Core Solders "Products for Minimizing Tip Erosion"

Problems involving iron tip erosion when using lead-free solder have been largely overcome. Both the flux and the alloy of the core solder play a part in ensuring ideal soldering conditions.

SR-37 / BT-19 LFM-48S

SR-37 LFM-22S／SR-37 LFM-41S

1. Tip erosion problems when using lead-free solder are almost entirely overcome through a combination of flux with good wetting properties and the alloys designed to minimize its erosion.
2. As a result of tip exchange reduction, substantial cost reduction is possible.

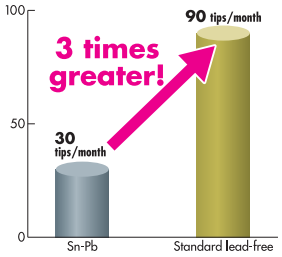
Examples of application : Sn-Ag-Cu solders　Sn-Cu solders　**Robotic soldering machines, soldering with specialized tips**

Reasons for excessive tip erosion with lead-free soldering operation

Reason 1	Reason 2	Reason 3
Higher tip temperature	**Increases in soldering time**	**Higher Sn content in the solder**

Tip erosion leads to cost increase!
Changes of tip shape due to tip erosion cause the imperfect soldering.
As a result, increases in times of tip changes and cost.

Numbers of tips used in one month

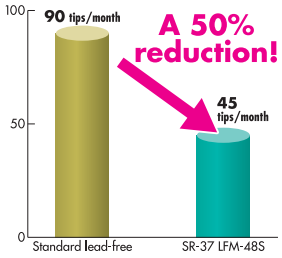


Development of the soldering system, such as the combination of flux and tip alloy, designed to minimize tip erosion

(Flux) **SR-37** + (Alloy) **LFM-48S (LFM-22S／LFM-41S)**

Perfect soldering at low temperatures	**Perfect soldering is achieved with less soldering operation time.**	**Additional metal has no effect on reliability and workability**

Numbers of tips used in one month

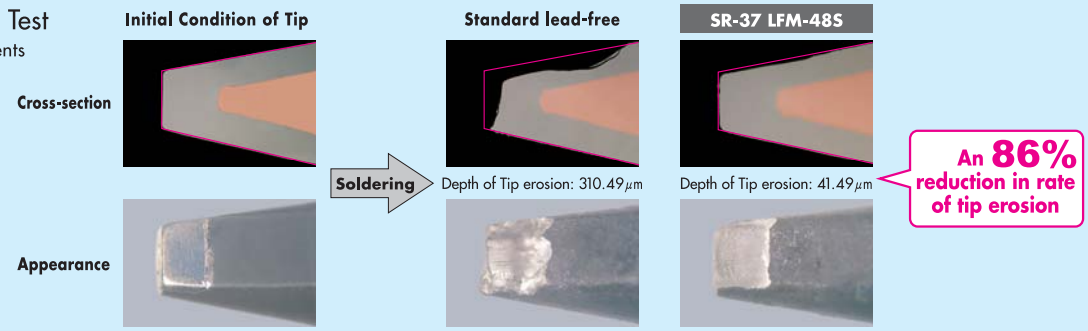


Cost reductions are achieved through reductions in the number of tip changes!

Tip Erosion Durability Test

[Condition] Depth measurements of tip erosion after 20,000 solder shots with different flux and alloys.

-Test Equipment: UNIX-412 made by Japan Unix.
-Solder Feeding Quantity 5mm/shot.
-Solder Feeding Speed: 10mm/shot.
-Solder Reverse Speed: 10mm/shot.



An **86%** reduction in rate of tip erosion

Product name component for Core Solders

(Example) SR-37 LFM-48S 3.5% 0.3Ø

Flux name; alloy type; flux content; core solder diameter

Core Solder products specification

Flux name	Alloy type	Flux content	Melting point temperature	Core solder diameter (mmØ)
SR-37 BT-19	LFM-48S (Sn-3.0Ag-0.5Cu-α)	3.5%	217-221°C	0.3、0.38、0.5、0.65、0.8、1.0、1.2、1.6
	LFM-22S (Sn-0.7Cu-α)	3.5%	227-228°C	0.5、0.65、0.8、1.0、1.2、1.6
	LFM-41S (Sn-0.3Ag-2.0Cu-α)	3.5%	217-270°C	0.5、0.65、0.8、1.0、1.2、1.6

*LFM-48S has been sublicensed for US PAT No. 6231691B1. Alloy LFM-48S is compatible with other fluxes such as SR-34 Super. *SR-37 LFM-41S is effective in minimizing Cu erosion.
*If the ordered core solder diameter is out of stock, please contact with our sales representative.

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