



Water soluble solder paste WSP 2006

INTERFLUX®
ELECTRONICS N.V.



Technical data WSP 2006

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Water soluble, halide free solder paste

Description:

WSP 2006 is a halide free, water soluble solder paste specifically designed for surface mount assembly and reflow.

As water soluble soldering chemistry is sensitive to high moisture and high temperature, it is advisable to keep R.H. below 60% and temperature below 30°C. Time between printing and soldering should be kept as small as possible.

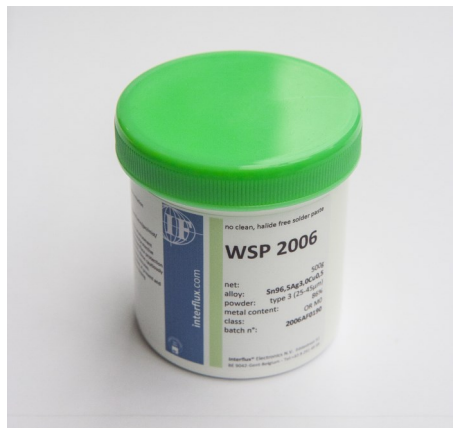
WSP 2006 provides good rheological properties and acceptable stencil stability which allow for a large printing process window.

The solder paste exhibits good wetting on most surface finishes.

WSP 2006 is absolutely halide, resin and rosin free.

The residue can easily be cleaned with warm water without adding saponifier agents. Cleaning is necessary.

WSP 2006 is classified as ORM0 to IPC and EN standards .



Products pictured may differ from the product delivered



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Key advantages:

- Absolutely halogen free
- Tack life > 4 hours*
- Good wetting on most surface finishes
- Residue easily cleanable with warm water

* test conditions upon request

Availability

alloy	metal content	powder size	packaging
Sn96,5Ag3Cu0,5	printing: 86%	Standard type 3 (25— 45µ)	jars :250g/500g cartridges:
Sn95,5Ag3,8Cu0,7			
Sn95,5Ag4Cu0,5	dispensing: 83%	Type 4 and type 5 available for certain alloys	6Oz: 500g/600g/700g
Sn99Ag0,3Cu0,7			12Oz: 1kg/1,2kg/1,3kg/1,5kg
Sn98,5Ag0,8Cu0,7			syringes : 5CC/10CC/ 30CC
Sn95,8Ag4,2			other packaging upon request
Sn99,3Cu0,7			
Other alloys upon request			



Reflow profile

General description

Both linear and soak profiles are possible. A soak profile 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 in air the profile's peak temperature should occur within a frame time of maximum 300sec or 5 minutes from the profile's starting point.

The correct conveyor speed (m/min) can be calculated by dividing the total chamber length (m) of the heating zones by the desired process time (min). Soldering under nitro-

gen has fewer limitations.

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 SAC, SnAg and SnCu alloys

Preheat

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

Soak

From 180°C to about 215°C at a rate of 0-1°C/s. In some cases a soak zone is used to level out temperature differences on a board or to reduce voids. A 20-90s soak between 200°C and 215°C is

often being used for this purpose.

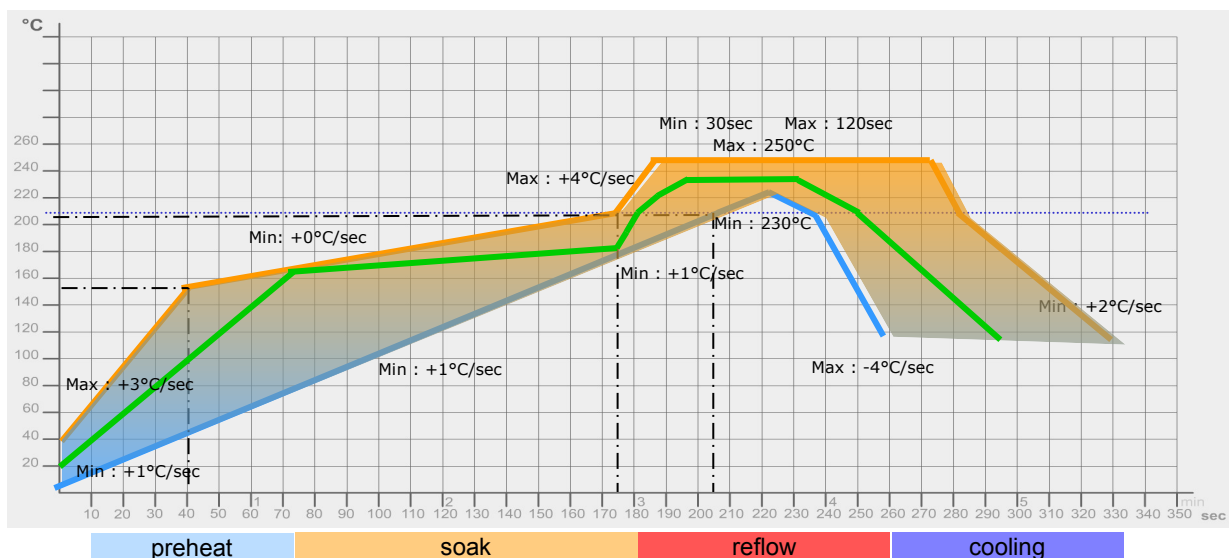
Reflow

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 45s and 90s.

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

Water soluble chemistry is sensitive to moisture and temperature. Try to keep R.H below 60% and temperatures below 30°C if possible. Don't leave solder paste on the stencil when not necessary. 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.

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 the paste before reuse.

Cleaning

Cleaning is necessary and can be done with warm water at 30°C – 50°C (86°F-122°F) with or without the addition of a saponifier agent. A final rinse with DI-water is necessary.

Test results

conform EN 61190-1-2(2002) and IPC J-STD-004A/J-STD-005

Property	Result	Method
Chemical		
qualitative copper mirror	pass	J-STD-004A IPC-TM-650 2.3.32
qualitative halide		
silver chromate (Cl, Br)	pass	J-STD-004A IPC-TM-650 2.3.33
spot test (F)	pass	J-STD-004 IPC-TM-650 2.3.35.1
Environmental		
SIR test	pass	J-STD-004A IPC-TM-650 2.6.3.3

Property	Result	Method
Mechanical		
slump test	at 22°C 0,63mm pad	pass J-STD-005 IPC-TM-650 2.4.35
	0,33mm pad	pass J-STD-005 IPC-TM-650 2.4.35
	0,22mm pad	pass J-STD-005 IPC-TM-650 2.4.35
	at 150°C 0,63mm pad	pass J-STD-005 IPC-TM-650 2.4.35
	0,33mm pad	pass J-STD-005 IPC-TM-650 2.4.35
	0,22mm pad	pass J-STD-005 IPC-TM-650 2.4.35
wetting test	pass	J-STD-005 IPC-TM-650 2.4.45



Operating parameter recommendations

Printing
speed: 20—70mm/sec
squeegee pressure: $\pm 250g$ / cm length
U.S.C. interval: every 10 boards
temperature range: 15°C to 25°C

Mounting
tack time: > 4 hours

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

I.C.T
flying probe testable
pin-bed testable

Trade name : WSP 2006 Water Soluble Solder Paste

D i s c l a i m e r

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