Solder Paste

LP 5707

No-clean, halide free, lead-free solder paste

Description

LP 5707 is a no-clean, halide free and lead-free solder paste that has been developed for soldering without nitrogen and long, high reflow profiles.

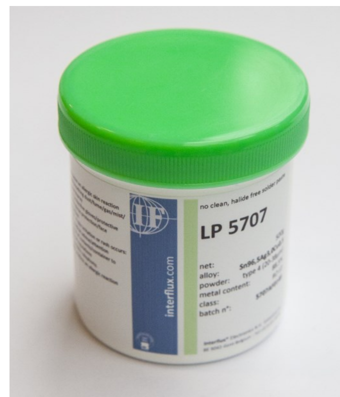
Additionally the solder paste exhibits extremely low tendency towards solder ball formation.

The absolutely halogen free soldering chemistry, used in **LP 5707** prevents dewetting when submitted to high temperatures or long profiles, also when soldering without nitrogen.

The solder paste keeps its rheological properties on the stencil for a long time, even under high or low humidity conditions.

Furthermore, the chemistry of **LP 5707** has been designed to minimize void formation.

LP 5707 is classified as **RO L0** according IPC and EN standards.



Products pictured may differ from the product delivered

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Key advantages:

- High and long profile resistant without nitrogen
- Prevents dewetting
- High stability on the stencil, also under more extreme atmospheric conditions
- Low solder ball formation tendency
- Low voiding
- Low transparent residue after reflow
- Absolutely halogen free

Availability

alloy	metal content	powder size	packaging
Sn96,5Ag3Cu0,5 Sn95,5Ag3,8Cu0,7 Sn95,5Ag4Cu0,5 Sn99Ag0,3Cu0,7 Sn98,5Ag0,8Cu0,7 Sn95,8Ag4,2 Sn99,3Cu0,7 Other alloys upon request	printing: 88,5% dispensing: 85%	Standard type 3 (25— 45µ) Type 4 and type 5 available for certain alloys	jars :250g/500g cartridges: 6Oz: 500g/600g/700g 12Oz: 1kg/1,2kg/1,3kg/1,5kg syringes : 5CC/10CC/ 30CC other packaging upon request

Reflow profile for SAC, SnCu and SnAg alloys

General

LP 5707 is designed to withstand long and high reflow profiles, also under atmospheric conditions without nitrogen. Both soak and ramp profiles are possible.

Soak profiles may be used when temperature differences across a board, due to a high mix of components or large board sizes, need to be levelled out or when voids, if present, need to be decreased.

In practice the reflow profile will be mainly determined by the thermal demand and physical properties/ limitations of the components and PCB. It is advisable to always consult the technical specifications of the components and PCB.

A correct profile measurement is also important. To get a good thermal mapping of the board it is advised to use thermocouples and a thermal measuring tool. Measure on small outline, big outline and temperature sensitive components. Measure on the board side near the conveyor chain, in the middle of the board and close to, or on heat sinks.

Profile recommendations (SnAgCu, SnCu and SnAg type alloys)

LP 5707 has a wide process window in reflow with few limitations. Below are a few examples of profiles that can be used. It is advisable to limit peak T° to 260°C and keep total profile length (from room to peak T°) below 8 minutes.

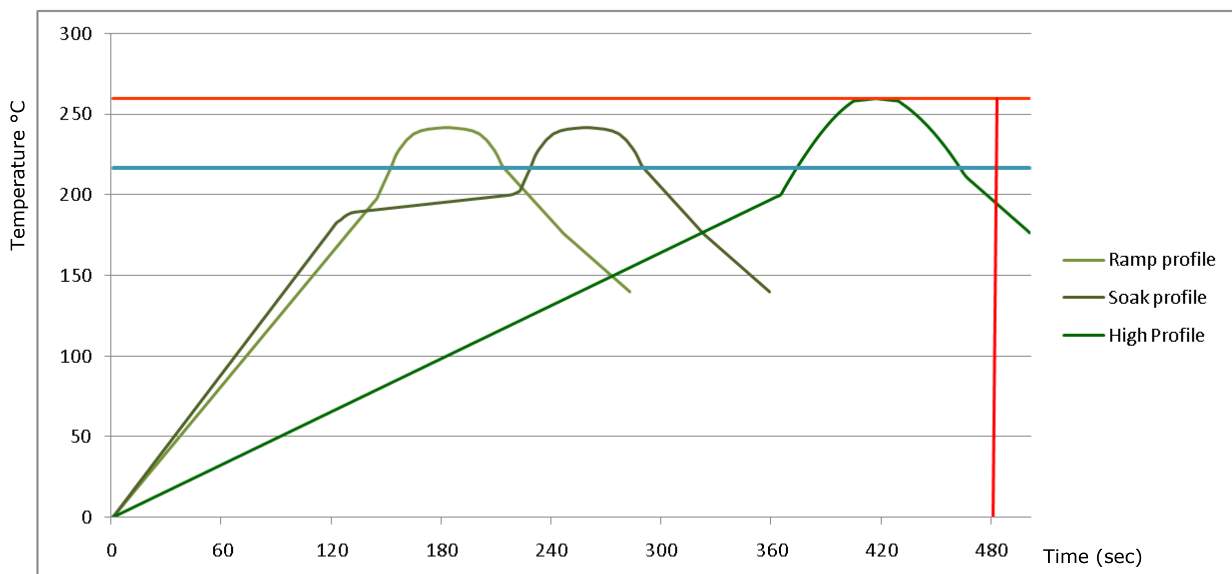
Preheat
From room temperature it is advisable to keep heating rate below 3°C/seconds. Higher heating rates could result in component cracking due to absorbed moisture.

Soak
Usually between 180°C—215°C and 0-120sec.

Reflow
Peak temperature is limited by component and board specifications. Minimum 10°C over alloy melting point is advised to get sufficient wetting. In general between 235°C and 250°C.

The time over melting point of the alloy is usually between 45 seconds and 90 seconds.

Cooling
Cooling rate below 4°C/sec because of differences in thermal expansion of the used materials.



Handling

Storage
Store the solder paste in the original packaging, tightly sealed at a preferred temperature of 3° to 7°C

Handling
Let the solder paste reach room temperature prior to opening the packaging. Stir well before use.

Printing
Assure good sealing between PCB and stencil. Apply no more than enough squeegee pressure to get a clean stencil. Apply enough solder paste to the stencil to allow smooth rolling during printing. Regular replenish fresh solder paste.

Maintenance
Set an under stencil clean interval which provides continuous printing quality. **IS-C8020** is recommended as cleaning agent in pre saturated wipes and USC liquid.

Reuse
Avoid mixing used and fresh paste. Do not put packages back into refrigeration when already opened.

Store used paste in a closed separate jar at room temperature. A test board before reusing in production is advisable

Safety
Please always consult the safety datasheet of the product.

Test results

conform IPC J-STD-004A/J-STD-005

Property	Result	Method
Chemical		
qualitative copper mirror	**pass**	J-STD-004A IPC-TM-650 2.3.32
halide content	**none**	J-STD-004A IPC-TM-650 2.3.28.1
silver chromate (Cl, Br)	**pass**	J-STD-004A IPC-TM-650 2.3.33
flux classification	**RO L0**	J-STD-004A
Environmental SIR test	**pass**	J-STD-004A IPC-TM-650 2.6.3.3

Property		Result	Method
Mechanical			
solder ball test	after 15min	**pass**	J-STD-005 IPC-TM-650 2.4.43
	after 4h	**pass**	J-STD-005 IPC-TM-650 2.4.43
wetting test		**pass**	J-STD-005 IPC-TM-650 2.4.45
slump test	after 15min at 25°C	**pass**	J-STD-005 IPC-TM-650 2.4.35
	after 10min at 150°C	**pass**	J-STD-005 IPC-TM-650 2.4.35

Operating parameter recommendations

Printing

speed:	20—150 mm/sec
squeegee pressure:	250g—350g/cm length
preferred temperature range:	15 to 25°C
preferred humidity range:	25 % to 90% r.H.

Mounting

tack time:	>8 hours

I.C.T

flying probe testable
pin-bed testable

Trade name : LP 5707 No-Clean, Halide Free, Lead-Free Solder Paste

D i s c l a i m e r

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