



# 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:

**Interflux<sup>®</sup> WSP 2006** is a halide free, water soluble solder paste specifically designed for surface mount assembly.

The solder paste is available in both lead-free and lead containing alloys.

**WSP 2006** provides good rheological properties, which allow for a large printing process window and the solder paste shows high stencil stability which allows for prolonged open times.

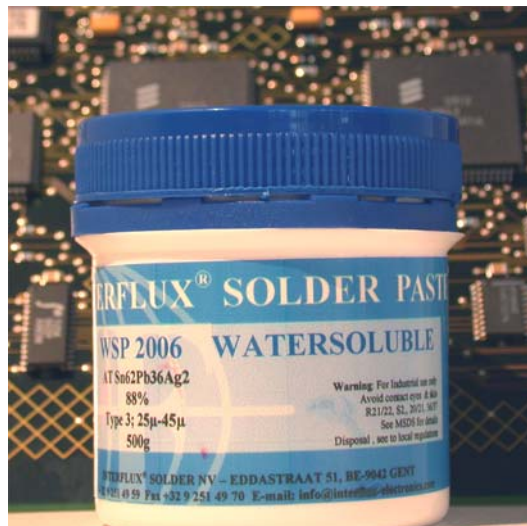
**WSP 2006** exhibits good wetting on virtually all surface finishes including OSP, NiAu, I-Sn...etc.

The chemistry is halide and rosin-free for complete water solubility.

The residue can be cleaned easily in warm water without adding saponifier agents.

Cleaning is necessary.

**WSP 2006** is available in both lead free and lead bearing alloys



### More information:

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### Key advantages:

- True halogen free
- Tack life > 12 hours\*
- Classification to IPC and EN: **OR MO**
- Excellent wetting on Sn/Pb, Ni/Au, OSP, Ag/Pd
- Residue easily cleanable with warm water

\* test conditions upon request

## Availability

alloy	metal content	powder size	packaging
Sn95,5Ag4Cu0,5	Lead free	Standard type 3 (25— 45µ)	500g jar
Sn96,5Ag3Cu0,5	printing: 86% dispensing: 83%	other sizes upon request	500g in 6Oz. Cartridge
Sn96,5Ag3,5			1kg—1,2kg—1,3kg in 12 Oz. cartridge
Sn63Pb37	Lead bearing		5—10—30cc syringes
Sn62Pb36Ag2	printing: 88% dispensing: 85%		PuckPack™ and ProFlow™ cassettes
SnPbAg — AT			



## Reflow profile

### 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 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 nitrogen 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 SnPb and SnPbAg alloys

### Preheat

From room temperature until  $\pm 150^{\circ}\text{C}$  at a rate of 1-3  $^{\circ}\text{C}/\text{s}$ . Faster rates could result in component cracking due to absorbed moisture evaporating.

zone is used to level out temperature differences on a board. It is often used in IR ovens and on boards with a big diversity of components and Cu distribution.

### Ramp to reflow

From  $150^{\circ}\text{C}$  to peak temperature.

Maximum  $4^{\circ}\text{C}/\text{s}$  because of different thermal expansion coefficients inside the components.

### Reflow

Peak temperature related to component specifications, in general from 205-

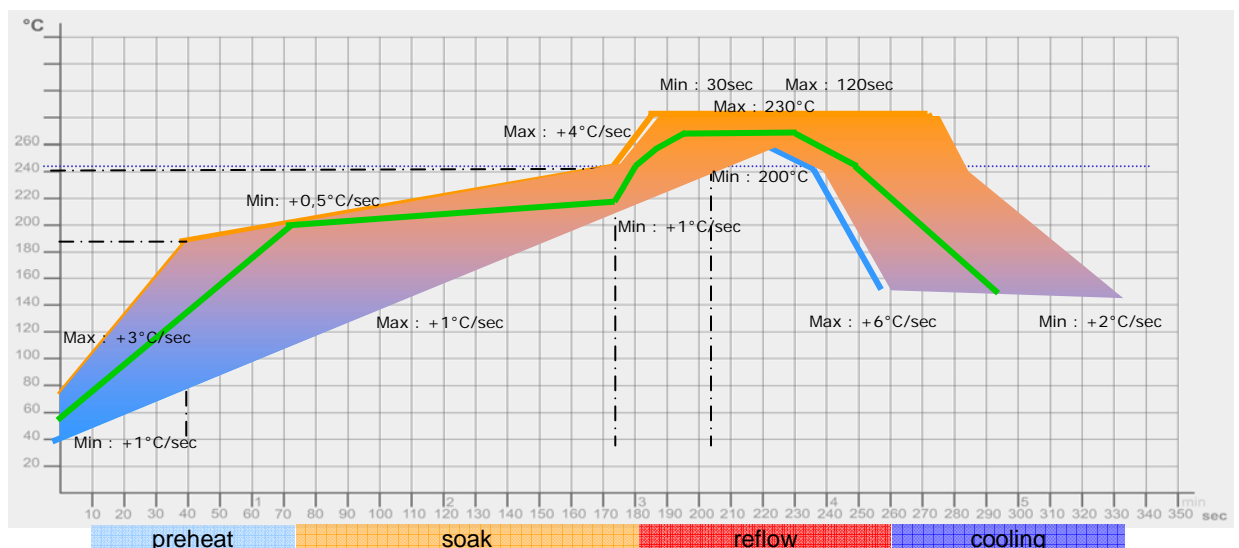
$230^{\circ}\text{C}$ . Time above liquidus: In general 30s-90s

### Cool down

Maximum  $4^{\circ}\text{C}/\text{s}$  because of different thermal expansion coefficients of the materials involved.

### Soak zone

Around  $150^{\circ}\text{C}$ . A soak





## Profile recommendations SAC and SnAg alloys

### Preheat

From room temperature until  $\pm 150^{\circ}\text{C}$  at a rate of 1-3  $^{\circ}\text{C/s}$ . Faster rates could result in component cracking due to absorbed moisture evaporating.

### Soak zone

Around  $170^{\circ}\text{C}$ . A soak

zone is used to level out temperature differences on a board. It is often used in IR ovens and on boards with a big diversity of components and Cu distribution.

### Ramp to reflow

From  $170^{\circ}\text{C}$  to peak temperature.

Maximum  $4^{\circ}\text{C/s}$  because of different thermal expansion coefficients inside the components.

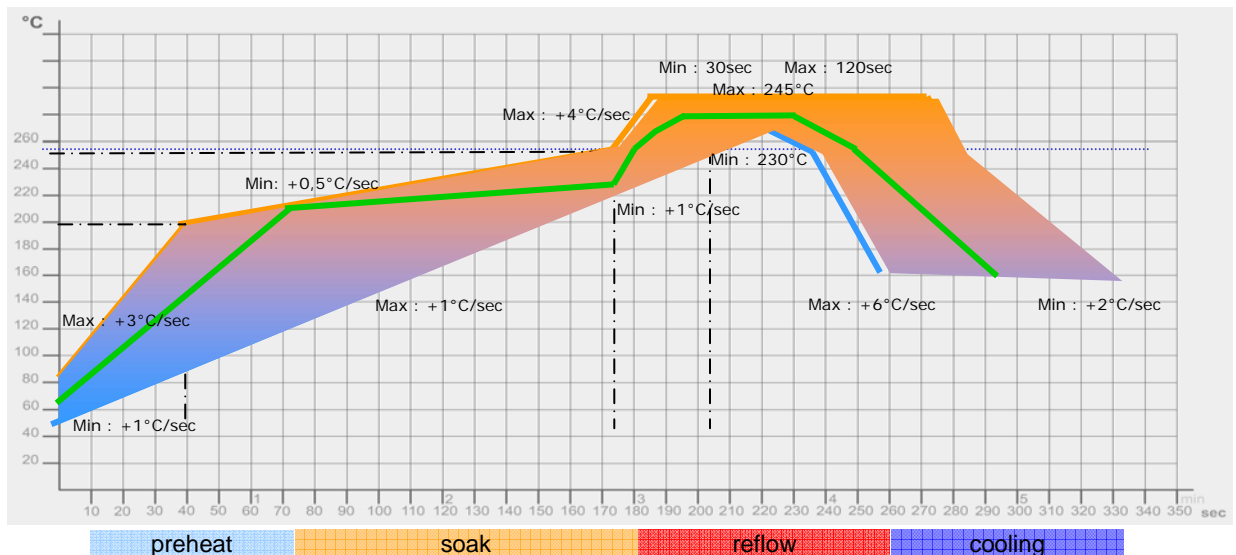
### Reflow

Peak temperature related to component specifications, in general from  $230^{\circ}\text{C}$ -

$245^{\circ}\text{C}$ . Time above liquidus: In general 30s-90s

### Cool down

Maximum  $4^{\circ}\text{C/s}$  because of different thermal expansion coefficients of the materials involved.





## 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

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.

### Reflow

Consult profile

## Test results

conform EN 61190-1-2(2002) and 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
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
<b>Environmental</b>		
SIR test	pass	J-STD-004A IPC-TM-650 2.6.3.3

Property	Result	Method
<b>Mechanical</b>		
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:  $\pm 250$ g / 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

Cleaning  
with warm water (50°C—122°F) with or with-

out the addition of a saponifier agent,  
final rinse with IPA (isopropyl alcohol).

D i s c l a i m e r

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