RMA250 No-Clean Solder Paste Leaded

INTRODUCTION

RMA250 is a no-clean, leaded solder paste. RMA250 is a rosin mildly activated solder paste. RMA250 has excellent activity which results in excellent wetting, low solder balling and low graping. RMA250 flux residues are clear, pin testable, and are easy to clean with the use of a cleaning agent.

ATTRIBUTES

- Excellent activity
- Clear residues that are pin testable
- Residues are easy to clean with a cleaning agent

ALLOY AND POWDER SIZE

Sn63/Pb37	Type 3 and 4
Sn62/Pb36/Ag2	Type 3
Anti-tombstoning mixtures	Type 3

PACKAGING

Jars	250, 500 grams
Cartridges	500, 600 grams
Syringes	30, 100 grams
Enclosed print systems	

STORAGE AND HANDLING

- Store solder paste at 5 – 10°C (40 – 50°F).
- Warm to room temperature for at least 4 hours before use, but warming overnight is desired. Do not open the container during the warming period.
- Once opened, do not refrigerate the solder paste again. Keep it in a sealed container at room temperature.
- Solder paste can be stored at room temperature for up to 2 weeks.
- Solder paste used on the printer should not be returned to the container with the fresh solder paste. It should be stored in a separate container at room temperature.
- Once the solder paste is printed, the circuit boards are usable for up to 8 hours. Beyond this time, the solder paste should be cleaned off of the circuit boards.

J-STD-004 DATA

Classification	ROL1
Copper mirror (TM 2.3.32)	Low activity
Halide content (TM 2.3.28.1)	0.10 – 0.15 % wt.
Silver chromate (TM 2.3.33)	Halides present
Fluoride spot test (TM 2.3.35.1)	None detected
SIR (TM 2.6.3.7)	Pass > 1.00E+10 ohms
ECM (TM 2.6.14.1)	Pass, increase of 0.6 Log_{10} ohms

J-STD-005 DATA

Viscosity Brookfield (TM 2.4.34)	600 – 700 Kcps
Slump (TM 2.4.35)	Pass
Solder balling (TM 2.4.43)	Pass
Wetting (TM 2.4.45)	Pass

STENCIL DESIGN

Slic stencils from Fine Line Stencil are recommended for fine feature printing down to an area ratio of 0.55. NanoSlic Gold coating should be used for area ratios below 0.55.

PRINTER PARAMETERS

Solder paste bead size	Initial 2 cm (0.75 in) Add below 1.4 cm (0.50 in)
Squeegee	Slic metal preferred 60 deg. from horizontal
Speed	25 to 150 mm/sec (1 to 6 in/sec)
Pressure	0.18 to 0.27 kg/cm (1 to 1.5 lb/in)
Underside cleaning	Solvent and dry wipe recommended. NanoSlic Gold enables wiping every 20 – 40 prints
Stencil life	8 hours at 65-85 °F and 10-70% RH

REFLOW PROFILE - LINEAR

Time from 45°C to peak	3.5 to 4.0 min
Ramp rate	0.7 to 2.0 °C / sec
Preheat time (130–160°C)	50 - 90 sec (70 sec target)
Peak temperature	210 – 220 °C (215 °C target)
Time above liquidus (TAL)	45 – 75 sec (60 sec target)
Cooling rate	3 – 6 °C / sec

TAL should be calculated based on the liquidus point of the alloy used: Sn63/Pb37 183°C, Sn62/Pb36/Ag2 179°C.

Adding a soak between 140 and 150 °C for 10 – 20 seconds can reduce the potential for both tombstoning and voiding.

CLEANING

Raw solder paste can be removed from the stencil using isopropyl alcohol or a variety of commercial cleaners. When solder paste is left on the stencil unused for more than 4 hours, then the stencil should be cleaned.

No-clean solder paste residues do not need to be removed from the circuit board. If removal of the flux residues is desired, then a commercial cleaning agent should be used. Several common cleaning agents have been tested and found to be effective. Please contact your cleaning chemical supplier for details.