



# Technical data sheet

## Technical Data Sheet

**Product name:** Lead-free

**solder paste product model:**

AS-SP104

### 1. Product Description

This product belongs to lead-free solder paste, which has good viscosity stability, is suitable for printing electronic circuit boards with fine-pitch components, and has good cold/hot collapse resistance, so that the product can meet various printing requirements and challenges of customers; This product has excellent void ratio, good activity and wide application.

### 2. Product Features

Alloy composition Sn63 Pb37

Tin powder particle size Packing specification of Type 4 (20~38um), Type 5 (15~25um), Type 6 (5~15um) 500 ± 5g/bottle

### 3. Application Description

- It needs to be stirred before use to prevent the alloy powder in the solder paste from separating from the paste due to long-term storage. It is recommended to stir it manually for 3-6 minutes or mechanically for 1-3 minutes.
- Recommended printing parameter settings (depending on PCB and PAD design):

parameter	Recommended setting range
Scraper pressure	0.4~0.7kg/25mm
Printing speed	10~100mm/s
Printing gap	0mm
PCB separation distance	0.5~2.0mm
PCB separation speed	0.5~20mm/s

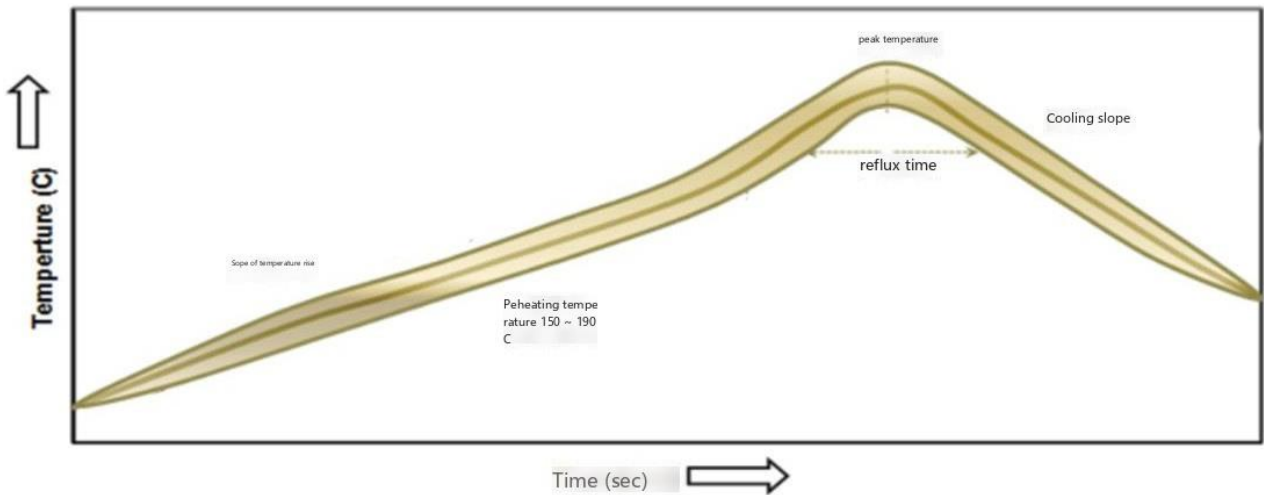
### 4. Safety

This product is non-toxic, but some gases caused by reactivity or compound decomposition will be produced during reflow soldering. Therefore, it is recommended to apply good ventilation conditions in the working area.

### 5. Storage Store

- The storage temperature can be kept for 6 months at 3~10 ° C
- Do not store this product frozen.
- Fully warm up before opening the package (more than 4 hours is recommended).
- Do not mix the remaining solder paste with new solder paste and store it in the same packaging bottle.

### 6. Recommended Reflow Profile



1	Temperature Slope	1 ~ 3 °C/s
3	Preheating Time	0 ~ 100s
	Reflux Time	30 ~ 90s
4	Peak Temperature	20 ~ 230C
5	Melting Tin Temperature	183 °C
	Cooling Slope	-4 ~ -1 °C/s

## 7. Technical Data

test item	result	reference standard
Activity classification	ROLO	IPC J-STD-004
Bronze mirror test	PASS	IPC J-STD-004
Copper plate corrosion	PASS	IPC J-STD-004
SIR	$5.0 \times 10^8$	IPC J-STD-004
electromigration	PASS	Bellcore GR78-CORE
bounding capacity	PASS	IPC J-STD-005
viscosity	$150 \pm 50$ Pa. s (Type4, printed)	IPC J-STD-004
Xizhu	PASS	IPC J-STD-005
Spreading rate	PASS	JIS Z 3197
collapse	PASS	IPC J-STD-005

## 8. Alloy composition

Sn	Pb	Ag	Sb	Bi	Fe	Zn	Cd	Al	Cu	Ni	Au	As	In
62.94	margin	<0.01	<0.02	<0.012	<0.002	<0.001	<0.001	<0.001	<0.01	<0.001	<0.003	<0.01	<0.004



# Material safety data sheet

## Material Safety Data Sheet

### 1. Chemical identification

**Product name:** Lead free solder paste AS-SP104

**Product use:** used in the processing and manufacturing process of electronic products.

### 2. Product composition

composition	CAS#	Percent content%
tin	7440-31-5	55.5~56.5
lead	7439-92-1	32.5~33.5
Modified rosin	8050-09-7	3.0~6.0
Di-ethylene glycol di-butyl ether	112-73-2	0.1~10

### 3. Hazard overview

emergency	The smoke generated in use may cause irritation to eyes, which is the main way of
skin allergic reaction.	Skin, eyes, inhalation, ingestion
skin	May cause slight skin allergy.
eye	Smoke may cause temporary slight irritation to eyes.
suck up	Smoke produced during use affects mucous membrane and respiratory system.
ingestion	It may cause harm, and most of the solder paste will be discharged with the body without
absorption.	

### 4. first aid treatment

**Eyes:** Wash eyes with plenty of water immediately, and lift upper and lower eyelids from time to time. Check and remove any contact lenses. Rinse continuously for at least ten minutes. If you feel pain, please seek medical treatment.

**Skin:** Wash with plenty of soapy water and water. Take off contaminated clothes and shoes. Please rinse thoroughly with water or wear gloves before taking off contaminated clothes. Rinse continuously for at least ten minutes. Seek medical assistance. In the presence of any diseases or symptoms, further exposure should be avoided. Clothes should be washed before reuse. Shoes should be thoroughly cleaned before reuse.

**Inhalation:** move the patient to fresh air, rest and keep a position conducive to breathing. If there is no breathing, irregular breathing or stop breathing, artificial respiration or oxygen supply shall be given by trained personnel. If mouth-to-mouth breathing is used for rescue, it may cause danger to the rescuer. If harmful health effects persist or worsen, medical treatment should be sought. If you lose consciousness, you should be placed in a recovery position and seek medical treatment immediately. Keep the respiratory tract open. Untie clothes that are too tight, such as neckline, tie, belt or belt.

**Ingestion:** rinse your mouth with water. If you have false teeth, please take them off. Move the patient to a place with fresh air, rest and keep a position conducive to breathing. If the substance has been swallowed and the patient remains awake, drink a small amount of water. If the patient feels sick, he should stop, because vomiting is dangerous. It is forbidden to induce vomiting unless directed by a professional medical professional. If vomiting occurs, keep your head down to prevent vomit from entering the lungs. If harmful health effects persist or worsen, medical treatment should be sought. Don't give any oral substances to the unconscious. If you lose consciousness, you should be placed in a recovery position and seek medical treatment immediately. Keep the respiratory tract open. Untie clothes that are too tight, such as neckline, tie, belt or belt.

### 5. fire protection

**Extinguishing agent:** Use an extinguishing agent suitable for extinguishing surrounding fires.

**Special danger:** this substance is highly toxic to aquatic organisms and has long-term and lasting effects. Fire water contaminated by this product must be collected and it is forbidden to be discharged into any waterway (sewer or drain).



Harmful thermal decomposition products: decomposition products may include the following substances: carbon dioxide, carbon monoxide and metal oxides.

Precautions and protective measures for fire fighting: If there is a fire, evacuate all personnel from the disaster area and its vicinity to quickly isolate the site. Do not take action if there is any personal danger or you have not received proper training.

Special protective equipment for firefighters: Firefighters must wear appropriate protective equipment and positive pressure self-contained breathing apparatus (SCBA) to protect the whole face.

## 6. Emergency treatment of leakage

### Personal protective measures, protective equipment and emergency handling procedures

Non-emergency person Do not take action if there is any personal danger or you have not received proper training. Evacuate the surrounding area. Prevent irrelevant personnel and unprotected personnel from entering. Do not touch or walk through spilled substances. Provide adequate ventilation. Appropriate breathing apparatus should be worn when ventilation is insufficient. Wear appropriate personal protective equipment.

Emergency person Do not take action if there is any personal danger or you have not received proper training. Evacuate the surrounding area. Prevent irrelevant personnel and unprotected personnel from entering. Do not touch or walk through spilled substances. Provide adequate ventilation. Appropriate breathing apparatus should be worn when ventilation is insufficient. Wear appropriate personal protective equipment.

Environmental protection measures shall be taken to prevent spillage from spreading and flowing away, and to prevent spillage from contacting into soil, rivers, sewers and sewage pipes. If the product has caused environmental pollution (sewer, waterway, soil or air), please notify the relevant authorities. Water pollution substances. If released in large quantities, it can harm the environment. Collect spills.

### Containment and removal methods of leaked chemicals and disposal materials used.

Small leakage Move the container away from the leak area. Avoid producing dust. Using vacuum dust removal equipment equipped with HEPA filter will reduce the spread of dust. Put the leaked materials in a designated and marked waste container. Dispose of by a licensed waste disposal contractor.

Massive leakage Move the container away from the leak area. Approach the leak from the upwind. Prevent access to sewers, waterways, basements or confined areas. Avoid producing dust. Do not dry sweep. Vacuum dust removal with equipment equipped with HEPA filter, and put it in a closed and marked waste container. Dispose of by a licensed waste disposal contractor.

## 7. Product operation and storage

### Precautionary measures for safe handling

protective measure Wear appropriate personal protective equipment (see Part 8). Individuals with a history of skin allergy should not be employed in any operation related to this product. Avoid contact with eyes, skin or clothing. No eating. Avoid releasing into the environment. Keep in original containers or approved substitutes made of compatible materials, and keep the containers airtight when not in use. Product residues remain in empty containers and can be very dangerous. Do not reuse the container.

General occupational health advice Eating, drinking and smoking should be prohibited in the area where this substance is handled, stored and processed. Staff should wash their hands before eating and smoking. Take off contaminated clothes and protective equipment before entering the eating area. See Section 8 for additional information on health protection measures.

Conditions for safe storage, including any incompatibility. Store according to local regulations. Stored in original containers, protected from direct sunlight, in a dry, cool and well-ventilated area, away from taboos (see Part 10), food and drinks. Keep the container closed and sealed before using it. The opened container must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Adopt appropriate accommodation methods to prevent environmental pollution.

## 8. Contact control and individual protection

engineering control Good overall ventilation should be enough to control the content of airborne pollutants in workers' working environment.

Environmental contact control Emissions from ventilation or working process equipment should be tested to ensure that they meet the requirements of environmental protection laws and regulations. In some cases, it is necessary to modify smoke scrubbers, filters or process equipment in order to reduce emissions to acceptable levels.

Personal protective measures



Sanitary measures	After contact with chemicals, wash hands, forearms and face thoroughly before meals, smoking, going to the toilet and after work. Use appropriate technology to remove clothes that may have been contaminated. Contaminated work clothes shall not be taken out of the workplace. Contaminated clothes need to be cleaned before reuse. Ensure that the eyewash stand and safety shower are close to the workplace.
Eye/Face Protection	If the risk assessment results show that it is necessary to avoid exposure to liquid splashes, water mist, gas or dust, please wear safety glasses that meet the standards. If contact is possible, wear the following protective equipment, unless the evaluation results show that a higher degree of protection is needed: wear safety glasses with side covers.
Physical protection	
Hand protection	If the risk assessment results show that it is necessary, please always wear gloves that meet the standards of chemical corrosion resistance and impermeability when contacting chemical products. Considering the parameters specified by the glove manufacturer, check whether the gloves still maintain their protective performance during use. It should be pointed out that the breakthrough time of any glove material may be different for different glove manufacturers. Once the mixture contains several substances, the protective time of gloves cannot be accurately estimated.
Physical protection	The selection of personal protective equipment should be based on the type of work performed and the risks taken, and must be approved by professionals.
	The choice of other shoes with suitable skin protection and any other skin protection measures should be based on the tasks being performed and the risks involved, and should be approved by experts before handling the product.
Respiratory system protection	Due to the danger and possibility of exposure, please choose a respirator that meets the appropriate standards or certification. The respirator must be used according to the respiratory protection plan, and ensure the correct assembly, training and other important aspects of use.

## 9. Physical and chemical characteristics of products

Appearance (room temperature)	Paste solid	Alloy specific gravity	8.3~8.5
boiling point	not applicable	melting point	183°C
Evaporation pressure	not applicable	Volatilization rate	<0.1
Evaporation density	not applicable	Volatile volume percentage	<1%
Solubility in water	Completely insoluble	Volatile organic compound	not applicable
PH	not applicable	Odor valve	no data
condensation point	not applicable	Octanol/water partition coefficient	no data
colour	grey	smell	Slight odor

## 10. Stability and reactivity

activity	There is no test data related to the reactivity of this product or its components.
stability	This product is stable.
Dangerous reaction	Dangerous chemical reactions will not occur when stored and used under normal conditions. Conditions to be avoided There are no specific data.
Forbidden compound	There are no specific data.
Dangerous decomposition products	Under normal storage and use conditions, dangerous decomposition products will not be produced.

## 11. Toxicity data

Toxic reaction to human body: inhalation or ingestion of smoke during use may have harmful effects, and contact between skin and eyes may cause irritation and harm to matrix. Sudden influence: Not applicable.

Cumulative toxic effects: it may have toxic effects on blood, kidney, lung, nervous system, reproductive system, spleen, brain, digestive system, gastrointestinal tract, upper respiratory tract, skin, central nervous system, eyes, cornea and thyroid gland, and long-term exposure may cause organ failure.

## 12. Ecological information

Biodecomposition ability	No relevant information has been established
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Biological toxicity of water No relevant information has been established

### 13. Abandoned disposal

Waste should be avoided or reduced as much as possible. The disposal of products, solutions and their by-products shall meet the requirements of environmental protection, waste disposal regulations and local relevant regulations. Disposal of residues and non-renewable products by licensed waste disposal contractors. Wastes should not be discharged into sewers without disposal unless they fully meet the requirements of competent authorities in all jurisdictions. Packaging waste should be recycled. Incineration or landfill should be considered only when recycling is not feasible. Use safe methods to handle this product and its container. When handling and disposing of empty containers that have not been cleaned or flushed, care should be taken. Empty containers or liners may retain some product residues. Avoid spillage from spreading and flowing away, and avoid spillage from contacting into soil, rivers, sewers and sewage pipes.

### 14. Transport information

	China	UN	IMDG	IATA
United Nations dangerous goods number (UN number)	Unregulated.	Unregulated.	Not regulated.	Not regulated.
United Nations shipping name	-	-	-	-
United Nations hazard classification	-	-	-	-
Packaging category	-	-	-	-
environmental harm	None.	None.	No.	No.
environmental harm	-	-	-	-

### 15. Regulatory information

Safety, health and environmental regulations for related products There are no known specific national and/or regional regulations applicable to this product (including its components). List of Existing Chemicals in China (IECSC) Not sure.

List of prohibited substances All components are not listed in this catalogue.

List of prohibited substances for export All components are not listed in this catalogue.

List of toxic chemicals whose import and export are strictly restricted in China List of toxic chemicals whose import and export are strictly restricted in China

### 16. Other information

#### Issuing unit

Company name Guangdong an Chen Xi pin manufacturing co., ltd  
 Company address Changhong Ling Industrial Park, Shishan Town,  
 Nanhai District, Foshan City, Guangdong Province Tel: 0757-85506883

#### Release record

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 version 03

### disclaimer

To the best of our knowledge, the information contained here is accurate. However, the above-mentioned suppliers and any of their subsidiaries do not assume any responsibility for the accuracy or completeness of the information contained herein. The user is responsible for the final judgment of whether all substances are suitable. All substances will have unknown dangers, so be extra careful when using them. Although some dangers are described here, we can't guarantee that there are no other dangers.