

SnCu0.7 Lead Free Solder Alloy



Product Description

SnCu0.7 is one of the high-performing, widely used low-cost Pb-free solder available in the industry. It can be used in wave soldering, dipping and HASL applications. It is available in the forms of solder bars and solder wires.

Alloy Composition

Main Composition		IPC J-STD-006 Specs (wt%)
Tin	Sn	Remainder
Copper	Cu	0.7 +/- 0.1
Contamination		
Silver	Ag	0.10 max
Aluminium	Al	0.005 max
Arsenic	As	0.03 max
Bismuth	Bi	0.10 max
Cadmium	Cd	0.002 max
Iron	Fe	0.02 max
Indium	In	0.10 max
Nickel	Ni	0.01 max
Lead	Pb	0.05 max
Antimony	Sb	0.20 max
Zinc	Zn	0.003 max

Specification

Item	Result
Alloy Melting Temperature	227°C
Density	7.31 g/cm ³
Spread Factor	

DSC at 5°C/min
Water Displacement Method

JIS Z 3197 8.3.1.1

235°C	> 72%
245°C	> 76%
255°C	> 80%

Wettability

IPC-TM-650 2.4.14.2

JIS Z 3197 8.3.1.2

235°C	0.75 mN, 4.55 sec
245°C	2.75 mN, 1.59 sec
260°C	4.58 mN, 0.59 sec

Mechanical Properties (As-Cast)

Instron Series IX Automated

Materials Test System

ASTM E8M (3 mm/min at 23°C)

Tensile Strength	38.72 MPa
Yield Strength	32.29 MPa
Max Percent Strain	66.53 %
Energy to Yield Point	0.103 J
Energy to Break Point	15.55 J
Toughness	21.99 MPa

Application

SnCu0.7 can be used for wave soldering, dipping and HASL processes. The operating temperature should be set > 260°C, depending on applications.

For wave soldering applications, the conveyor speed can be set up to a maximum of 1.8 m/min for single-sided boards and recommended to set at between 1.2 m/min to 1.6 m/min for double-sided boards. Recommended preheat temperature is 90 – 120°C on-board, dependent on flux activation temperature, machine design and board complexity.

Top-up Solder

SnCu0.2 & Sn99.9 are recommended for top-up purpose when the Cu% is $\geq 0.7\%$ whereas SnCu0.7 is recommended for top-up purpose when the Cu% is $< 0.7\%$. Please refer to Asahi technical staffs for more information on the control of Cu% in the solder pot.

Storage

Store the solder bar in a cool, dry and non-corrosive environment. Wrap up the solder bar when not in use to reduce exposure to environment. Solder bar can be kept for 5 years if proper storage conditions are observed.

Health & Safety

The product when use or handling maybe hazardous to health or environment. Please refer to Material Safety Data Sheet for more information.

Packaging

Solder Bar: 25kg per box, Solid Wire: 20kg per roll (Diameter: 0.25, 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, 1.2, 1.6, 2.0 and 3.0 mm). For any other packing requirements, please refer to the sales department.

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