STANNOL

SOLDER WIRES	**SOLDER PASTES**	FLUXES	SOLDER BARS
SOLDERING EQUIPMENT	MEASUREMENT AND TESTING SYSTEMS	CONFORMAL COATINGS	ACCESSORIES

SOLDER PASTES

FOR ELECTRONICS MANUFACTURING

WE HAVE THE RIGHT SOLDER PASTE FOR EVERY APPLICATION.

BOTH LEADED AND LEAD-FREE SOLDER PASTES ARE USED IN ELECTRONICS – FOR REFLOW SOLDERING AND REWORK SOLDERING PROCESSES.

Stannol supplies both lead containing and lead-free solder pastes in various particle sizes and packaging (e.g. jars and cartridges) for a wide range of application. We offer eutectic silver containing, low-silver and silver-free solder pastes specifically developed for lead-free applications.

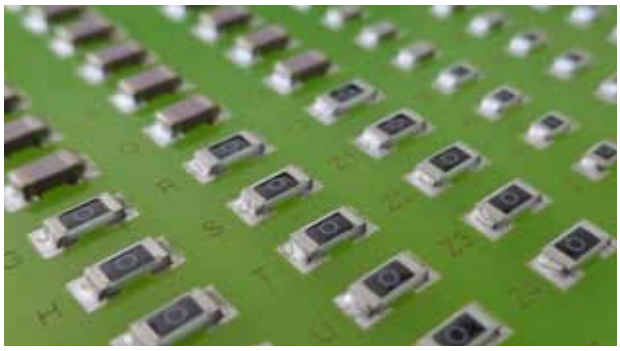
This brochure features some popular solder pastes, as well as several new developments for use in SMT manufacturing. Please do not hesitate to contact us for further details about additional solder pastes in our portfolio.

LEAD-FREE SOLDER PASTES

The No-Clean solder pastes **SP2100** and **SP2200** were developed for use with lead-free alloys in stencil printing. In addition to the long open time, even after long printer down times, both pastes immediately show a perfect print definition. Due to activation as a type L1 flux, SP2100 solder paste is more suitable for use on surfaces that are difficult to solder. This paste achieves good wetting and soldering results.

No-Clean SP2200 solder paste, by contrast, is activated to type L0. This activation ensures good wetting combined with a high level of electrical safety on all surfaces used in electronics today. Both solder pastes leave only small amounts of residues after the reflow process, which are bright and transparent and do not have to be removed.

The established **SP318** solder paste can be used for stencil printing and a variety of dispensing processes. This L0-type activated flux meets all requirements for good wetting on all common surfaces in electronics manufacturing. The paste demonstrates great resistance to high humidity during application in the printer. Due to the large process window, it can be reflowed in both air and nitrogen. The soft and clear flux residues are suitable for in-circuit testing.



SP2400 solder paste achieves low residues and good wetting.

The lead-free **SP2400** solder paste was developed to meet various requirements of our customers today and in future. During the development of this No-Clean solder paste, special emphasis was placed on the following features: very low void formation, long open time in the printer, high print-to-print consistency, minimum residues, compatibility with low silver content alloys, maximum tackiness and high electrical safety of the residues. The development also focused on safe wetting on the widest variety of surfaces and its varying supply qualities. The result is a solder paste that effectively combines these features and can thus meet the quality standards required in electronics manufacturing with an optimum price-performance ratio.

SOLDER PASTE FOR DISPENSING

For dispensing applications we offer the **SP651M** solder paste in lead-free alloy TSC305 (Sn96.5Ag3.0Cu0.5) as a standard product. This solder paste has been designed for reliable automatic dispensing processes with inner dispensing needle diameters down to 0.4mm in particle size 3. The flux medium is classified as ROL0 according to J-STD-004. It is a halide ZERO formulation and shows a good process window due to its well- balanced activity. This solder paste leaves only minor amounts of clear and transparent residues.

ANTI-TOMBSTONE

The tombstone effect describes the uplift of smaller components in the reflow process. Due to specially developed solder pastes, adjusted temperature profiles and optimised pad geometry, this effect can be significantly reduced.

VOIDS

The term voids refers to the appearance of gaseous inclusions in the solder, or among large surface area components (e.g. QFN, BGA). These inclusions can be reduced by suitable solder pastes, adjusted temperature profiles and special stencil apertures.

NEW SP2500 SOLDER PASTE

The main drivers to develop the **SP 2500** have been defined being the requirements to significantly reduce if not eliminating voiding and contemporary avoid solderballing. Even with large area paste deposits or thermal pad bonding the SP 2500 proves significant characteristics to exceed the IPC defaults as well as a comfortable process window.

The halogen free formulation of the REL0 flux is convincing at oxygen or nitrogen atmosphere with an uncompromising wetting and printability. To specially adress the enhanced challenges in fine pitch soldering the SP 2500 predominantly cocreates the scope of T4 powdersize. Operators with enhanced optical relevance will be more than satisfied with the improved transparency. To be used in soak and linear profiles our new solderpaste is equally effective. Available in TSC 305 alloy in powdersize 4 the capability for both profiles is given. Our experienced application team will be happy to help you on any questions or individual support.

The main drivers to develop the SP 2500 have been defined being the requirements to significantly reduce if not eliminating voiding and contemporary avoid solderballing.

LEAD CONTAINING SOLDER PASTES

SP1100 and **SP1200** solder pastes are only available with lead containing alloys. These pastes are distinguished by their classification and hence by their different wetting behaviour. While the SP1100 as a highly activated ROM1 solder paste can also achieve good soldering results on surfaces that are difficult to solder, the SP1200 as a ROL1 solder paste is designed for showing best results on good solderable surfaces. The residues of these two No-Clean solder pastes do not have to be removed.

The further leaded solder paste, **SP15 63S4** allow us to offer solutions to eliminate tombstones. By using combinations of alloys or a particular alloy in these solder paste, different approaches are selected in order to reduce the number of raised components. The choice of solder paste is only one aspect of removing defects. Layout, solder paste quantity and other manufacturing parameters are just as important to reduce tombstones. Nevertheless, the use of a suitable solder paste can support the safe overall reduction of defects, especially in increasingly smaller components.

OPEN TIME

The open time of a solder paste is made up of two parts: The useful time of the solder paste in the printer during the printing process and the open time of the printed circuit board between print, pick-and-place and reflow.

STORAGE

Stannol solder pastes have to be stored at 5–10°C and brought to room temperature at least two hours prior to use. This is due to the risk of condensation of moisture on the cold surface of the solder paste, which can cause thickening of the solder paste .

SOLDER PASTES OVERVIEW

NAME	ALLOY	CLASS [1]	MELTING RANGE	PARTICLE SIZE	METAL CONTENT	APPLICATION	PACKAGING SIZES [3]	ART.-NO.
SP15	Sn62.8Pb36.8Ag0.4 [2]	ROL1	179-183°C	3/5 (10-45 µm)	89.5%	stencil printing	500 g jar	690015
SP15	Sn62.8Pb36.8Ag0.4 [2]	ROL1	179-183°C	3/5 (10-45 µm)	89.5%	stencil printing	12 oz Semco	690017
SP318	Sn95.5Ag3.8Cu0.7	ROL0	217°C	3 (25-45 µm)	88.5%	stencil printing	500 g jar	690036
SP318	Sn95.5Ag3.8Cu0.7	ROL0	217°C	3 (25-45 µm)	88.5%	stencil printing	12 oz Semco	690037
SP1100	Sn62Pb36Ag2	ROM1	179°C	3 (25-45 µm)	90%	stencil printing	500 g jar	691100
SP1200	Sn62Pb36Ag2	REL1	179°C	3 (25-45 µm)	90%	stencil printing	500 g jar	691200
SP2100	Sn95.5Ag4Cu0.5	REL1	217-223°C	3 (25-45 µm)	88%	stencil printing	500 g jar	692100
SP2200	Sn95.5Ag4Cu0.5	REL0	217-223°C	3 (25-45 µm)	89%	stencil printing	500 g jar	692200
SP2200	Sn96.5Ag3Cu0.5	REL0	217-220°C	3 (25-45 µm)	89%	stencil printing	500 g jar	692210
SP2200	Sn96.5Ag3Cu0.5	REL0	217-220°C	4 (20-38 µm)	89%	stencil printing	500 g jar	692250
SP2200	Sn96.5Ag3Cu0.5	REL0	217-220°C	4 (20-38 µm)	89%	stencil printing	12 oz Semco	692252
SP2200	Sn99Cu0.7Ag0.3	REL0	217-227°C	3 (25-45 µm)	89%	stencil printing	500 g jar	692220
SP2300	Sn96.5Ag3Cu0.5	REL0	217-220°C	4 (20-38 µm)	89%	stencil printing	500 g jar	692350
SP2400	Sn96.5Ag3Cu0.5	REL0	217-220°C	3 (25-45 µm)	89%	stencil printing	500 g jar	692400
SP2400	Sn96.5Ag3Cu0.5	REL0	217-220°C	4 (20-38 µm)	89%	stencil printing	500 g jar	692450
SP2400	Sn98.5Ag1Cu0.5	REL0	217-224°C	3 (25-45 µm)	89%	stencil printing	500 g jar	692410
SP2500	Sn96.5Ag3Cu0.5	REL0	217-224°C	4 (20-38 µm)	89%	stencil printing	500 g jar	692550

SOLDER PASTE FOR DISPENSING								
SP651M	Sn96,5Ag3,0Cu0,5	ROL0	217-220°C	3 (25-45 µm)	84%	autom. dispensing	75 g / 30 cm^3 cartridge	690102

1 According to J-STD-004 | **2** Optimized against Tombstone-Effect | **3** Other packaging sizes are available on request

PACKAGING SIZES

The following packaging sizes are available as standard: **6 oz / 12 oz / 10 cm^3 / 30 cm^3 / 500 g jar.**

OUR SERVICE FOR YOU

This brochure only shows a limited selection of solder pastes and has therefore focused on our top sellers. Other pastes, as well as our new and innovative product selector, can be found at **www.stannol.de.** By selecting the category "Products", you can find the matching solder pastes according to many different criteria.

PARTICLE SIZE

Solder pastes contain metals in the form of spheric solder powder with a precisely defined diameter. The required diameter of the particles is determined by the size of the stencil. Standard solder pastes are generally available in particle sizes 3 (25–45 µm) and 4 (20–38 µm). Finer particle sizes, such as type 5 (15–25 µm) are only available in selected solder pastes.

CLASSIFICATION

The standards J-STD-004 and DIN EN 61190-1 are used to classify flux according to its composition. Fluxes are referred to, for example ROL0 or REL1. They are also rated according to the reliability and influence of the flux residues on the PCB during its life time. The difference between the two standards depends on the allowed amount of halogen within the flux, which determines the various classifications.

STANNOL

TRADITION UND INNOVATION.

SOLDERING TECHNOLOGY SINCE 1879 – MADE IN GERMANY


SOLDER WIRES


FLUXES


SOLDERING IRONS


SOLDER PASTES

ACCESSORIES


SOLDER BARS

STANNOL

STANNOL GmbH
Haberstr. 24, D-42551 Velbert
Phone: +49 2051 3120 -0, Fax: +49 2051 3120 -111
info@stannol.de, www.stannol.de