

FORMOSA No-Clean Solder Paste

Model: PF610-P30

Halide-Free

Rev. 2013/07/28 Ver. 2

— Specification —

| Item | Specification | Standard |
|-------------------|---|---------------------|
| Appearance | Gray paste w/o visible foreign and clusters | |
| Alloy composition | Sn/Ag3.0/Cu0.5/Ni0.06/Ge0.01 | JIS-Z-3282 |
| Melting Point | 217~219 °C | |
| Particle Size | (Type 3) +45μm < 1% , -20μm < 10% (Type 4) +38μm < 1% , -20μm < 10% (Type 5) +25μm < 1% , -15μm < 10% (Type 6) +15μm < 1% , -5μm < 10% | IPC-TM-650, 2.2.14 |
| Powder Shape | Spherical | |
| Flux Content | 11.5 ± 1.0wt% | JIS-Z-3197, 8.1.2 |
| Viscosity | 200 ± 30 Pa · s (25±1 °C , 10rpm, Malcom) | JIS-Z-3284, Annex 6 |
| Flux Type | ROL0 | J-STD-004A |

— Test Content —

| Test Item | Test Result | Test Method |
|------------------------------|-----------------|----------------------------|
| Copper Plate Corrosion Test | Pass | JIS-Z-3197, 8.4.1 |
| Spreading Test | > 70% | JIS-Z-3197, 8.3.1.1 |
| Ion Chromatography Test | 0.0 wt% | IPC-TM-650 Method 2.3.28.1 |
| Copper Mirror Test | Pass | IPC-TM-650, 2.3.32 |
| Viscosity Test(25°C , 10rpm) | 200 ± 30 Pa · s | JIS-Z-3284. Annex 6 |
| Tackiness Test (gf) | > 130 (8hr) | JIS-Z-3284. Annex 9 |
| Slump Test | Pass | JIS-Z-3284. Annex 7, 8 |
| Solder Ball Test | Pass | JIS-Z-3284. Annex 11 |

— Reliability Test —

| | | |
|--------------------------|-----------------------------|----------------------|
| S.I.R. Test ▲ | > 1×10 ⁹ Ω, Pass | IPC-TM-650, 2.6.3.3 |
| Electro Migration Test ◆ | Pass | IPC-TM-650, 2.6.14.1 |

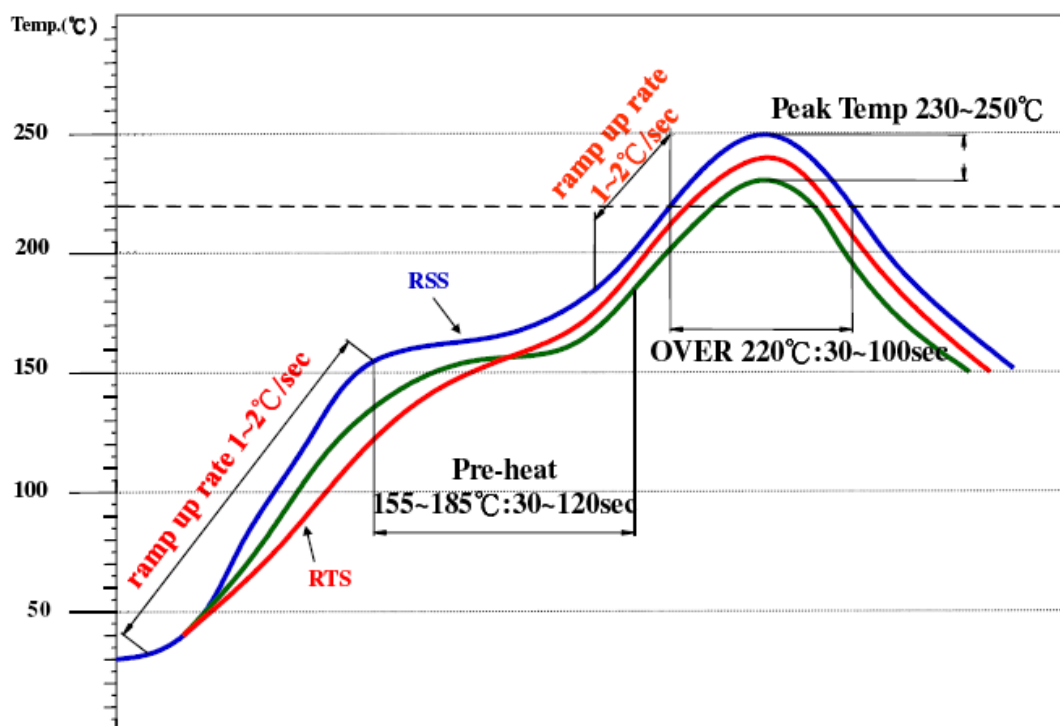
▲ Test Conditions : 85 °C, 85% RH for 168 hrs ◆ Test Conditions : 65 °C, 88.5% RH for 596 hrs

— Alloy Composition —

| (Sn) | (Ag) | (Cu) | (Ni) | (Ge) | (Zn) | (Al) | (Sb) | (Fe) | (As) | (Bi) | (Cd) | (Pb) |
|------|-------------|-------------|---------------|----------------|--------------|--------------|-------------|-------------|-------------|-------------|--------------|-------------|
| REM. | 2.8~ 3.2 | 0.3~ 0.7 | 0.04~ 0.08 | 0.005~ 0.02 | 0.001 MAX | 0.001 MAX | 0.05 MAX | 0.02 MAX | 0.03 MAX | 0.10 MAX | 0.002 MAX | 0.05 MAX |

(Wt%)

— Temperature Profile —



| | |
|--------------------------------|----------------|
| ramp up rate(30~150 °C) : | 1.0~2.0 °C/sec |
| pre-heating time(155~185 °C) : | 30~120 sec |
| time period above 220 °C : | 30~100 sec |
| ramp up rate during reflow: | 1.0~2.0 °C/sec |
| peak temperature: | 230~250 °C |
| ramp down rate during cooling: | 1.0~6.0 °C/sec |

— Handling and Storage Instructions —

1. Storage

- (1) Refrigerate pastes at 0~10 °C helps prolong shelf life; normal shelf life is 6 months from production date (sealed jars).
- (2) Keep away from direct sunlight.

2. Operation Manual (Sealed)

- (1) Allow pastes to reach ambient printing temperature prior to use for 3 - 4 hrs. Do not heat to raise temperature abruptly.
- (2) Well mix paste with plastic spatula for 1-3 mins before use. Mixing time depends on tool type.

3. Operation Manual (Opened)

- (1) At first, add 2/3 jar of solder paste onto the stencil. Do not add more than 1 jar.
- (2) Add a little amount of paste at a time on the stencil according to printing speed.
- (3) It is recommended to finish fresh paste within 24 hrs. To maintain paste quality, make sure not to store used paste and fresh paste in the same jar.
- (4) After printing, it is suggested to place components to be mounted on the circuit board and reflow within 4 – 6 hrs.
- (5) If printing process was interrupted for more than 1 hr, be sure to remove paste remnant from stencil and seal them in the jar.
- (6) It is recommended to keep printing environment at 22~28 °C and RH of 30~60%.
- (7) To clean up printed circuit boards, it is suggested to use ethanol or isopropanol.

Contact Information

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