Name: Solder Paste

Model: Sn62.9Pb36.9Ag0.2

Net Weight: 500g/bottle

Type: No-clean Solder Paste (For LED Product)

Model: Sn62.9Pb36.9Ag0.2

Alloy: Sn62.9Pb36.9Ag0.2

Melting point: 179-183℃

DESCRIPTION

Sn62.9Pb36.9Ag0.2 series is a middle activated rosin no-clear solder paste. Special designed for LED production process. Sn62.9Pb36.9Ag0.2 Series is different than most other types of no-clear solder paste with great selection of process parameters, so it can adapt in different environment, different equipment and different application process。Sn62.9Pb36.9Ag0.2 It can ensure excellent continuity printing, anti collapse ability, surface insulation resistance. low residue after welding can ensure the ICT test. Sn62.9Pb36.9Ag0.2 With excellent anti-interference ability, in the continuous printing can still ensure 12 hours of solder paste has good adhesion conditions.

FEATURES

Lead solder paste	12 hours continuous printing capability
6 hours collapse schedule	No need for gas protection
Viscosity constant	16mil（0.3mm）Simple distance printing

STANDARD PASTE COMPOSTION

Application features	IPC Alloy type	Alloy powder size	Alloy powder content
Standard printing	3	25-45um	89%
Thin distance printing	4	20-38um	89.3%
Drip	5	25-45um	86%

PHYSICAL PROPERTIES

Suitable for 89%，-325+500Alloy powder solder paste

Brook field：700-1400kcPs @ 5 RPM（Brook field Viscmter at 25℃）

MaIcom:1700-2300 Poise @ 10 RPM(MaIcom Viscometer at 25℃)

Solder ball test	Qualified	Test standard	J-STD-005，IPC-TM-650，Method 2.4.43
Wet ability test	Qualified	Test standard	J-STD-005，IPC-TM-650，Method 2.4.45

RELIABILTY PROPERTIES

The Copper mirror test	Qualified(low)	Test standard	J-STD-004，IPC-TM-650，Method 2. 3. 32.
Copper surface corrosion test	Qualified(low)	Test standard	J-STD-004，IPC-TM-650，Method 2. 6. 15
Halogen content test			
Silver chromate test	Qualified	Test standard	J-STD-004，IPC-TM-650，Method 2. 3. 33
Fluorine point test	Qualified	Test standard	J-STD-004,IPC-TM-650, Method 2. 3. 35. 1
Surface insulation resistance	Qualified	Test standard	J-STD-004，IPC-TM-650，Method 2. 6. 3. 3

IPC TM-650

0Hour	>1×10012hm	96Hour	>1×10011hm

APPL ICATION NOTES

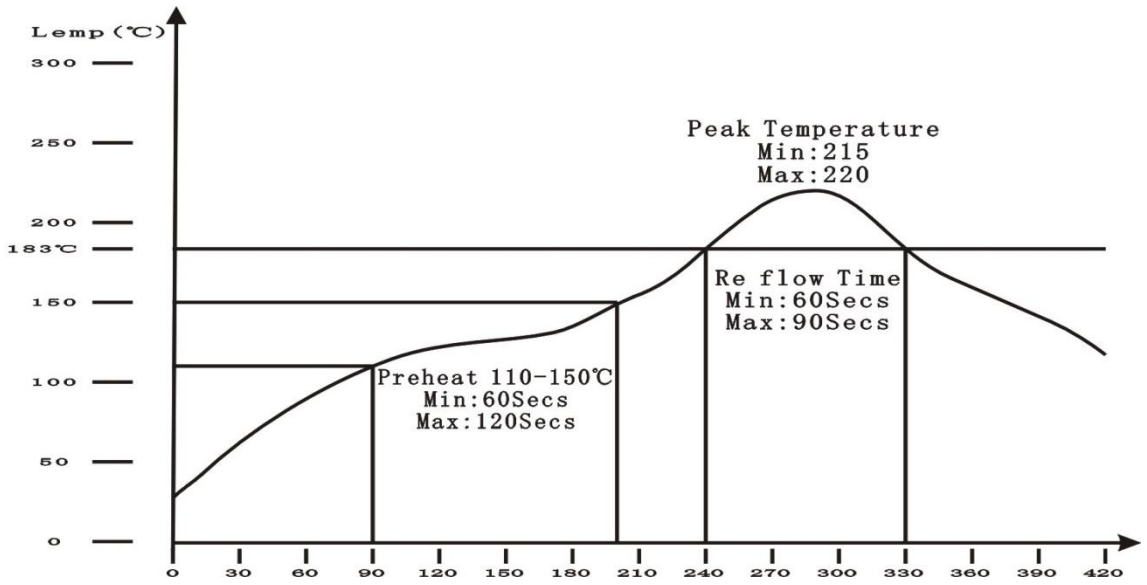
Purpose

Sn62.9Pb36.9Ag0.2 Series is suitable for Sn63Pb37 and Sn62Pb36Ag2 alloy. Recommended by 3 gold powder, but according to the different with the coating such as the standard printing and Ultra small spacing selects the different IPC alloy end type.

Printing Parameters

Scraper	80-90 Shore hardness of polyurethane or stainless steel material
Scraper speed	25-150mm/sec
Grinding plate material	Stainless steel, Mo, Or brass
Temperature and humidity	Temperature70-77F（21-25℃） 、Humidity35-65% R.H.

REFLOW DATA



Heating rate	The time of rapid heating up to 150℃	Slow heating 140-180℃	Peak temperature 215±5℃	>183℃	>210℃	Cooling
13℃/SEC	<90S	60-100S	230℃	30-60S	10-20S	<4℃/S

Cleaning after soldering

Sn62.9Pb36.9Ag0.2 series is a no-clean solder paste. General you don't need to clean the stencil after welding.
If you want to clean the stencil, XJS-638 series solder paste is easy to clean by use the corresponding cleaning agent Maier Shun.

Packaging form	Bottled - a bottle of 250 grams and 500 grams of choice

Storage, Operation and Preservation Period

Sn62.9Pb36.9Ag0.2 can be preserved for 6 months within 5-10℃. Don't let the solder paste cryopreservation.

Before open the package when you want to use the solder paste, please warm up the solder paste to room temperature fully.(recommended 4 hours)
Stir the solder paste well 1-2 minute to ensure fully mixed before use it because in the cold temperature storage the component of solder paste will separation.
Do not use left solder and new solder paste mixed within the same package.
Solder paste does not need to use should be re-sealed. When the bottle cap can't be good to seal preservation please replace a new bottle cap to ensure as far as possible the seal.

Sn62.9Pb36.9Ag0.2 Disposable solder alloy composition（Sn60/Pb40）

component	Sn	Pb	Cu	Cd	Zn	Al	Sb	Fe	As	Ag	Ni
content	63±0.5	37±0.5	≤0.01	≤0.002	≤0.002	≤0.001	≤0.02	≤0.02	≤0.01	≤0.01	≤0.005

Test Report

Model: Sn62.9Pb36.9Ag0.2

Flux type：ROMO

Date of original data test：12/05/2019

Test item	**According to the rules**		**IPC-TM-650 Test method**		**Testing requirement**	**Test results**
Metal content	3.4		2.2.20		89.5-90.5%	89.7%
viscosity	3.5	Brookfield			700-1400kcps	700-1100
		Malcom			150-250kcps	170-230
	3.6				No bridging	qualified
Solder Balls	3.7		2.4.43		No big ball	qualified
Expansion ratio			4.7.7.2.2			92%
The mirror test	3.2.4.1		2.3.32		<50%Pierce through	qualified
Halogen test	3.2.4.2					
Silver chromate test	3.2.4.2.1		2.3.33		No color change	qualified
Fluorine point test	3.2.4.2.2		2.3.35.1		No color change	qualified
Copper surface corrosion	3.2.4.4		2.6.15		Slight corrosion can be accepted	qualified
Surface insulation resistance	3.2.4.4		2.6.3.3	0 Hour	$>1.00\times10^{8}$	1.09×10^{12}
	3.2.4.5			96 Hours	$>1.00\times10^{8}$	1.38×10^{11}

Soldering Defects and Solving Methods

Component shift

Possible causes	Solution
a) Position not correct	The positioning coordinate calibration
b) The positioning of the solder paste volume is not enough or not enough pressure	To reduce the content of solder paste flux
c) Too high content of lead in solder paste, reflow process components shift in the flux flow	Increase the amount of paste, increase the pressure placed components

Solder powder can't be flow, in the form of powder residue on the pad

Possible causes	Solution
a) The heating temperature is not appropriate	Improved heating equipment and adjust reflow soldering temperature curve
b) solder paste is Deterioration	Be care of the cold storage the solder and remove the surface which is dried of the solder paste
c) Preheat excessive, too long or too high temperature	Improved preheating condition

Less Sn on the pad

Possible causes	Solution
a) solder paste not enough	Expand the size of hole of stencil
b) Welding performance of pad and components	Change the solder paste or re-wetting components with flux
c) Reflow soldering time too short	Extended reflow soldering time

Too much Sn on the pad

Possible causes	Solution
a) The stencil hole size is too large	Reduce the size of hole on the stencil
b) Solder paste viscosity	Increase the viscosity of the solder paste

Tomb stoning (tombstone phenomenon)

Possible causes	Solution
a) Position shift	Adjust printing parameters
b) In the strength of solder paste flux floating component	Use the solder paste with less flux

c) The thickness solder paste is not enough after printing	Increase printing thickness
d) Heating speed is too fast and uneven.	Adjust reflow soldering temperature curve
e) Welding pad design is not reasonable	Strictly according to the specification of the pad design
f) use Sn based solder	Use paste containing Ag or Bi

Solder Ball

Possible causes	Solution
a) Heating speed is too fast	Adjust reflow soldering temperature curve
b) The moisture absorption of solder paste	Reduce environmental humidity
c) The solder paste is oxidized	Use new solder paste, shorten the warm-up time
d) PCB Pad contamination	For PCB or increase the activity of solder paste
e) Component placement pressure is too large	Reduce pressure
f) Too much solder paste	Reducing the size of hole on the stencil or reducing the pressure of the scraper

Incomplete Weld

Possible causes	Solution
a) Welding pad or components welding property is bad	Use good quality PCB and components
b) Printing parameter is not correct	Reduce paste viscosity, check the speed and pressure of scraper
c) Reflow oven temperature or temperature rising speed is not correct	Adjust the temperature curve of reflow oven

Bridging

Possible causes	Solution
a) Solder paste collapse	Increase the content of the metal or viscosity of solder paste, use another solder paste
b) Too much solder paste	Reduce the size of hole on the stencil or reduce the pressure of scraper
c) Multiple printing on the pad	Other printing methods
d) Heating speed is too fast	Adjust the temperature curve of reflow oven

Collapse

Possible causes	Solution
a) Solder paste viscosity low and welding property is bad	Choose more suitable solder paste

b) High ambient temperature	Control ambient temperature

Poor Cleaning, leaving white residue after cleaning

Possible causes	Solution
a) Paste flux washability is not good	Chang the solder paste with good flux washability
b) Cleaning agent is not suitable, cleaning solvent can't reach the small gap	Improved cleaning solvent
c) Incorrect cleaning methods	Improved cleaning method