RoHS compliant 2002/95/EC

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

Description

DP 5505 is a no-clean, halide free and lead-free solder paste that has been designed to minimize the 'hidden pillow' defect on bga's.

It has high resistance against moisture and elevated temperatures.

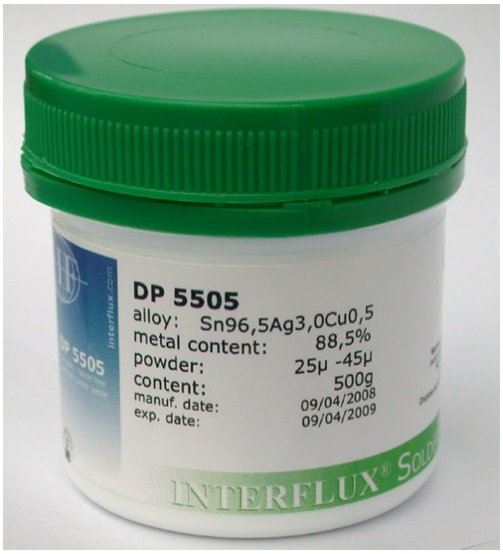
The rheology of **DP 5505** allows for very fast printing speeds, even on small apertures and is excellent for Pin in Paste applications.

Furthermore, the chemistry of **DP 5505** has been designed to minimize void formation. It meets IPC 7095 voiding performance class 3.

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.

DP 5505 is classified as **RO L0** according IPC and EN standards.



Availability

alloy	metal content	powder size	packaging
Sn96,5Ag3Cu0,5 Sn95,5Ag3,8Cu0,7 Sn95,5Ag4Cu0,5 Sn99Ag0,3Cu0,7 Sn98,5Ag0,8Cu0,7 Sn96,5Ag3,5 Sn95,8Ag4,2 Sn99,3Cu0,7	printing: 88-89% 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

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Key advantages:

- High stability / High abandon time
- Optimised formula to prevent the 'hidden pillow' defect on bga's
- Wide process window
- Low voiding
- Low residue after reflow
- Absolutely halogen free

Reflow profile for SAC, SnCu and SnAg alloys

General

In general a profile with limited soak is advised. Also ramp profiles and 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 or when voids, if present, need to be decreased.

When soldering an assembly in a lead free solder 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.

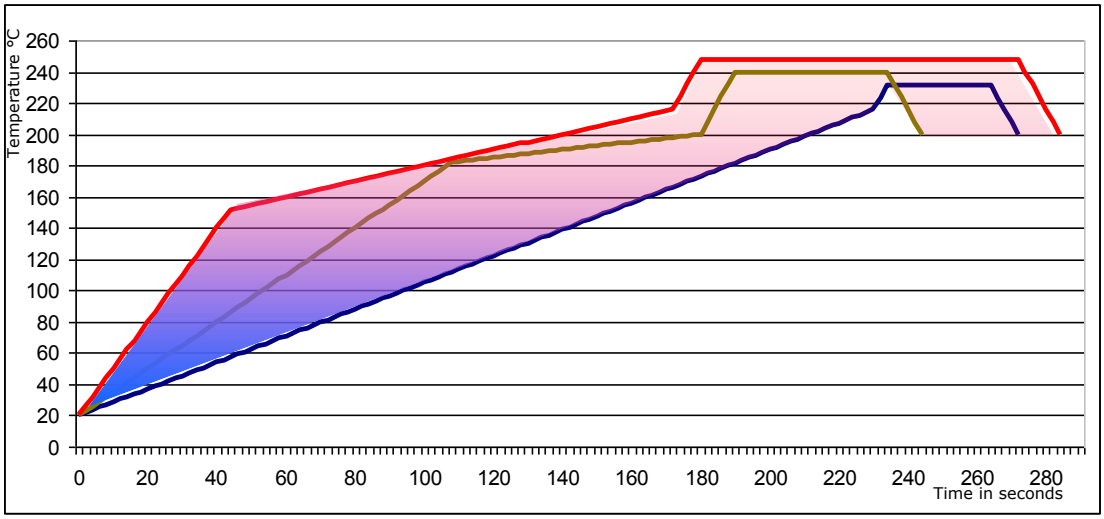
Profile recommendations (SnAgCu, SnCu and SnAg type alloys)

Preheat
From room temperature until about 200°C at a rate of 1-3°C/ seconds.
Higher heating rates could result in component cracking due to absorbed moisture.

Soak
From 180°C to about 200°C at a rate of 0-1° C/seconds.
In some cases a temperature holding soak zone is used to level out differences on a board. It is often used on high mix boards or to reduce voids in certain lead free processes. A 30-90 sec soak between 180°C and 200°C is often used for this purpose.

Reflow
Peak temperature used is related to component specifications. In general between 235°C and 250°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/ second because of differences in thermal expansion of different materials



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www.interflux.com

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.

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
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

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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 to 25°C
humidity range:	40% to 75% r.H.

Mounting

tack time:	>8 hours

Reflow

reflow profile:	linear and soak
heating type:	convection, ...

I.C.T

flying probe testable
pin-bed testable

Viscosity

- Brookfield (T-spindle 5 rpm@20°C): 700 000 - 1 000 000 cPs
  (88,5% metal content)

Cleaning

Cleaning of the paste from stencils and tools is recommended with Interflux® **ISC 8020.**

The residues after refllow of DP 5505 are very reliable and don't need to be cleaned, however they can be cleaned if desired.

A compatibility list between Interflux® products and Zestron® cleaning products is available at Interflux.

Trade name : Interflux® DP 5505 No-Clean, Halide Free, Lead Free Solder Paste

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

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