



SOLDER PASTE SP2200 SN63-90-4

Tin/Lead No-Clean solder paste

PRODUCT DESCRIPTION

The solder paste SP2200 SN63-90-4 is characterised not only by excellent application properties, but also by low and clear residues and a very low tendency to form solder balls. It contains a highly active type L No-Clean flux. With a special formula for excellent wetting, it meets the requirements of high volume production where components and PCBs often have less than optimal solderability. It meets the requirements of current test standards and is therefore ideally suited for all applications in SMT and hybrid technology.

PRODUCT PROPERTIES

This solder paste offers the following advantages:

- suitable for fine pitch up to 0.4 mm
- very good first print after longer printer downtime
- reflow under air or nitrogen possible
- very good wetting on all common surfaces used in the electronics, additionally on Ni and Pd
- application temperature for print and pick and place 20-32 °C
- high tackiness for use on high-speed placement machines
- very good performance for large area soldering

APPLICATION

The solder paste SP2200 in alloy Sn63 with particle size 4 can be used for every application, where tin lead based alloys are still allowed or required. The particle size 4 allows to reduce the aperture size for components which require smaller landing pads.

The solder paste SP2200 SN63-90-4 contains a homogeneous mixture of oxide-free soft solder powder and an organic gel paste flux based on synthetic resin, which is characterised by excellent printing properties, good slump behaviour, long open time in the printing process and high temperature stability. After adding solder paste to the printer, the jar must be carefully resealed immediately to prevent premature drying. Any solder paste that has already been used on the printer, must be stored separately.

Recommendation for solder paste printing:

1. Use always the thinnest possible stencil thickness.
2. Use always stencils with rounded corners, to reduce clogging of apertures to the lowest possible minimum.
3. Set the squeegee pressure to 1 kg for each 5 cm of squeegee length. Then reduce the pressure step by step, till the solder paste starts smearing on the stencil. Then add 1 kg to the squeegee pressure and check, that the solder paste leaves no residues after printing on the surface of the stencil. Evaluate this parameter at your desired print speed.
4. Optimum print results can be achieved at print speeds between 10-75 mm sec⁻¹.
5. Please ensure a perfect sealing between PCB and stencil. The PCB must have the best possible underside support, to achieve the optimum sealing to the stencil. This ensures that the solder paste cannot be printed between pads and stencil. This avoids solder balling.
6. Printer down times up to 60 min can be achieved. The following first print after 1 h should give good filling of apertures and a good print result.

REFLOW PROCESS

SP2200 Sn63 solder paste shows good wetting results in all reflow processes with and without nitrogen. The recommended solder profile is a non linear (with soak area) profile. However, depending on the solder and the amount of paste applied, a linear profile can also be used. The peak temperature should be between 215 and 225 °C on the top side of the PCB, and a soldering profile with a total duration of maximum 6 minutes should be used. If a non-linear (soak) profile is used, the temperature in the preheat area should not exceed 120 sec. at max. 200 °C.

CLEANING

Stannol SP2200 Sn63-90-4 was developed as a No-Clean solder paste. This means that there is no need to remove the residues. If extremely high electrical safety is required, SIR Tests and ionic contamination measurements can help to decide whether cleaning is necessary. If cleaning is required, the residues can be removed in conventional cleaning processes. For cleaning, Stannol cleaner Flux-Ex Post is recommended.

TECHNICAL SPECIFICATION

Solder powder: The solder powder for Stannol SP2200 Sn63-90-4 solder pastes is produced by atomizing alloys conforming to the purity requirements of J-STD-006, EN 29453 or other national and international standards where relevant. Careful control of production processes ensures exact solder powder particle distribution in a spherical shape.

GENERAL PROPERTIES	SP2200 Sn63-90-4
Alloy:	Sn63 Pb37
Melting range, °C:	183
Metal content, %:	90
Solder powder, µm:	20-38
Application:	stencil printing

TESTS	SPECIFICATION	RESULT
Copper mirror corrosion:	ANSI J-STD-004B	pass
Copper corrosion	ANSI J-STD-004B	pass
Surface insulation resistance (without cleaning):	ANSI/J-STD-004B - IPC-TM650	pass
	JIS-Z-3284 85 °C/85 % rF	pass
	JIS-Z-3284 40 °C/90 % rF	pass
	DIN IEC 61189	pass
	Bellcore GR-78-Core [1997]	pass
Electromigration:	IPC-SF-818 / ANSI J-STD-004	pass
Solder balling:	after 1 h at RT	pass, class 1
	after 24 h at RT	pass, class 1
Tackiness:	JIS-Z-3284	at least 100 g after 24 h
Content of Chlorine	IPC-TM-650	< 20 ppm
Content of Bromides	IPC-TM-650	< 20 ppm
Silver chromate paper test (presence of halides)	ANSI/J-STD 004 / QQS-571	pass
Flux Activity Classification (without cleaning):	DIN 29454-1 ANSI J-STD-004	1.2.2.C RELO

PACKAGING

Stannol SP2200 Sn63-90-4 solder paste is supplied in:

- 500 g plastic jars

Other forms of packaging are available on request, probably subject to minimum order quantities.

STORAGE AND SHELF LIFE

Providing SP2200 solder pastes are stored at 2-8 °C tightly sealed in the original container, this solder paste has a minimum shelf life (from date of production) of 6 months in 500 g jars. Please let the solder paste after storage allow recovering to room temperature before opening the jar for at least 8-12 h to avoid condensation of humidity on the solder paste surface after opening the jar and during the printing process.

HEALTH AND SAFETY

Before using please read the safety data sheet carefully and observe the safety precautions described.

DISCLAIMER

The above values are typical and represent no form of specification. The Data Sheet serves for information purposes. Any verbal or written advise is not binding for the company, whether such information originates from the company offices or from a sales representative. This is also in respect of any protection rights of third parties, and does not release the customer from the responsibility of verifying the products of the company for suitability of use for the intended process or purpose. Should any liability on the part of the company arise, the company will only indemnify for loss or damage to the same extent as for defects in quality.