

Flux Cored
Wire Solder

72M

series

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6 Reasons to select 72M series

1

Powerful
& quick
Wetting

2

Proven
**High
Electric
Reliability**

3

**Anti-
Erosion**
extends iron tip
life more than
4 times

4

Robots
High-accuracy
soldering

5

Lasers
Non-contact
soldering

6

Easy
**IPA
Cleaning**

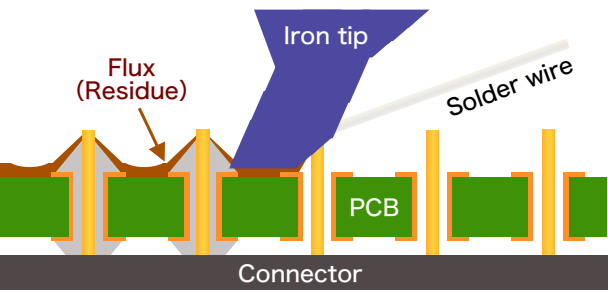


Incomparably process-friendly! Powerful Wetting Wire Solder

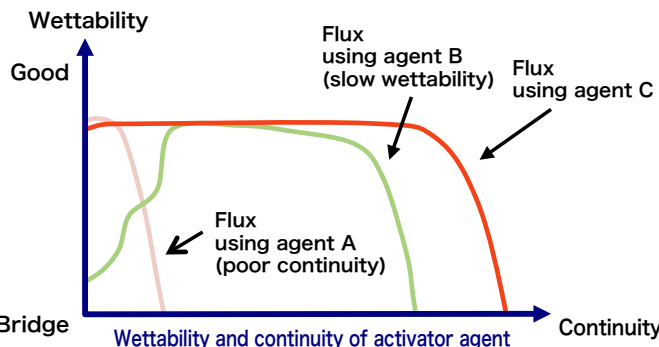
Superior
Solderability!

You can use it with hands, robots and lasers!

Slide soldering: 72M series



72M series adopts activator C that performs good wettability throughout the soldering process, and a resin composition that improves flux coverage over the pattern. Even if the iron tip is set to a low temperature, or if the slide speed is set too high, 72M series can prevent the occurrence of bridging owing to those features.



Good at High-speed Robotic Soldering

- **Equipment:** UNIX-412R (Japan Unix)
Iron Tip: P1V10-23
- **Test PCB:** FR-4 OSP (TH dia. 1.0mm ϕ , =1.6mm)
- **Connector:** 2.54mm pitch L angled pin header, 20 pins (Misumi)
- **Wire Diameter:** 0.5mm ϕ

Test Condition

Wire Feed Speed	Slide Speed: 6mm/s→29mm/s
Wire Feed Amount	Slide Speed: 13mm/s→62mm/s
Wire Feed Amount	300mm
Iron Tip Temperature	350°C

Slide Speed	S3X-72M		Conventional Product	
	Soldered side	Back side	Soldered side	Back side
6mm/s				
13mm/s				

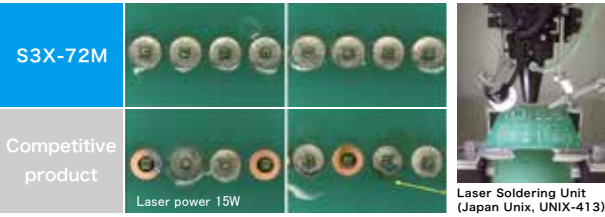
Due to the properties of activator C, 72M series exhibits long-lasting wetting performance, from a normal slide speed of 6mm/s to a high-speed 13mm/s. Faster wetting than conventional product prevents insufficient wetting and spreading. 72M series of 4.5% flux content intended for even more powerful wetting is also available.

For Rework & Repair by Hand Soldering



72M series drastically reduces soldering fumes for manual soldering.

For High Accuracy Laser Soldering

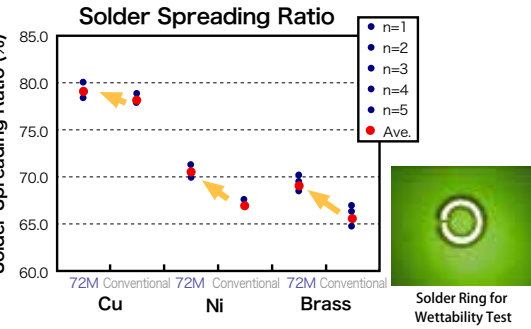


72M series shows a fast wetting reaction and exhibits excellent wettability and solder spread. Flux splattering is kept low, preventing flux burns.

Superior Wetting to Any Substrate

Substrate	S3X-72M	Conventional
Cu		
Ni		
Brass		

- **Test Method :** In-house method (Calculation based on JIS Z3197)
- **Test Piece :** Cu, Ni and Brass plate (degreased surface with organic solvent)
- **Wire Diameter :** 0.8mm ϕ (Ring inner diameter: 1.6mm ϕ)
- **Melt Condition :** Melt on the solder bath at 300°C, holding time is 5 seconds

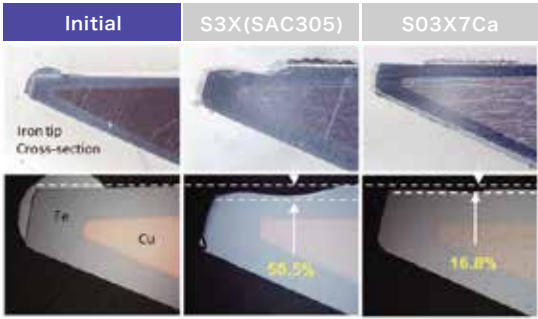


Spend less on iron tips!

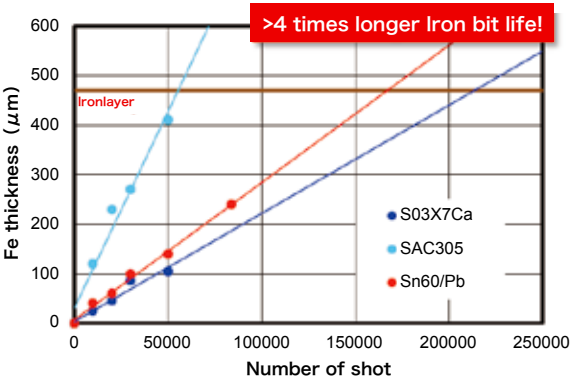
High Electrical Reliability

Applicable alloys:
S3XCa, S03X7Ca, S01X7Ca

Iron tips lasts >4 times!!

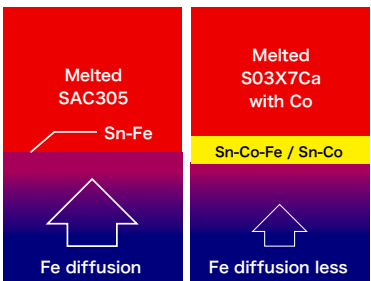


>EMPA analysis of boundaries between solder and iron tip
Iron tip temp. 400°C, Wire feed condition 5.0mm/shot

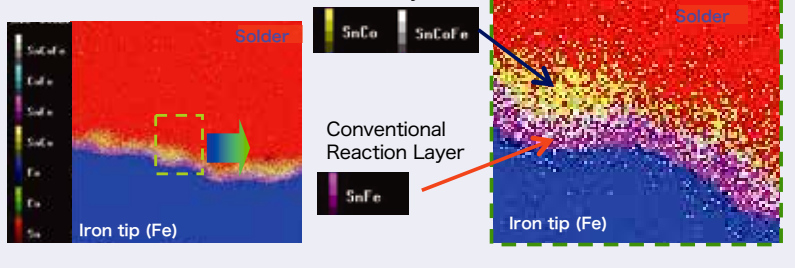


Barrier layer helps reduce iron tip erosion

Schematic view of reaction between iron tip and melted solder



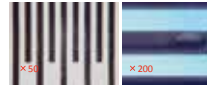
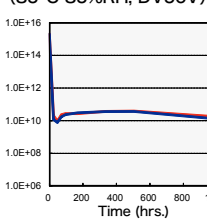
S03X7Ca (Sn 0.3Ag 0.7Cu 0.04Co + α)



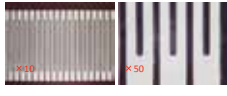
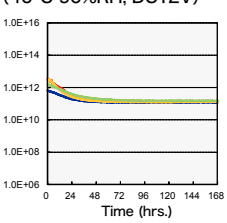
Solder iron tip erosion are prevalent with Sn3Ag0.5Cu alloy but are reduced with the Sn0.3Ag0.7Cu0.04Co alloy. The new alloy forms a Sn-Co-Fe/Sn-Co barrier on the Sn0.3Ag0.7Cu0.04Co lead-free alloy which helps to reduce solder iron erosion.

SIR above 10¹⁰Ω over 1000 hours

• EM Test (85°C 85%RH, DV50V)

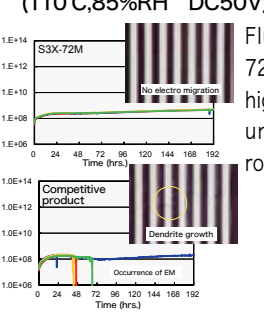


• IPC-SIR(TM-650 2.6.3.7) (40°C 90%RH, DC12V)



72M flux residue maintained insulation resistance above 10¹⁰Ω for more than 1000 hours in In an 85°C and 85%RH environment and with an applied voltage of DC50V. No evidence of migration has been found in tests conducted according to JIS and IPC methods.

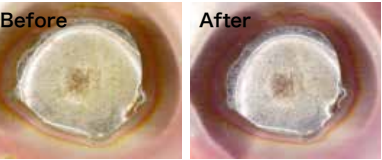
• SIR in HAST (110°C,85%RH DC50V)



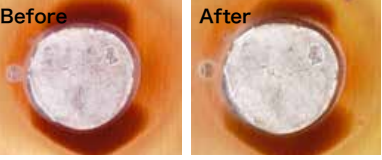
Flux residue from 72M series ensures high reliability even under HAST environments.

No Cu Corrosion

JIS Method



IPC Method (TM-650 2.6.15)



Copper Plate Corrosion Test(JIS,IPC)

72M residue has shown no signs of corrosion when tested in accordance to JIS and IPC methods.

Specifications

Available wire diameters (mm):0.3, 0.5, 0.6, 0.8, 1.0, 1.2
*1 Per JIS Z 3197 *2 Per IPC J-STD-004

Item	S3X-72M	S3XCa-72M	S03X7Ca-72M	S01X7Ca-72M
Application	Manual soldering Robot soldering Laser soldering Anti iron-tip erosion IPA cleaning	yes yes yes yes yes	yes yes yes yes yes	yes yes yes yes yes
Alloy Property	Alloy Composition Melting Point (°C)	Bal. Sn 3.0Ag 0.5Cu 217 - 219	Bal. Sn 0.3Ag 0.7Cu 0.04Co + α 217 - 219	Bal. Sn 0.1Ag 0.7Cu 0.04Co + α 217 - 227
Flux Content (%)	3.2 (or 4.5)			
Halide Content (%) ^{*1}	Less than 0.01			
Copper Plate Corrosion ^{*1,2}	Pass			
Copper Mirror Corrosion ^{*1,2}	Pass			
SIR (Ω) [85 °C, 85 % RH, 168 Hrs] ^{*1}	Over 1x10 ⁹			
Migration (Visual) [85 °C, 85 % RH, DC 50 V, 1000 Hrs] ^{*1}	No evidence of migration (Insulation resistance: 1x10 ⁹)			
Flux Classification ^{*2}	ROL0			
Shelf Life	2 years			