

## SAC305-1212A

### Lead-free solder wire for robot automatic welding

SAC305-1212A lead-free solder wire is made of high-quality and high-purity tin ingots as the main raw material, supplemented by high-quality and high-purity silver and copper. It is refined through special processes using the most advanced lead-free solder professional equipment and excellent technology. This lead-free solder wire flux is compounded of high-quality modified resin, organic activator, and various additives. It is an environmentally friendly lead-free alloy solder wire with superior welding performance in the lead-free process.

#### FEATURE

- The coiled wire is neat, flat, smooth, evenly wound, and will not get tangled during routing.
- The flux in the wire is evenly distributed, has good continuity, and has no core breakage.
- Excellent electrical conductivity and thermal conductivity, fast tin application and strong wetting power.
- There is no irritating smell, less smoke and little splash during welding.
- Less residue after welding, even spreading and quick drying.
- The surface insulation resistance after welding is high and the electrical performance is stable and reliable.
- It is a green and environmentally friendly product that complies with RoHS and other environmental protection requirements.

#### APPLICATION

SAC305-1212A lead-free alloy tin wire is widely used in mounting and rework operations of communication equipment, instrumentation equipment, audio and video multimedia equipment, automotive industry equipment, household electronic and electrical equipment and components, and manual welding and repair of other high-reliability electronic products. Automatic mechanical welding.

#### TYPICAL PROPERTIES

Project	Technical indicators	Standards
Part number	SAC305-1212A	/
alloy composition	Sn96.5/Ag3.0/Cu0.5	/
Exterior	Silver white, smooth and clean surface, no cracks	Visual
Diameter(mm)	0.15;0.2;0.3;0.4;0.5;0.6;0.8;1.0;1.2;1.5;2.0;3.0	Corporate standards
Shelf Life	2 years	From the MGF Date
Packaging	1kg/roll, 0.5kg/roll, 10kg/box	Corporate standards

#### TECHNICAL SPECIFICATION

Items	Technical	Standards
Density (g/cm <sup>3</sup> )	7.4	/
Flux content (wt%)	0.0±0.0 2.0±0.5 2.5±0.5 3.0±0.5	IPC-TM-650 2.3.34.1
Melting point (°C)	217	/
Copper mirror corrosiveness	No penetrating corrosion	IPC-TM-650 2.3.32
RoHS	Passed	RoHS Directive
Flux distribution continuity, gaps	Uniform and continuous, no gaps	/
Copper plate corrosiveness	No obvious corrosion	IPC-TM-650 2.6.15
Halogen content	L1	IPC-TM-650 2.3.33
Expansion rate (%)	≥75	JIS-Z-3197 8.3.1.1
Residue dryness	The surface of the flux residue should be non-sticky and the chalk powder on the surface should be easily removed.	IPC-TM-650 2.4.47

#### ALLOY COMPOSITION CONTENT

No.	Items	CAS. No.	Content(%)
Main alloy composition and content			
1	Tin (Sn)	7440-31-5	Margin
2	Silver (Ag)	7440-22-4	3.0±0.2
3	Copper (with)	7440-50-8	0.5±0.1

### Impurity composition and content

4	Lead (Pb)	7439-92-1	≤0.10
5	Iron (Fe)	7439-89-6	≤0.02
6	Bismuth(Bi)	7440-69-9	≤0.10
7	Antimony (Sb)	7440-36-0	≤0.10
8	indium (In)	7440-74-6	≤0.10
9	Zinc (Zn)	7440-66-6	≤0.001
10	Gold (Au)	7440-57-5	≤0.05
11	Aluminum (Al)	7429-90-5	≤0.001
12	Cadmium (Cd)	7440-43-9	≤0.002
13	Arsenic (As)	7440-38-2	≤0.03

### DIRECTION OF USE

- Based on the actual welding needs, select a ferrochrome head suitable for the large and small hole diameters.
- It is recommended that the temperature of the soldering iron tip be set at  $380\pm 20^{\circ}\text{C}$ , so that the temperature reaches the optimal melting state of the tin wire and reduces the occurrence of tin splashing.
- During the soldering process, since the attachment on the surface of the soldering iron tip contains a large amount of tin oxide and flux residue, it is easy to have adverse effects on welding. It is recommended that the soldering iron tip be cleaned after a period of use.
- By keeping the welding atmosphere in a low-oxygen state, it can inhibit the oxidation of the base metal and tin wire, thereby improving the quality of tin welding. It is recommended to use nitrogen operating atmosphere welding when conditions permit.
- Personal protective equipment must meet the safety regulations in the work area. Wear protective clothing and protective shields to avoid being burned by splashing solution-state solder. For more safety protection information, please see the MSDS of this product.

The data contained in this bulletin is provided only as a guide for evaluation/consideration. These material characteristics are typical properties that are based on a limited number of samples tested in the laboratory. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any product or method. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.