No-clean, Halide free, solder paste

Description

DP 5505 is a halide free solder paste for SnPbAg and SnPb alloys.

It has high resistance against moisture and elevated temperatures.

DP5505 is suitable for vapour phase soldering.

The solder paste has excellent slump and hot slump properties, minimising the risk on bridging, solder beading and solder balling in reflow.

DP 5505 shows excellent wetting and spreading on many board finishes including OSP.

The solder paste meets IPC 7095 voiding performance class 3 on lead-free alloys.

DP 5505 is halide free providing optimal reliability after soldering.

The residues after reflow are minimal and clear, they are easy to be penetrated by flying probe- and ICT -test pins.

Availability

alloy	metal content	powder size	packaging
Sn63Pb37 Sn62Pb36Ag2 ATK anti tombstone	printing: 88,5% - 90,5% dispensing: 85%	standard type 3 (25— 45µ) type 4 and type 5 available for certain alloys	500g jar 1kg—1,2kg—1,3kg in 12 Oz. cartridge 5cc— 10cc— 30cc syringe Other packaging upon request

More information:

Key advantages:

- High stability / High abandon time
- Wide process window
- Suitable for vapour phase soldering
- Good slump resistance
- Good wetting on HASL, Ni/Au, OSP Cu, I-Sn, I-Ag
- Low voiding
- Low residue after reflow
- Halogen free

Reflow profile for SnPb and SnPbAg alloys

General description

In general a soak profile is advised and 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 the number of voids, if present because of material combination, need to be decreased.

When soldering an assembly in a reflow process, care must be taken not to overheat components especially when using air convection or IR ovens. It is very important to know the temperature limitations of the components used on the board. 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

Preheat
From room temperature until about 120°C at a rate of 1-3°C/seconds.

Higher heating rates could result in component cracking due to absorbed moisture.

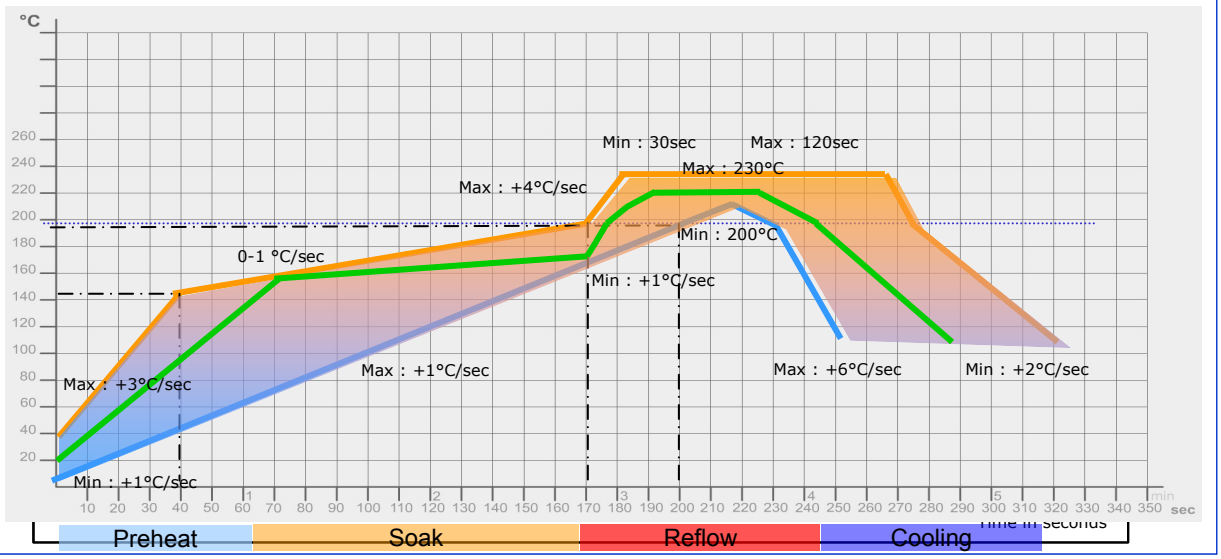
Soak
Between about 120°C and 170°C, a temperature holding soak zone is often used at a rate of 0°C/s - 1°C/s to level out differences on a board. It is often used on high mix boards or to reduce voids.

Ramp up to reflow

Maximum 4°C/s because of differences in thermal expansion of different materials on the PCB

Reflow
Peak temperature used is related to component specifications. In general between 200°C and 230°C. The time in liquidus (over melting point of the alloy used) could be between 45 seconds and 90 seconds.

Cooling
Cooling rate around -4°C/s because of differences in thermal expansion of different 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. **ISC8020** is recommended as cleaning agent in pre saturated wipes and USC liquid.

Reuse

Do not mix used and fresh paste. Do not put packages back into refrigeration when already opened. Store used paste in a separate jar at room temperature. A test board before reusing in production is advisable.

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	**0,0%**	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 IPC-TM-650 2.3.28.1
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

N.V. INTERFLUX® ELECTRONICS S.A. - Eddastraat 51—BE-9042 Gent
tel.: +32-9-251.49.59— fax.: +32-9-251.49.70
www.interflux.com

Operating parameter recommendations

Printing	
speed:	20—150 mm/sec
squeegee pressure:	250g—350g/cm
length	
U.S.C. interval:	every 10 boards
temperature range:	15°C to 25°C
Mounting	
tack time:	> 8 hours
Reflow	
reflow profile:	linear and soak
heating type:	convection, vapour phase, etc
I.C.T	
flying probe testable	
pin-bed testable	

D i s c l a i m e r

Interflux® Electronics N.V. cannot anticipate or control the many different conditions under which this information and our products may be used, Interflux® Electronics N.V. does not guarantee the applicability or the accuracy of this information or the suitability of our products in any given situation. Users of these products should make their own tests to determine the suitability of each such product for their particular purposes. The products discussed are sold without such warranty, either expressed or implied. Interflux® Electronics N.V. accepts no responsibility for personal injury, property damage, or other type of loss due to negligence or otherwise resulting from the use or handling of this material. Manufacturer's liability is limited to the net purchase price of this product or, at manufacturer's discretion, to the replacement of the product upon its return.

Product information in other European languages can be obtained at Interflux® Electronics NV, 9042 Gent.

For the latest version of this document please consult:
www.interflux.com