Clean Flux-Cored Wire for Circuit Board Assembly and Rework

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.

- **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-501 High Activity Rosin Free No-Clean:** CW-501 is rosin (colophony) free and due to the heat stable nature of the resin used and activator system, shows exceptionally effective soldering on a wide range of assemblies with a wide range of alloys and conditions. The resin used has a different odor than those formulas based on rosin and, while generally non-offensive, will be different than operators typically expect.
- **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.

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 ROLO.
- **CW-807M Higher Activity No-Clean:** CW-807M has the same characteristics as CW-807, but with a small addition of halogen activator for more difficult to solder assemblies. This formula is considered ROLO by J-STD-004, but ROL1, by the updated J-STD-004B.

Formula	CW-807	CW-807M	CW-807H	CW-501	CW-802
Application	Halogen-Free No-Clean	Halogen-Containing No-Clean	High Temp Halogen-Free No-Clean	Rosin-Free No-Clean	Halogen-Free No-Clean
IPC J-STD-004*	ROLO	ROLO	ROLO	RELO	ROLO
IPC J-STD-004B*	ROLO	ROL1	ROLO	REL1	ROLO
Meets MIL-F-14256f type RMA or QQ-S-571f type RMA	Yes	Yes	Yes	No	Yes
Rosin Containing	Yes	Yes	Yes	No	Yes
Halogen-Free per JEITA ET-7304**	Yes	Yes	Yes	No	Yes
Actual Halogen Content***	<500 ppm	<1500 ppm	<500 ppm	>1500 ppm	<50 ppm
Copper Mirror Corrosion IPC J-STD-004B	Pass	Pass	Pass	Pass	Pass
SIR J-STD-004B***	Pass	Pass	Pass	Pass	Pass
Electromigration J-STD-004B***	Pass	Pass	Pass	Pass	Pass
Color	Clear	Clear	Amber	Clear	Clear
Odor	Mild, sweet	Mild, sweet	Mild, sweet	Moderate	Mild, sweet
Alloys	All Common Alloys†	All Common Alloys†	High Temp Alloys††	All Common Alloys† and High Temp Alloys††	All common alloys†

† Common Alloys: 63Sn/37Pb, 60Sn/40Pb, 62Sn/36Pb/2Ag; SAC405, SAC387, SAC305, SAC105, SAC0307, SACM105, SACM0510, 96.5Sn/3.5Ag, 96Sn/4Ag, 95Sn/5Sb, 50Sn/50Pb, 43Sn/43Pb/14Bi, and all similar alloys

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

* J-STD-004 and J-STD-004B vary in the way they measure halogen content. J-STD-004B finds both ionic and non-ionic halogen whereas J-STD-004 will find ionic halogen, but most likely will not find non-ionic halogenated activators. Up to 500ppm combined halogen is considered halogen-free.

** JEITA ET-7304 allows up to 900ppm chloride, 900ppm bromide, and up to 1500ppm combined bromide and chloride to be considered halogen-free.

*** Data available upon request.

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Standard Flux Core Sizes, Alloys, and Shelf Life

Alloys	High Flux %	Medium Flux %	Low Flux %	Shelf Life (<26° C & <60% RH)
SnPb <80% Pb	2.7-3.2%	1.8-2.5%	0.8-1.2%	3 years
Pb-Free Alloys	2.7-3.2%	1.8-2.5%	0.8-1.2%	3 years
High Lead >80%*	1.8-2.5%	1.3-1.7%	0.8-1.2%	2 years*

*= />95% Pb has 1-year shelf life unless bagged in an inert atmosphere at an extra charge.

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

Inches	mm Equivalent	Tolerance	Packaging	Cartons
0.010"	0.25	± 0.002"	1/4 lb.	10 - 1/4 lb. spools
0.015"	0.38	± 0.002"	1/4 lb.	10 - 1 lb. spools
0.020"	0.50	± 0.002"	1 lb.	10 - 5 lb. spools
0.025"	0.63	± 0.002"	1 lb.	per box
0.032"	~0.75	± 0.002"	1 lb.	—
0.040"	1.0	± 0.002"	1 lb.	—
0.062"	~1.5	± 0.002"	1 lb., 5 lb., 20 lb.	2 - 20 lb. spools
0.125"	3.18	± 0.002"	1 lb., 5 lb., 20 lb.	per box

*Note: 5 and 20 lb. spools of lead-free alloy are only 4 and 18 lbs., respectively.

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