

ESP240N Series

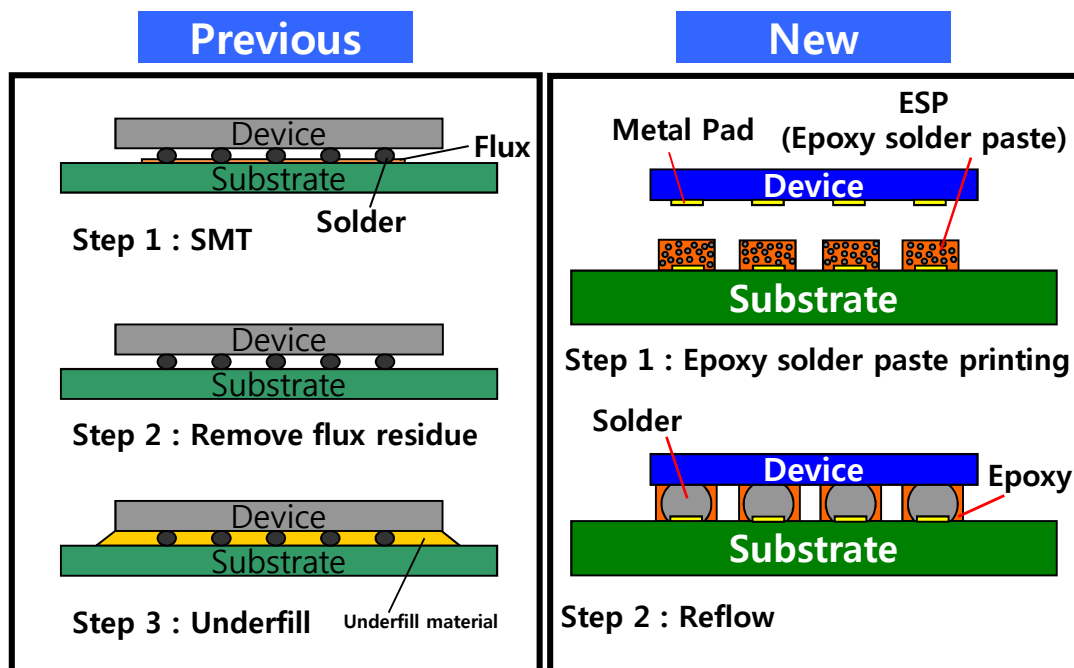
ESP240N Series is based on thermosetting epoxy mixed with solder powder that shows higher reliability performance than conventional solder paste.

Application

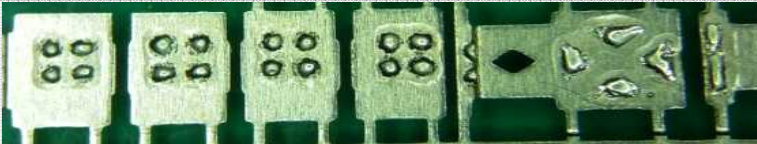
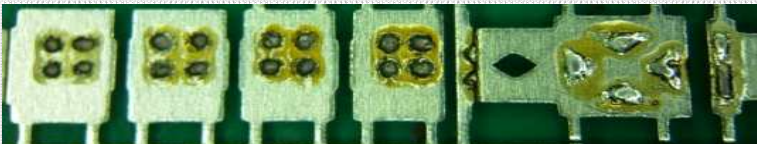
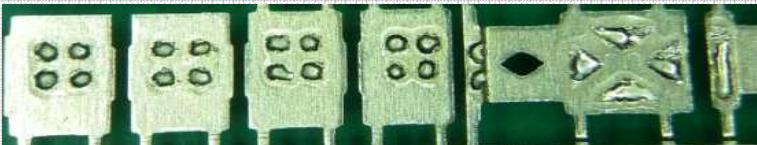
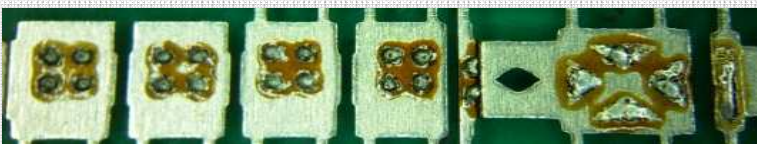
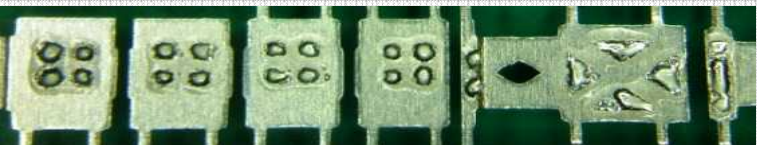
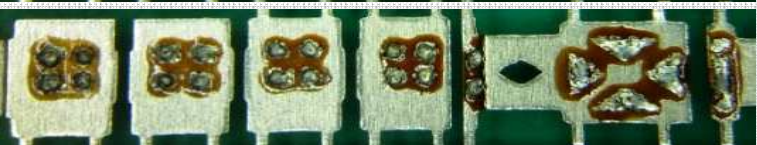
- Soldering material for LED COB or Flip chip LED
- Suitable for Dotting, Dispensing, Screen Printing

Features & Strength

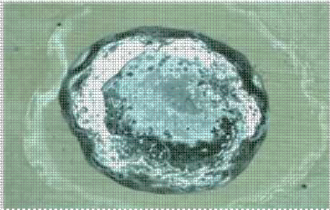
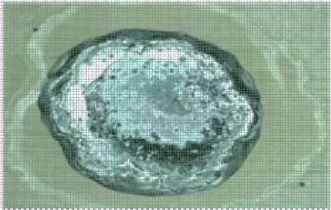
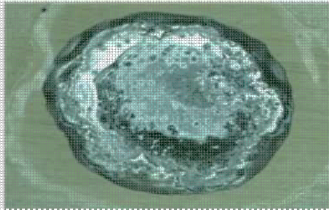
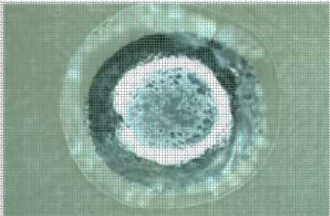
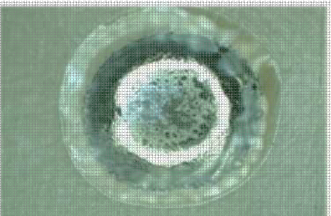
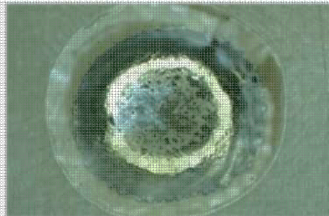
- Reflow in low oxygen level or N₂ atmosphere(<500ppmO₂)
- Little hardening change in successive printing, and consistent performance for printing
- Excellent wetting performance and minimize of Void
- Little slump after printing so that the reliability of Soldering is high
- No Solder ball issue
- Effective for Fine pitch
- Much better bonding strength than normal solder paste
- SMT+Under-fill can be substituted one SMT process

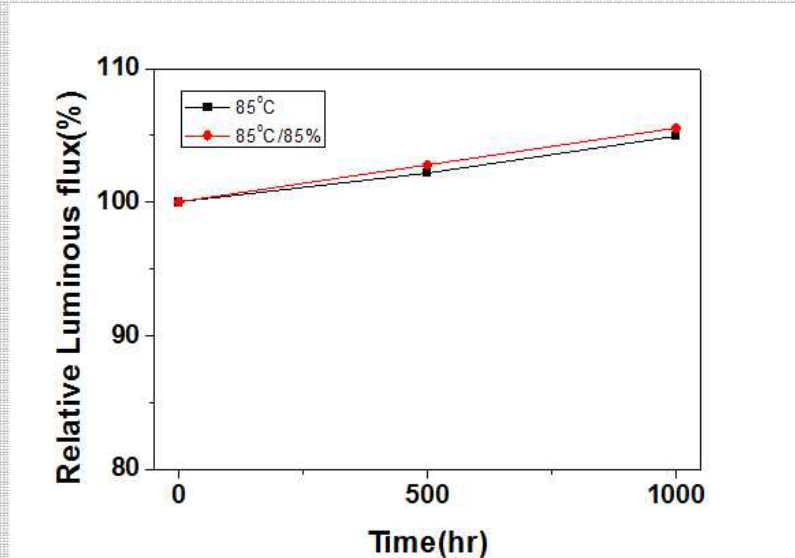
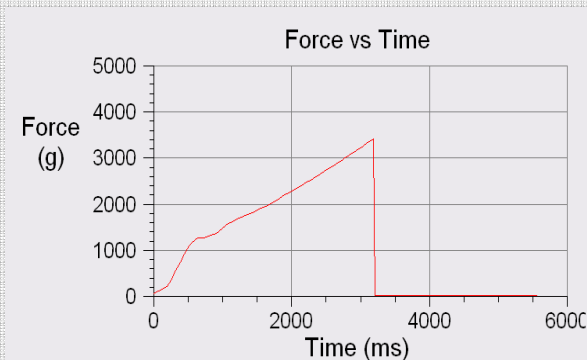
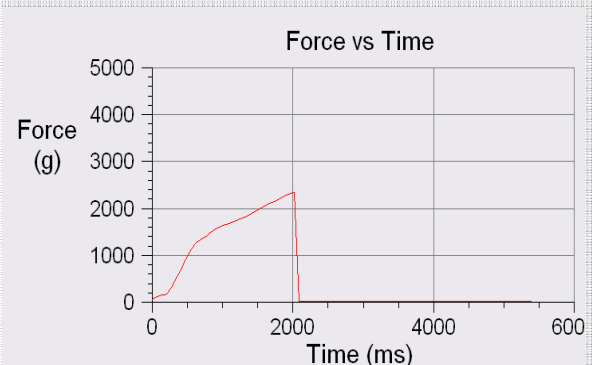


Re-melting Test

Temp.	Time		Test Result
Hot plate 370°C	10sec	before	
		after	
	20sec	before	
		after	
	30sec	before	
		after	

Discolor Test

Time	Result		
L E D			
	0hr	150°C 12hr	150°C 24hr
S M T			
	0hr	150°C 12hr	150°C 24hr

Luminous flux Result
Result
High temp. reliability: 85°C_1000hr
**high-temp. and humidity reliability :
85°C/85%R.H._1000hr**

**0 hr : 100.0
500 hr : 102.2
1000 hr : 104.9**
**0 hr : 100.0
500 hr : 102.8
1000 hr : 105.5**
DST Comparison(ESP vs SP)
Result (Force(g))
ESP240

**Avg.: 3907.1
Stdev.: 807.3**
Normal Solder Paste

**Avg.: 2476.7
Stdev.: 570.2**

Information

Alloy : Sn3.0Ag0.5Cu / Sn0.7Cu (possible to customize)

Particle Size : Type 4 (20~38um), Type 5 (15~25um), Type 6 (5~15um)

Package : 500g , possible to customize

Properties

Spec.		Unit	Value	Measured
Color		-	Gray	Visual
Specific gravity		-	7.4	-
Thixotropic Index(TI)		-	0.4~0.7	MALCOM
Viscosity(@ 25°C)		Pa.S	LV (40~80) MV (80~140) HV (140~ 230)	MALCOM(10rpm)
Tg		℃	75	TMA
Thermal Conductivity		W/mK	63	Laser Flash Diffusivity
Surface Insulation Resistance		Ohom	>1.0×10E9	JIS Z 3284
Cure condition		Refer to reflow profile(N ₂)		
Powder size		Type 4	Type 5	Type 6
Metal content (wt%)	LV	-	85.5	85
	MV	-	87	86.5
	HV	-	88.5	88

- Possible to change for customize (Metal content and viscosity)

Working Time

Spec.	Unit	Value	Remark
Working time	Time	< 6 hours	-
Expiration date	Month	< 3 months	-40°C

How to Use

1) Thaw

- Allow to reach room temperature before use(3 hours ago) without opening.
Freezed opening can cause solder ball problem.
- Open and use after the paste reach the room temperature(20~25°C).

2) Mix

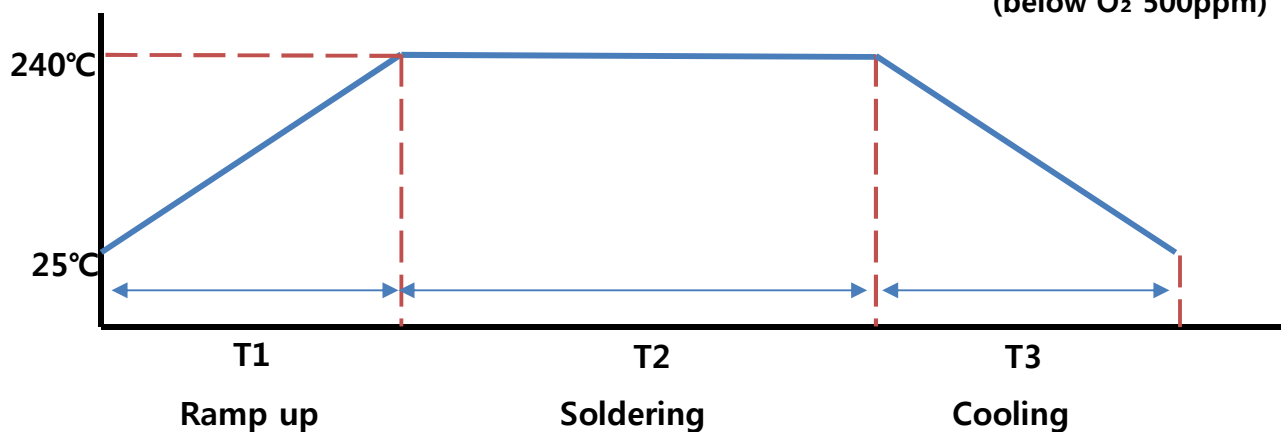
- Recommend manual mixing(2min ~ 3min)
Excessive mixing can make the property change.

Spec.	RPM	Sec.
Auto Mixing(Jar)	600~800	10~20

Reflow Profile Condition

High Ramp up Profile

N2 atmosphere
(below O₂ 500ppm)



Zone	T1	T2	T3	Peak Temp.
Temp(°C)	25~240	240	Below 240°C	240°C
Time(sec)	60~90	100~120	3~8°C/sec	