



SHENZHEN FITECH CO., LTD.

Technical Data Sheet

Product Name: Solder Powder

Product Model: Sn42Bi57.6Ag0.4(FA-574)

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1. Scope

This TDS mainly introduces Sn42Bi57.6Ag0.4(FA-574) model for SMT lead-free solder powder.

2. Reference standards

SJ/T 11391-2019 Solder powder for electronic soldering applications

IPC J-STD-005A Requirements for soldering pastes

IPC-TM-650 Test methods manual

3. Product composition

a. Main element

Main element wt%		
Sn	Bi	Ag
42.0±0.5	Balance	0.4±0.1

b. Impurity elements

Impurity elements max. wt%								
Pb	Cu	Sb	Cd	Fe	Ni	Zn	Al	As
0.05	0.05	0.05	0.002	0.02	0.01	0.001	0.001	0.03

c. RoHS

RoHS					
Pb	Cd	Hg	Cr6+	PBB	PBDE
<500ppm	<20ppm	ND	ND	ND	ND

4. Physical characteristics

Melting point °C	139	Density g/cm ³	8.59
Electrical conductivity % of IACS	4.5	Tensile strength MPa	-

5. Performance specifications

Item	T3		T4		T5 (15-25um)	
Appearance	Silver-grey powder		Silver-grey powder		Silver-grey powder	
Sphericity	≥95%		≥95%		≥95%	
PSD	>50um	<0.5%	>45um	<0.5%	>30um	<0.5%
	45-50um	<1%	38-45um	<1%	25-30um	<10%

	25-45um	≥90%	20-38um	≥90%	15-25um	≥80%
	<25um	<10%	<20um	<5%	<15um	<10%
Oxygen	≤120ppm		≤140ppm		≤180ppm	

Item	T60(T5.5)		T6		T7	
Appearance	Silver-grey powder		Silver-grey powder		Silver-grey powder	
Sphericity	≥95%		≥95%		≥95%	
PSD	>20um	<0.5%	>20um	<0.5%	>15um	<0.5%
	15-20um	<10%	15-20um	<1.0%	11-15um	<1.0%
	5-15um	≥80%	5-15um	≥90%	2-11um	≥90%
	<5um	<10%	<5um	<10%	<2um	<10%
Oxygen	≤300ppm		≤400ppm		≤600ppm	

Item	T8		T9		T10	
Appearance	Silver-grey powder		Silver-grey powder		Silver-grey powder	
Sphericity	≥95%		≥95%		≥95%	
PSD	>11um	<0.5%	>8um	<0.5%	>5um	<0.5%
	8-11um	<1.0%	5-8um	<10%	3-5um	<10%
	2-8um	≥90%	1-5um	≥80%	1-3um	≥80%
	<2um	<10%	<1um	<10%	<1um	<10%
Oxygen	≤800ppm		≤1000ppm		≤1500ppm	

6. Testing equipment and testing methods

Item	Testing equipment	Testing methods
Chemical composition	Arc-Spark OES	IPC-TM-650
Chemical composition	AAS	GB/T 10574.1-13-2003 GB/T 3260.1-11-2000
Sphericity	Electron microscope	SJ/T 11391-2019.B
PSD	Standard screen	IPC-TM-650 2.2.14
PSD	Laser particle size analyzer	Laser diffraction method
Oxygen	Oxygen analyzer	SJ/T 11391-2019.C

7. Product shelf life

It should be sealed and stored at room temperature (temperature ≤25°C, humidity ≤50%RH), shelf life: 4 months.

8. Test report

Each batch of products is tested according to the inspection sequence of composition, particle size, sphericity and oxygen content, and its results are recorded in the product quality report, which is attached to the product delivery.

9. Package

(T6/T7/T8)1Kg/bag , (T3/T4/T5)5Kg/bag , packing according to customer's special requirements.

10. Note

- a. Store at room temperature and avoid exposure to sunlight.
- b. When used, the operating environment is controlled by temperature and humidity, and the temperature of tin powder before mixing the paste must be less than 25°C.
- c. In order to maintain good welding results, it is recommended to choose the appropriate flux, welding equipment and temperature.

11. Update the date: 2023-11-01