NC512
SAC305

No-Clean Solder Paste

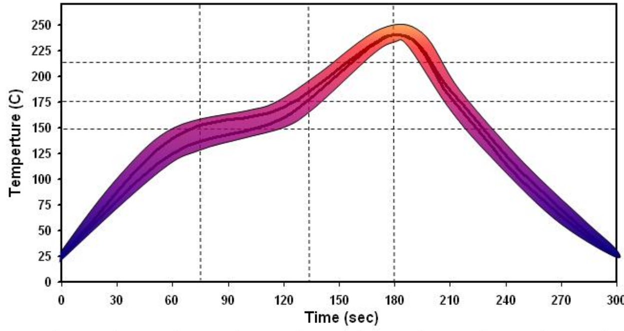
Features:
- Reduces Head-in-Pillow Defects
- Rheopump and DEK ProFlow Compatible
- Lower Voiding on OSP
- Reduces Graping
- Enhanced Fine Pitch Printing
- High Humidity Tolerance

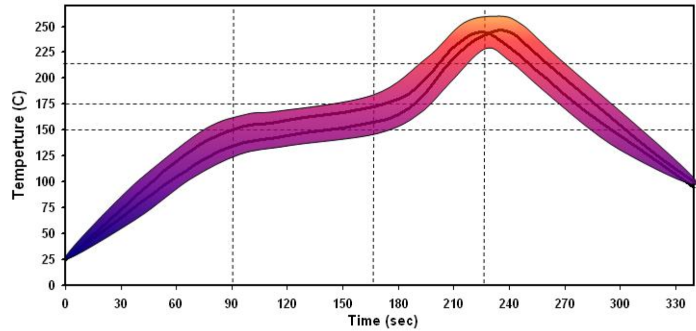
Description:
NC512 is a no-clean solder paste that has been proven to offer excellent activity and wetting characteristics, superior slump resistance and reduce voiding on BGAs. NC512 also offers high humidity tolerance and a chemistry developed for use in air reflow. Slump and humidity tolerances found in NC512 extend the solder pastes useable life in facilities where the environmental control is not at its optimum. NC512 also offers pin-probe testable residues and lead-free compatibility.

Printing:
- Apply sufficient paste to the stencil to allow a smooth, even roll during the print cycle (a bead diameter of 12 to 16 mm (½ to ⅝ inch) is normally sufficient to begin).
- Apply small amounts of fresh solder paste to the stencil at controlled intervals to maintain paste chemistry and workable properties.
- NC512 provides the necessary tack time and force for today's high speed placement equipment, which will enhance product performance and reliability.
- Cleaning of your stencil will vary by application; however, it can be accomplished using AIM DJAW-10 stencil cleaner.

RECOMMENDED INITIAL PRINTER SETTINGS BELOW ARE DEPENDENT ON PCB AND PAD DESIGN			
PARAMETER	*RECOMMENDED INITIAL SETTINGS*	*PARAMETER*	*RECOMMENDED INITIAL SETTINGS*
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:
Two unique profile families are depicted below; both can be used in ramp-spike or ramp-soak-spike applications, and they each have similar reflow temperatures. The two profiles differ in where they reach their respective peak temperatures, as well as the time above liquidus (TAL). The shorter profile of the two would apply to smaller assemblies, whereas the longer profile would apply to larger assemblies, such as backplanes or high-density boards. The shaded area defines the process window. Oven efficiency, board size/mass, component type and density all influence the final profile for a given assembly. These profiles are starting points, and processing boards with thermal-couples attached is recommended to optimize the process.





RATE OF RISE 2°C / SEC MAX	*RAMP TO 150°C (302°F)*	*PROGRESS THROUGH 150°C-175°C (302°F-347°F)*	*TO PEAK TEMP 230°C-245°C (445°F-474°F)*	*TIME ABOVE 217°C (425°F)*	*COOLDOWN ≤ 4 °C / SEC*	*PROFILE LENGTH AMBIENT TO COOL DOWN*
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

❖ THE RECOMMENDED REFLOW PROFILE IS PROVIDED AS A GUIDELINE. OPTIMAL PROFILE MAY DIFFER DUE TO OVEN TYPE, ASSEMBLY LAYOUT, OR OTHER PROCESS VARIABLES. CONTACT AIM TECHNICAL SUPPORT IF YOU REQUIRE ADDITIONAL PROFILING ASSISTANCE.

Cleaning:

- NC512 can be cleaned if necessary with saponified water or an appropriate solvent cleaner.
- Please refer to the AIM cleaner matrix for a list of compatible cleaning materials.

Handling and Storage:

- NC512 is best used within 1 year when stored between 4°C and 12°C (40°F and 55°F) and 3 months when stored at room temperature between 13°C and 22°C (55°F and 72°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 mins. max) to ensure even distribution of any separated material.
- Do not store new and used paste in the same container, and reseal any opened containers while not in use.
- Replace the internal plug and cap of the 500 gram jars to ensure the best possible seal.

Physical Properties:

ITEM	*SPECIFICATION*
Appearance	Gray, Smooth, Creamy
Alloy	SAC305
Melting Point	217°-218°C
Particle Size	T3, T4, T5
Viscosity	Print/dispense versions available.
Packaging	Available in all industry standard packaging.

Test Data Summary:

CLASSIFICATION			
Product Name	IPC Classification to J-STD-004	Copper Mirror to J-STD-004	Silver Chromate to J-STD-004
NC512	ROL0	LOW	PASS
POWDER TESTING			
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
FLUX MEDIUM TESTING			
No.	Item	Results	Test Method
1	Acid Value	143.17 ± 5.5mg KOH/ g flux	J-STD-004 IPC TM 650 2.3.13
2	Halide Content	Silver Chromate Paper - Pass	J-STD-004 IPC TM 650 2.3.35
3	Fluorides Spot Test	No flouride	J-STD-004 IPC TM 650 2.3.35.1 J-STD-004 IPC TM 650 2.3.35.2
4	Corrosivity Test/ 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 639 mg/Kg Chlorine <510 mg/Kg	EN 14582:2007 SW 9056 SW 5050
VISCOSITY TESTING			
No.	Item	Results	Test Method
1	T-Bar Spindle Test Method	700 ± 10% kcps	J-STD-005 IPC TM 650 2.4.34
SOLDER PASTE TESTING			
No.	Item	Results	Test Method
1	Tack Test	40.0 g	J-STD-005 IPC TM 650 2.4.44
2	Tack Test	102.6 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	Between 4° and 12° C (40° and 55° F) = 6 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.

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