



# SOLDER PASTE SP2300D

Lead-free, halogen-free No-Clean solder paste RELO

## PRODUCT DESCRIPTION

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Stannol SP2300D solder paste has been developed for use with TSC305 (Sn96.5Ag3Cu0.5) alloy as the standard alloy. 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. The wetting properties have been optimised for all known lead-free PCB and component coatings. The small amounts of residue after reflow are electrically safe and do not need to be removed.

## PRODUCT PROPERTIES

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The product offers the following advantages:

- halogen-free formulation for use with lead-free alloys
- suitable for fine pitch up to 0.4 mm
- suitable for particle size 4 and 5
- reflow under air or nitrogen possible
- very good wetting on all surfaces
- high tackiness for use on high-speed placement equipment
- good dispensing properties

## APPLICATION

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**Paste dispensing:** SP2300D solder paste is designed for use with a variety of dispensing devices – from time/pressure dispensers to pinch valve dispensers or jet dispensers. With alloy TSC305 in solder particle size type 4 (20 to 38 µm) or 5 (15 to 25 µm), it can be applied to most dispensing systems available. SP2300D solder paste has an open time (time on the PCB) of at least 8 hours. During this time, the correct viscosity is maintained for sufficient tack of the components. The exact break-off time of the adhesive performance always depends on the environmental conditions in the respective production environment. If the time between paste application and reflow exceeds 6 hours, it is recommended to store the PCB in a closed container to prevent the paste from drying out. This is especially the case when the relative humidity is > 83 percent.

**Reflow profiles:** The reflow process can be performed under air or under nitrogen. Below, a typical temperature profile can be found that has shown good wetting results when used with SP2300 solder paste. However, other profiles can be used depending on the available equipment and solder. A linear reflow profile is recommended for this solder paste. If a saddle profile is used, the temperature during preheating should not exceed a time of 120 seconds at temperatures around 180 °C.



RECOMMENDED PROCESS WINDOW	MAX (RED)	MIN (BLUE)
peak temperature:	250 °C	230 °C
T>217 °C:	100 sec	30 sec
100 °C to 217 °C:	260 sec	130 sec

**Cleaning:** SP2300D has been developed as a No-Clean solder paste. This means that cleaning of the residues is not required. If extremely high electrical safety is to be ensured, surface insulation resistance measurements and ionic contamination measurements can help to make a decision on the need for cleaning. If cleaning is necessary, the residues can be removed in conventional cleaning processes. Recommendations for this can be provided if required.

## TECHNICAL SPECIFICATIONS

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**Solder powder:** The allowed impurities in this solder powder comply with ANSI/J-STD-006.

GENERAL PROPERTIES	
alloy:	Sn96,5 Ag3,0 Cu0,5 (ECOLOY TSC305)
melting range, °C:	217-220
metal content, %:	86
solder powder, µm:	20-38 (type 4) / 15-25 (type 5)
application:	automatic dispensing and manual dispensing

TESTS	SPECIFICATION	RESULT
copper corrosion:	ANSI/J-STD-004	pass
copper mirror corrosion:	ANSI/J-STD-004	pass
surface insulation resistance:	ANSI/J-STD-004 - IPC-TM650	pass
	JIS-Z-3284 85°C/85% rH	pass
	JIS-Z-3284 40°C/90% rH	pass
	DIN IEC 61189	pass
silver chromate paper test:	ANSI/J-STD 004 / QQS-571	pass
solder ball test:	after 1h at rt	pass, class 1
	after 24h at rt	pass, class 1
wet tack:	JIS-Z-3284	at least 100 g after 24h
open time:	In-lab specification	at least 8h at 23°C/65 % rH
class of flux activity:	DIN 29454-1	1.2.3.C
	J-STD-004	RELO

## DELIVERY FORMS

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Stannol SP2300D solder paste can be supplied in the following types of packaging:

- 10 cc= 40 g
- 30 cc= 110 g

Other types of packaging are also available on request. These may be subject to certain minimum purchase quantities.

## **STORAGE AND SHELF LIFE**

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At a storage temperature of 2 to 8°C, the minimum shelf life (from date of manufacture) is 3 months in the unopened original container. Solder paste in cartridges should be stored upright with the sealing cap of the dispensing opening facing downwards. If this is not possible, we recommend turning the cartridges stored horizontally by 180 degrees once a week to avoid separation. Allow the solder paste to warm up slowly for approx. 2 to 6 hours in the closed original container to room temperature before processing.

Opened cartridges (recommendation): maximum 16 hours at room temperature

Note: Opened cartridges should be used up within 7 days, provided that they have been cooled appropriately.

## **HEALTH AND SAFETY**

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Before first use, read the safety data sheet and follow the safety precautions.

## **DISCLAIMER**

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The data mentioned are typical values and do not represent a specification. The data sheet is for your information. Our technical application advice, both verbal and written, is non-binding, irrespective of whether it is provided by us or by one of our sales representatives – also with regard to any third-party property rights – and does not release our customers from their own examination of our products for their suitability for the intended processes and purposes. Should liability on our part nevertheless come into question, we shall only pay damages to the same extent as for material defects.