

Core Solder (Superb Workability)

Combines wettability and controllability to achieve excellent workability

SR-55 LFM-48

Reliability of JIS A level is achieved. Initial wettability is good from low temperature range. Significantly improves working speed. Spreads well on parts made of materials that are hard to wet such as nickel and oxidized copper. Also provides excellent separability. Detachability of the solder from iron tip is improved, contributing to the higher workability.

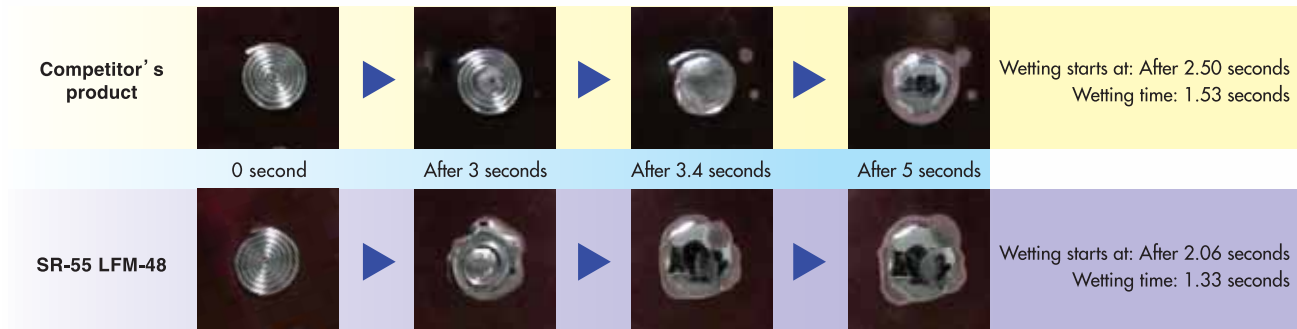


[Application] ●Sn-Ag-Cu alloy ●Sn-Cu alloy/General electronics devices, through-hole substrates, robot soldering, etc.

Comparing initial wettability and spreadability

Meets JIS A standard for core solders and provides good initial wettability at low temperature range. Guarantees stable soldering performance.

Low temperature (270°C)



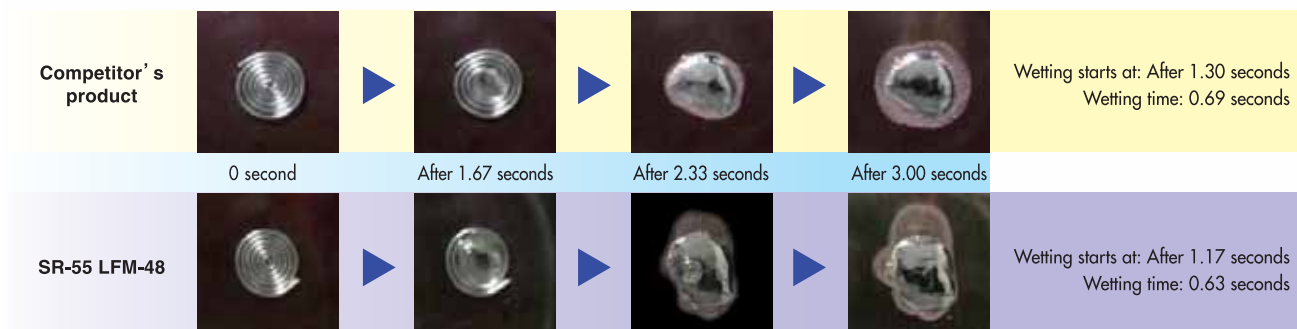
Initial wettability (270°C)

	Competitor's product	SR-55 LFM-48
Wetting starts at	2.50 sec	2.06 sec
Wetting time	1.53 sec	1.33 sec

Wetting spreadability (270°C)

	Competitor's product	SR-55 LFM-48
Oxidized copper plate	81.1%	83.8%
Nickel plate	73.1%	73.8%

High temperature (350°C)



Initial wettability (350°C)

	Competitor's product	SR-55 LFM-48
Wetting starts at	1.30 sec	1.17 sec
Wetting time	0.69 sec	0.63 sec

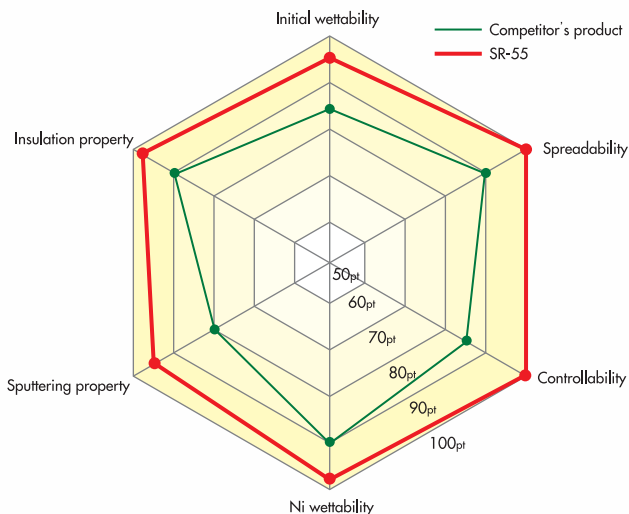
Wetting spreadability (350°C)

	Competitor's product	SR-55 LFM-48
Oxidized copper plate	84.1%	85.5%
Nickel plate	76.3%	78.8%

Advantages of SR-55 LFM-48 are compared and examined. Improved ingredients and properties achieve cost reduction.

Comparison of performance of SR-55 with competitor's product

	Competitor's product	SR-55
Solder spreading method [%]	81.1	83.8
Copper plate corrosion test	Passed	Passed
Water extract resistivity test [Ωm]	430	1350
Dryness test	Passed	Passed
Insulation resistance test [Ω] 85[°C] × 85[%RH] × 1000[H]	1×10^9 or higher	1×10^9 or higher
Voltage applied moisture resistance test 85[°C] × 85[%RH] × 1000[H]	1×10^9 or higher	1×10^9 or higher
Sputtering test [piece] (Flux + solder ball)	320[°C]	59
	350[°C]	24
	380[°C]	5



Spreadability on various poor wetting metals

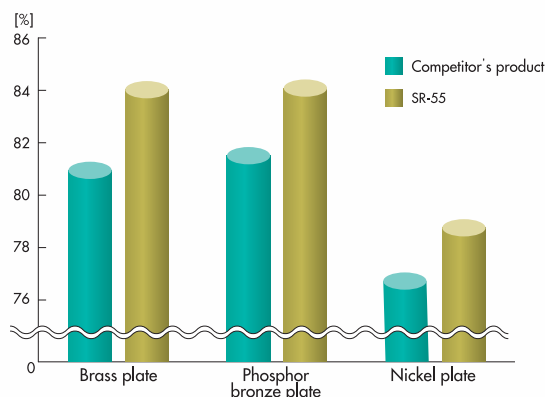
Flux	Competitor's product	SR-55
Brass plate [%]	80.9	84.0
Phosphor bronze plate [%]	81.5	84.1
Nickel plate [%]	76.6	78.9

[Purpose]

Evaluation of wettability on alloys that are difficult to wet.

[Evaluated items]

- 1) Evaluated metal plates: Copper plates, phosphor bronze plates, brass plates, nickel plates (with and without oxidation)
- 2) Evaluated flux: SR-55
- 3) Evaluation method: Solder spreading method using core solder swirl test pieces n=5 (320 × 20 seconds)



Automatic soldering robot (connector parts 20p)

Product name	Amount of solder	Total	Soldering time
Current product	1g	17.3 yen	48.0sec
SR-55	0.9g	14.5 yen	39.6sec

SR-55 may produce 40,000 units per month, while the current product yields 33,000 units per month. Production efficiency improves by 33%. Further, the production efficiency becomes 1.5 times higher, because the multiplier effect of consumption of the iron tip is reduced and time consumption for replacement of iron tip is also reduced.

Customer Quote (Parts manufacturer)

Iron tip temperature management becomes easier.

This core solder provides good soldering performance even when the temperature on the iron tip is lower. By reducing the heat affecting the parts and substrates, the iron tip temperature management has become much easier. Since the quality of parts after soldering is high, we achieved our long-standing goal to improve quality and work efficiency.

Line-up of Rosin-Core Solder

(Example) SR-55 LFM-48 3.5% 1.0 ϕ
Flux + Alloy + Flux Content + Wire Diameter

Rosin-Cored Solder Specifications

Flux	Alloy composition	Flux Content	Melting Temperature	Wire Diameter
SR-55	LFM-48 (Sn-3.0Ag-0.5Cu)	3.5%	217-220°C	0.5, 0.65, 0.8, 1.0, 1.2, 1.6
	LFM-22 (Sn-0.7Cu)		227°C	

※ LFM-48 holds the sublicenses for JP PAT No.3027441 and US PAT No. 5527628
※ If the core solder with the ordered wire diameter is out of stock, please contact with our sales representative.

Technology for the future

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