



**SHENZHEN BBIEN TECHNOLOGY LIMITED**  
**B/O HANON TECHNOLOGY INDUSTRY LIMITED**

**Product Datasheet and MSDS**

**Sn42-Bi58 low temperature solder paste**

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1. 适用范围 (Application): 消费电子

此承认书仅适用本公司，交付于 SHENZHEN BBIEN TECHNOLOGY CO.,LTD

This file is provided by Shenzhen bbien technology Co.,Ltd

## 138degree melting low temperature solder paste LF-05 Sn42Bi58

### Brief Description for LF-05 Sn42Bi58

LF-05 Sn42Bi58 Pb-free tin bismuth solder paste is designed to enable low temperature surface mount assembly technology. The lead-free alloy in LF-05 Sn42Bi58 has a melting point 138°C, and has been successfully used with peak reflow profiles between 155°C and 190°C. The flux residue from LF-05 Sn42Bi58 is clear, colorless, and provides excellent electrical resistivity, exceeding industry standards and get good reflowing soldering process result.

Energy-saving by reducing the required reflow profile temperature, electricity consumption can be reduced by approximately 40% compared to SAC305. Reduction of electricity consumption results in reduction in CO<sub>2</sub> emissions, achieving both energy saving and environmental care.

### Technical datasheet

#### LF-05 Sn42Bi58 Solder Paste RoHS Compliance

This product meets the requirements of the RoHS(Restriction of Hazardous Substances) Directive, 2002/95/EC Article 4 for the stated banned substances.

### BELLCORE AND J-STD TESTS & RESULTS

BELLCORE AND J-STD TESTS & RESULTS			
Test	Result	Test	Result
J-STD-004A (IPC-TM-650)		J-STD-005 (IPC-TM-650)	
Flux Type (per J-STD-004A)	ROL0	Typical Solder Paste Viscosity Malcom (10rpm)	1300 poise
Flux Induced Corrosion (Copper Mirror)	Type L	Slump Test	Pass
Presence of Halide Oxygen Bomb followed by ion chromatography	<50ppm Br - <50ppm Cl -	Solder Ball Test	Pass
		Typical Tackiness	35g
		Wetting Test	Pass
SIR	Pass	BELLCORE GR-78	
		SIR	Pass
		Electromigration	Pass

### Technical Data Sheet

Specification and chemistry component

Specification	Sn42-Bi58
Appearance	Black Tacky paste
Packing	500g/jar; 250g/jar; 50g/jar; 100g/cartridge tube

#### Sn42-Bi58 Metal Chemical Composition:

Sort	Chemical composition (wt.%)							
	Sn	Bi	Ag	Pb	Fe	Cu	Al	Cd
Sn42-Bi58	42+-1	58±1	<0.0002	<0.01	<0.002	<0.005	<0.0002	<0.002

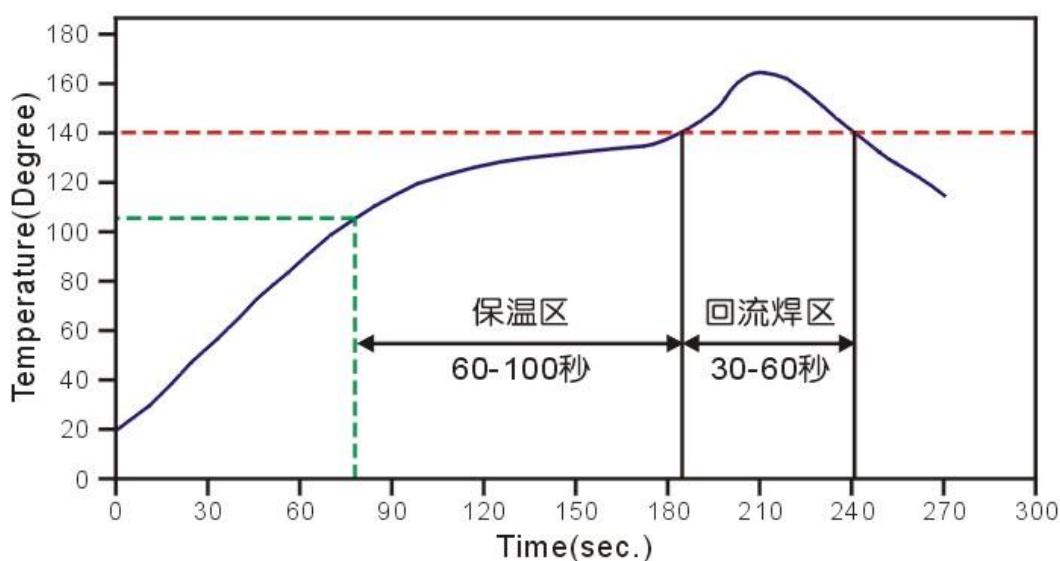
#### Physical Speciality

Sort	(°C) Melting Point	g/cm3 Spec. Gravity	MPa% Tensile Strength	
			MPa	%
Sn42-Bi58	138°C	8.62g/cm <sup>3</sup>	38	48

#### Reflowing Chart of Sn42-Bi58 Low Temperature Solder Paste

Heating rate	The Time Required to Reach 120 °C	Constant Temperature 80 - 130°C	Peak Temperature	> 180°C	Cooling Rate
1-3 °C/sec	< 60—90secs	60—120secs	< 170 ±5°C	< 40—80secs	<4°C / S

Recommended reflow process parameters



#### Feature of Sn42Bi58 solder paste

Reduces thermal damage to components and substrate

Energy saving is not the only benefit of a low temperature reflow profile. A low temperature profile reduces thermal damage to components during double-sided reflow and allows for use of

heat-sensitive paper phenolic substrates.

1. High insulation reliability

The flux solvent volatilizes even in low temperature reflow, eliminating reduction in insulation resistance arising from inadequate volatilization. TB48-M742 · T4AB48/58-M742 produces flux residue with high insulation reliability.

2. Enables elimination of a second or third reflow cycle when temperature sensitive components or connectors are used.

3. Reduces energy consumption in reflow ovens versus standard lead free alloys.

4. Reduces reflow process cycle time.

5. Delivers 8 Hour stencil life.

6. Potential eliminations of bar solder, wave soldering flux and energy costs associated with wave soldering.

7. Compatible with all commonly used lead free surface finishes (Entek HT; Alpha Star Immersion Silver, Immersion Tin, Ni/Au, SACX HASL, etc.)

**Usage of Sn42-Bi58 Solder Paste**

The Sn42Bi58 Bi series is designed to meet requirements for reliable solder joints in SMT PC board assemblies, this lead free no clean Bi solder paste can also apply for household-electrical products, which including hand-held electronic devices such as smart phones and tablets, computer motherboards, consumer electronic products, network servers, automotive systems, medical and military equipment and many others.

**Exported countries:**

Pakistan, UAE, South Korea, America, Mid-east countries, Brazil, India, Iran, Egypt, Turkey

**Greater Print Definition**

Microprint's small particle size of 5-45 $\mu\text{m}$  (-450+600 mesh), guarantees repeatable print definition to below 0.3mm for  $\mu\text{Bga}$  work

Type3 solder paste	25~45 $\mu\text{m}$
Type4 solder paste	22~38 $\mu\text{m}$
Type5 solder paste	15~25 $\mu\text{m}$
Type6 solder paste	10~18 $\mu\text{m}$
Type7 solder paste	5~12 $\mu\text{m}$

**Packing Details:**

Packing could be classified as can/bottle packing and syringe packing type.

Each jar/bottle holds the solder paste is 500g, 50g;

Each cartridge can load the solder paste is 100g

The packing materials can be separated into inner layer of a bubble box and outer package of a paper carton so as to better secure for shipping and transportation.

Customized logo: can be available when MOQ above 500kg

Production ability: 2tons each week

### Stencil Life and Cleaning

> 8 hours @ 30-45% RH and 20-25 °C

~ 4 hours @ 45-75% RH and 20-25 °C

#### Cleaning

BBIEN LF-05 low temperature tin bi solder paste Sn42Bi58 is no clean type of soldering paste, belongs to environmental friendly solder materials. Sn42Bi58 can also be cleaned using commercially available flux residue removers such as cleaning flux, which is available from BBIEN.

### Storage, Handling, and Shelf Life:

Keep solder paste into refrigeration is the recommended optimum storage condition for solder paste to maintain consistent viscosity, reflow characteristics, and overall performance. Sn42-Bi58 stencil and dispensing solder paste/cream should be stabilized at room temperature prior to printing. R520A should be kept at standard refrigeration temperatures, 3-8°C. Please contact BBIEN if you require additional advice with regard to storage and handling of this material. Shelf life is general 6 months from date of manufacture and held at 3-8°C.

### Photos of Sn42-Bi58 LF-05 no clean bi solder paste



# Material Safety Data Sheet

## 1、Product and Company Identification

Product Name: Sn42Bi58 low temperature solder paste
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Packing: 500g/jar 10kg/ctn; 100g/syringe, 10kg/ctn
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Manufacturer or supplier : Hanon Technology Industry Limited
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ADD: OFFICE 3A, 12/F, KAISER CENTRE, NO.18 CENTRE STREET, SAI YING PUN, HONG KONG
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## 2、Products Information: above

3.

Important notes	( acute ) Inbibe : high temperature when heat(above138°C upward),it will melt gradually.  Eat : Sick up.  Eye、skin : Protect skin and eyes when melting metal and high temperature  Environmental Impact : It is NON DGR Goods kept in appropriate way

#### 4、Fire Fighting Measures :

Special Fire-Fighting Procedures : No
Required Special Protective Equipment for Fire-Fighters : Firemen should wear exposure suit and air tank.

#### 5、Accidental Release Measures

Personal Precautions : Prevent powder into eyes during using; ware the protective glasses and gloves if possible.
Environmental Precautions : Prevent the powder or chemical dirt dispel with air and dispel with water,splashing matter put in airtight case.
Methods for Cleaning : Use the tools that can't cause light and equip clear up splashing down that prevent the powder dirt dispelling in air.

#### 6、Handling and Storage

Handling : Unable recycling material,should check the product and scrap up,handing carefully the empty case that possible remain powder, chemical dirt or soldering and will be dangerous,the person should read all the aphorism and defend measure on the case.
Storage : Keep in airtight case, deposited in cool, and airiness area.Prevent physics damage away from heat and flaring resource. Smoking, eating and drinking is not allowed during working with this materials

#### 7、Personal Protection

Personal Protection Equipment :

- Respiration : When producing into Hemihedral prevent small crystalline dirt veil ( 10-50 times exposition ) .
- Hand : Wearing all-sided observe press shield when in urgency.
- Skin & Body defend : Wearing defend gloves and cleaning long clothing.

Hygiene Measures : No smoking in working area ,bite and sup.Must washing hands after work and before bit and sup.

8、Physical and Chemical Properties

State of Substance : colorless liquid	Appearance : colorless liquid
Color : colorless	Odor : Monotony
pH cost : Not fit for	Boiling Point : extremly high (above500°C)
Decomposing Temperature : Not fit for	Flashpoint : Not fit for °F Not fit for °C Test : Not fit for Test Methods : Open Slot      Closed Slot
Self-Igniting Temperature : Not fit for	Explosion Limits : Not fit for
Vapor Pressure : (21.1°C) : 0	Vapor Density : No information
Density : 8.0~8.8 g/cm3	Dissolution : Not dissolve in water

9、Stability

Stability : Compose
Possible Hazard Reaction Under Special Conditions : No
Hazardous Decomposition Products : No

10、Toxicological Information

Acute Toxicity : It is NON DGR Goods

Local Reactions : No

Sensitivity : No

#### 11、Ecological information

Possible Environmental Impact/Environmental Run-offs : No

Water poisoning : No

Moving、biology pile : No

#### 12、Disposal considerations

Disposal Methods : Not fit for

No use or remain gas : Not fit for

Urgency status : Not fit for

#### 13、Transport information

International Transportation Regulations : Apply for all IATA DANGEROUS GOODS REGULATION

Apply for seaway,railway,airway and land transportation.

UN Reference No. : Fit for

Domestic Transportation Regulations : Preclusive according operation and notice proceeding about storage, should use hard container to pack, such as hard plastic carton.

Special Transportation way : Airway or sea way is available

#### 14、Regulatory information

Applicable Regulation : Labor safety sanitation act、Poisoning defend statute, castoff clear

#### 15、Other information

Ref. Document	AIR PRODUCTS MSDS、INTERNATIONAL MARITIME DANGEROUS GOODS CODE	
Department	Dept. Name : Engineering Dept	
	Hanon Technology Industry Limited	
	Title : Technician	Name(Signature):Dr.Deng
Phone No.	+86 075536852840	Sales E-mail:sales@bbien.cn
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