



TECHNICAL DATA SHEET

PF610-P No Clean Solder Paste

Specification:

No	Item	Specification	Standard
1	Appearance	Gray Paste, No Foreign, No Stiff	
2	Alloy	Sn/Ag3.0/Cu0.5/Ni0.06/Ge0.01	JIS-Z-3282
3	Melting Point	217°C~219°C	DSC
4	Particle Size	(Type 3) +45µm 1% less, -20µm 10% less (Type 4) +38µm 1% less, -20µm 10% less	IPC-TM-650, 2.2.14
5	Powder Shape	Sphere	
6	Flux Content	11 ± 1.0 wt%	JIS-Z-3197, 6.1
7	Halide Content	<0.1 wt% (in flux)	J-STD-004
8	Viscosity	200 ± 30 PA.s (25±1°C, 10rpm, Malcom)	JIS-Z-3284, Annex 6
9	Flux Type	ROL0	J-STD-004
10	RoHS Compliant	Yes	International Standards

Physical Properties & Reliability Data

No	Test Item	Test Result	Test Method
1	Copper Plate Corrosion Test	PASS	JIS-Z-3197, 6.6.1
2	Spread Test	75% up	JIS-Z-3197, 6.10
3	Silver Chromate Test	PASS	IPC-TM-650, 2.3.33
4	Copper Mirror Test	PASS	IPC-TM-650, 2.3.32
5	Fluorides By Spot Test	PASS	IPC-TM-650, 2.3.35.1
6	S.I.R Test ▲	1×10 ⁹ up	IPC-TM-650, 2.6.3.3
7	Electro Migration Test ◆	1×10 ¹² up Pass	IPC-TM-650, 2.6.14.1
8	Viscosity Test (25°C,10rpm)	200 ± 30 Pa.s	JIS-Z-3284. Annex 6
9	Tack Test (gf)	140 up (8hr)	JIS-Z-3284. Annex 9
10	Slump Test	Less than 0.3 mm	JIS-Z-3284. Annex 8
11	Solder Ball Test	PASS	JIS-Z-3284. Annex 11

▲ Test Conditions : 85°C, 85% RH

◆ Test Conditions: 65°C, 85% RH

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

Patent No.: Japanese Patent No. 3296289 ◦ U.S Patent No. 6179935B1.

Japanese Patent Alloy Composition : Sn; 1.0 ≤ **Ag** ≤ 4, 0 < **Cu** ≤ 2, 0 < **Ni** ≤ 0.5, 0 < **Ge** ≤ 0.1

U.S Patent Alloy Composition : Sn; 0 < **Ag** ≤ 4, 0 < **Cu** ≤ 2, 0 < **Ni** ≤ 1, 0 < **Ge** ≤ 1

Regd Off & Works:

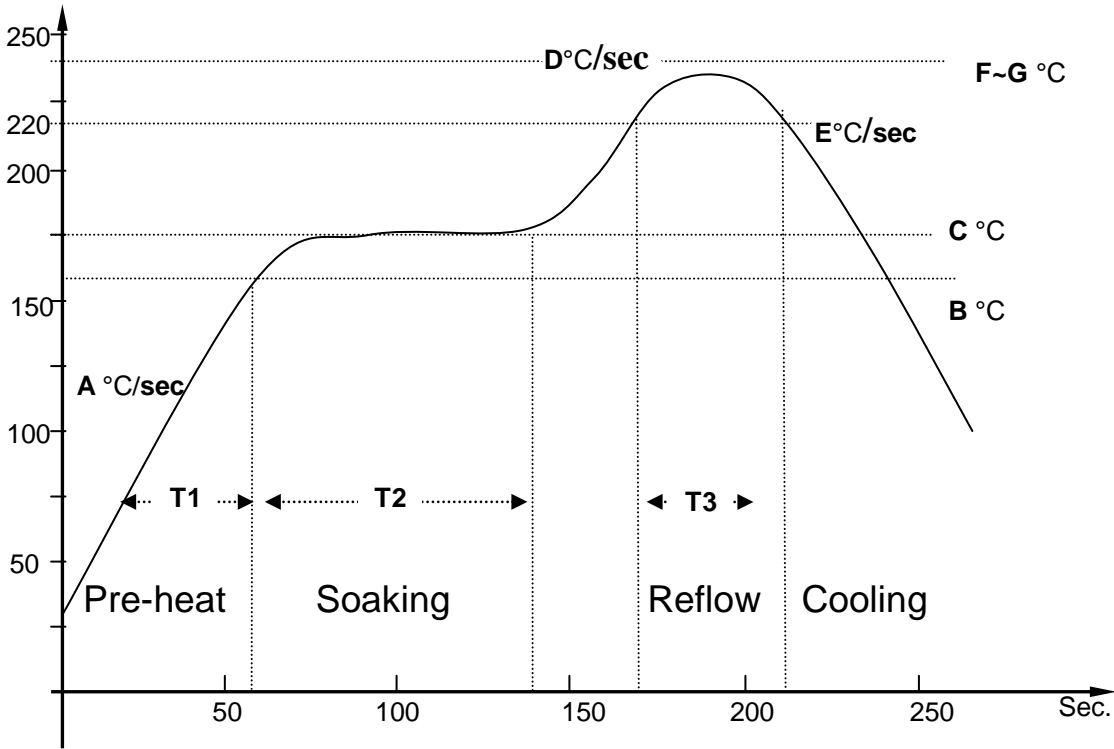
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Temperature Profile



A: Ramp up rate during preheat:	1.5~2.5°C/sec
B~ C : Soaking temperature:	155~185°C
D: Ramp up rate during reflow:	1.2~2.3°C/sec
E: Ramp down rate during cooling:	1.0~4.0°C/sec
F~G : Peak temperature:	240~250°C
T1: Preheat time:	50~80 sec
T2 : Dwell time during soaking:	60~100 sec
T3 : Time above 220°C :	45~85 sec

Handling and Storage Instruction

1. Storage

- (1) Keep in 0~10°C temperature.
- (2) Expiration period: 6 months from production date. 7 days storage in (25 ± 2°C) (sealed condition)
- (3) Keep out of direct sunlight.

2. Operation Manual (Sealed)

- (1) Keep solder paste in room temperature (25 ± 2°C) for 3~4 hours. Do not use any heater to raise temperature.
- (2) Kindly mixed averagely for 1~3 minutes according to necessity.



3. Operation Manual (Opened)

- (1) At first, add 2/3 can of solder paste onto the stencil, do not add more than 1 can of each.
- (2) Add solder paste a little at a time according to production procedure.
- (3) To maintain the solder paste quality, please make sure not to store the opened can with sealed can.
- (4) Use new opened solder paste at the beginning of the next day. Mix opened solder paste with sealed one at ratio 1:2, add little at a time during printing.
- (5) Soon after printing, please make sure all components to be mount on printed circuit board between 4~6 hours.
- (6) Please withdraw solder paste from stencil and seal it in paste container, if printing process would pause for more than 1 hour.
- (7) After continuously printing for 24 hours, kindly withdraw printed solder paste and follow step (4).
- (8) It is recommended to clean both side of stencil every 4 hours manually to ensure printing quality.
- (9) Kindly keep room temperature between 22~28°C, room humidity RH 30~60% is recommended.
- (10) To clean up the defect printed board, kindly use isopropyl alcohol or IPA.

For more details, please visit Our Website at www.persangalloy.com or write to us.

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