



# Solder paste

## DP 5600

INTERFLUX®  
ELECTRONICS N.V.



Technical data DP 5600

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### No-clean, halide free, solder paste for low melting point lead-free alloys

#### Description

**DP 5600** is a no-clean halide free solder paste for low melting point SnBi(Ag) alloys.

The solder paste is typically being used for soldering components with sensitivity to high temperatures, like e.g. LEDs, Elcos, components with plastic bodies, etc... Another field of use is the soldering of shieldings.

**DP 5600** provides good wetting and clean soldering results without the typical black spots.

The paste combines low voiding with a high stability on the stencil.

**DP 5600** is absolutely halogen free, providing optimal reliability after soldering.

The residues after reflow are minimal and clear.

**DP 5600** is classified as **RO LO** according IPC and EN standards.



Products pictured may differ from the product delivered



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#### Key advantages:

- High stability on the stencil
- Good wetting on many surface finishes
- Clean soldering result, no black spots
- Low voiding
- Low residue after reflow
- Absolutely halogen free

#### Availability

alloy	metal content	melting T°	powder size	packaging
Sn42Bi57Ag1	printing: 90% dispensing: 87%	139°C	standard type 3 (25— 45µ)  other types upon request	jars :250g/500g cartridges: 6Oz: 500g/600g/700g 12Oz: 1kg/1,2kg/1,3kg/1,5kg syringes : 5CC/10CC/ 30CC other packaging upon request
other alloys upon request				



## Reflow profile

### General

In general a ramp profile or a profile with limited soak is advised. Also soak 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.

The low melting temperature drastically reduces the risk on overheating.

However, when soldering an assembly using air convection or

IR, care must be taken not to overheat components. 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 for SnBi and SnBiAg alloys

### Preheat

From room temperature until about 120°C (248°F) at a rate of 1-3°C/seconds.

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

### Soak

Between about 100°C (212°F) and 120°C (248°F), 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.

### 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 alloy melting point. In general between 160°C (320°F) and 190°C (374°F). The time in liquidus (over melting point of the alloy used) could be between 30 seconds and 90 seconds.

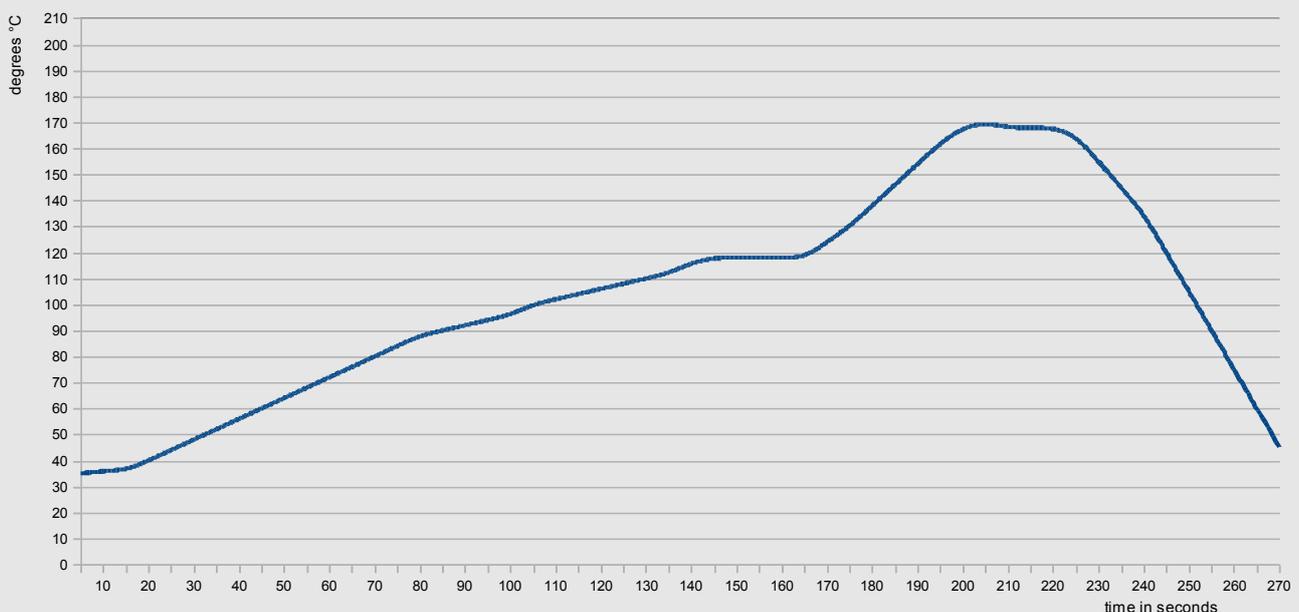
NiAu (ENIG) board finishes will require a

higher peak temperature to get nice and even solder joint cosmetics.

### Cooling

Cooling rate around -4°C/s because of differences in thermal expansion of different materials.

recommended reflow profile SnBi (Ag)





## Handling

### Storage

Store the solder paste in the original packaging, tightly sealed at a preferred temperature of 3° to 7°C. Shelf life 6 months.

### 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

Avoid mixing 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
<b>Chemical</b>		
qualitative copper mirror	pass	J-STD-004A IPC-TM-650 2.3.32
halide content	0,00%	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
<b>Environmental</b>		
SIR test	pass	J-STD-004A IPC-TM-650 2.6.3.3

Property	Result	Method
<b>Mechanical</b>		
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 15min at 25°C	pass	J-STD-005 IPC-TM-650 2.4.35
after 15min at 120°	pass	IF SLMP SnBi(Ag)



## Operating parameter recommendations

Printing  
speed: 25—100 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 (@23°C and 50% r.H.): >8 hours

Reflow  
reflow profile: linear and soak  
heating type: convection, vapour  
phase, etc

Residue after reflow: 5% w/w

Trade name: DP 5600 No-Clean, Lead Free Solder Paste

D i s c l i m e r

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