



Lead-Free No Clean Solder Paste

Features:

- For Use with Demanding High Density Electronic Assemblies
- Extremely Stable Formula
- Reduces Voiding on QFN Ground Pads
- ROL0 per J-STD-004
- Reduced Head-in-Pillow
- Extended Pause-to-Print Process Window
- Improved Printing Characteristics
- REACH Compliant

Description:

NC520 is designed for the most demanding high density electronic assemblies. NC520 has been developed to offer excellent wetting, improved printing and to reduce voiding. The superior wetting ability of NC520 results in bright, smooth and shiny solder joints with SAC alloys. An innovative activator system offers excellent wetting in a wide range of profiles. Enhanced wetting will reduce voiding on QFN ground planes, LGA and BGA interconnects. NC520 consistent transfer efficiencies reduce head-in-pillow (HiP) even when component/substrate co-planarity is not optimal.

Printing:

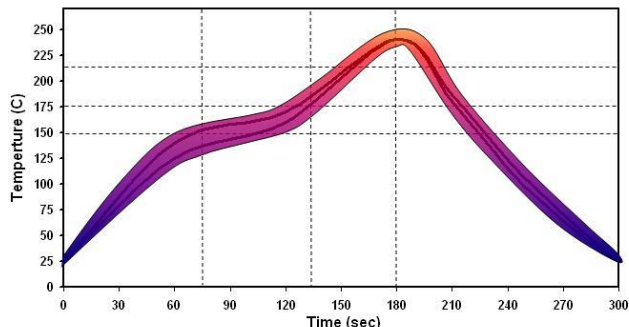
- Apply sufficient paste to the stencil to allow a smooth, even roll during the print cycle. A bead diameter of 15-20mm (index finger) is sufficient.
- The application of small amounts of fresh solder paste to the stencil at controlled intervals will maintain paste chemistry rather than one large deposit over an extended period of time.
- NC520 is formulated to maintain excellent transfer efficiency after extended pauses, however, a knead cycle after pauses longer than 60 minutes will improve performance.
- Cleaning of your stencil will vary by application; however, if solvent is required use of AIM DJAW-10 stencil cleaner, either by hand or in automated stencil cleaners is preferred.
- Isopropyl Alcohol (IPA) is NOT recommended for cleaning stencils during the printing process.

RECOMMENDED INITIAL PRINTER SETTINGS BELOW ARE DEPENDENT ON PCB AND PAD DESIGN			
<i>PARAMETER</i>	<i>RECOMMENDED INITIAL SETTINGS</i>	<i>PARAMETER</i>	<i>RECOMMENDED INITIAL SETTINGS</i>
Squeegee Pressure	0.9 - 1.5 lbs/inch of blade	PCB Separation Distance	0.75 - 2.0 mm (.030-.080")
Squeegee Speed	0.5 - 6 inches/second	PCB Separation Speed	3.0 - 20.00 mm/second
Snap-off Distance	On Contact 0.00 mm (0.00")		

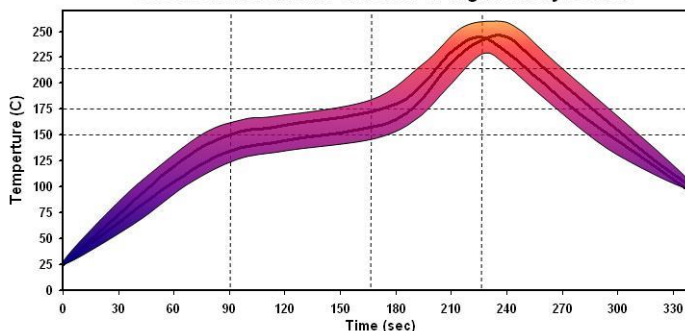
Reflow Profile:

Below are general guidelines for a Ramp-to Spike (RTS) and a Ramp-Soak-Spike (RSS). Key differences are time to peak temperatures, and time above liquidus (TAL). The shorter profile is appropriate for low-medium thermal mass assemblies. The longer profile would apply to high mass assemblies, such as backplanes and high-thermal density boards. The extended time and temperature of an RSS profile are needed to minimize the ΔT of a high mass board. The shaded area defines the process window for NC520. Oven characteristics, board mass/density, component type and IPC Acceptance Class all influence the final profile settings. These profiles are general guidelines and profile measurements with properly attached thermo-couples are highly recommended. For processing assistance, please contact AIM Technical Support by visiting <http://www.aimsolder.com/technical-support-contacts>.

SAC305 Reflow Profile Window For Low Density Boards



SAC305 Reflow Profile Window For High Density Boards



<i>RATE OF RISE 2°C / SEC MAX</i>	<i>RAMP TO 150°C (302°F)</i>	<i>PROGRESS THROUGH 150°C-175°C (302°F-347°F)</i>	<i>TO PEAK TEMP 230°C-245°C (445°F-474°F)</i>	<i>TIME ABOVE 217°C (425°F)</i>	<i>COOLDOWN ≤ 4 °C / SEC</i>	<i>PROFILE LENGTH AMBIENT TO COOL DOWN</i>
Short Profiles	≤ 60 Sec	15-45 Sec	45-75 Sec	45-60 Sec	45± 15 Sec	2.75-3.75 Min
Long Profiles	≤ 90 Sec	60-90 Sec	45-60 Sec	45-75 Sec	45± 15 Sec	4.0-5.0 Min

Cleaning:

- Cleaning NC520 is not required; however, it can be cleaned if necessary with saponified water or an appropriate solvent cleaner.
- Please contact AIM Technical Support for specific cleaner compatibility test results at <http://www.aimsolder.com/technical-support-contacts>.

Handling and Storage:

- NC520 is best used within 9 months at 4° C-12° C (40° F-55° F).
- Allow the solder paste to warm up completely and naturally to ambient temperature (8 hrs.) prior to breaking the seal for use.
- Mix the product lightly and thoroughly (1-2 minutes max).
- Do not store new and used paste in the same container.
- Reseal any opened containers while not in use.
- Replace the internal plug and cap of the 500 gram jars to minimize exposure of the unused paste to the atmosphere.
- Visit <http://www.aimsolder.com/services/applications-advice> for detailed paste handling instructions.

Physical Properties:

<i>ITEM</i>	<i>SPECIFICATION</i>
Appearance	Gray, Smooth, Creamy
Alloy	SAC305
Melting Point	217° - 218° C
Particle Size	T3, T4
Viscosity	Per J-STD-005 IPC TM 650 2.4.34
Packaging	Available in all industry standard packaging.

Test Data Summary:

<i>CLASSIFICATION</i>			
Product Name	IPC Classification to J-STD-004		
NC520	ROLO		
<i>POWDER TESTING</i>			
No.	Item	Results	Test Method
1	Powder Size	Type 3 (45-25 micron) Type 4 (38-20 micron)	IPC TM 650 2.2.14
2	Powder Shape	Spherical	Microscope
<i>FLUX MEDIUM TESTING</i>			
No.	Item	Results	Test Method
1	Acid Value	150 +/- 5 mg KOH/ g flux	J-STD-004 IPC TM 650 2.3.13
2	Quantitative Halides	Silver Chromate Paper - Pass	J-STD-004 IPC TM 650 2.3.28.1
3	Qualitative Halides, Fluoride Spot	No fluoride	J-STD-004 IPC TM 650 2.3.35.1
4	Copper Mirror	Low	J-STD-004 IPC TM 650 2.3.32
5	Corrosion Flux	Pass	J-STD-004 IPC TM 650 2.6.15
6	Surface Insulation Resistance	Pass – See AIM Qualification Test Report	J-STD-004 IPC TM 650 2.6.3.7
7	Oxygen Bomb	Bromine 613 mg/Kg Chlorine <125 mg/Kg	EN 14582:2007 SW 9056 SW 5050
<i>VISCOSITY TESTING</i>			
No.	Item	Results	Test Method
1	T-Bar Spindle Test Method	500 - 900 kcps	J-STD-005 IPC TM 650 2.4.34
<i>SOLDER PASTE TESTING</i>			
No.	Item	Results	Test Method
1	Tack Test	48.4 g	J-STD-005 IPC TM 650 2.4.44
2	Tack Test	94.8 g	JIS Z 3284 Annex 9
3	Solder Ball Test	Pass	J-STD-005 IPC TM 650 2.4.43
4	Wetting Test	Pass	J-STD-005 IPC TM 650 2.4.45
5	Paste Shelf Life	4°C (39°F) = 9 months	AIM TM 125-11
6	Solder Paste Slump Test	Pass	J-STD-005 IPC TM 650 2.4.35

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 AIM IS ISO9001:2008 & ISO14001:2004 CERTIFIED

The information contained herein is based on data considered accurate and is offered at no charge. Product information is based upon the assumption of proper handling and operating conditions. All information pertaining to solder paste is produced with 45-micron powder. Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated. Please refer to <http://www.aimsolder.com/Home/TermsConditions.aspx> to review AIM's terms and conditions.