



## TECHNICAL DATA SHEET

Product Name: **LEAD FREE SOLDER BAR (Sn-3Ag-0.5Cu-0.06Ni-0.01Ge)**

Product No.: PF610-B

### PRODUCT DESCRIPTION & FEATURES

Environmental friendly, this alloy composition has eliminated lead for which might be harmful to human body, instead, we use silver, copper, nickel and germanium to replace lead. Produced by pure tin, silver, copper, nickel and germanium, impurities are lowed to the minimum.

### PACKING AVAILABILITY

- Packing per carton: about 20Kg.

### HANDLING AND STORAGE

Wash hand after skin contact with PF610-B, do not put near fire or flame, keep away from direct sunlight, and keep out of reach of children. This product is ready to use.

### PHYSICAL PROPERTIES

Liquids Temperature: +/- 219°C.

Specific Gravity: +/- 7.4

Alloy Composition (%):

Sn	Pb	Sb	Cu	Bi	Zn	Fe	Al	As	Cd	Ag	Ni	Ge
Rem.	< 0.1	< 0.12	0.3 ~0.7	< 0.1	< 0.002	< 0.02	< 0.002	< 0.03	< 0.002	2.5 ~3.5	0.04 ~0.08	0.005 ~0.02

\*Kindly refer to Material Safety Data Sheet of this product for further safety and technical information.

# MATERIAL SAFETY DATA SHEET

Page 1/4

## 1、CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL PRODUCT NAME : PF610-B
COMPANY INFORMATION :
NAME OF MANUFACTURER : SHENMAO TECHNOLOGY INC.
NAME OF SECTION : QUALITY ASSURANCE DEPARTMENT
ADDRESS : 51-6 Bei Tau Ri, Tanshui 251, Taiwan R.O.C.
TELEPHONE NUMBER: 886-2-26217627
FAX NUMBER: 886-2-2622-7326

## 2、COMPOSITION, INFORMATION OR INGREDIENT

Components-Chemical Name	wt. %	CAS No.
Tin (Sn)	96.43	7440-31-5
Silver (Ag)	3.0	7440-22-4
Copper (Cu)	0.5	7440-50-8
Nickel (Ni)	0.06	-----
Germanium (Ge)	0.01	-----

## 3、HAZARDS IDENTIFICATION

ADVERSE HUMAN HEALTH HAZARD : ①Vapors may irritate eyes, respiratory system and skin. ②Harmful by inhalation.
ENVIRONMENTAL EFFECTS : Not available
PHYSICAL AND CHEMICAL HAZARDS : Vapors may catch fire

## 4、FIRST AID MEASURES

<b>EYE CONTACT :</b> Gently rinse the affected eyes with clean water for at least 15 minutes. Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.
<b>SKIN CONTACT :</b> Remove all contaminated clothing, shoes and socks from the affected areas as quickly as possible, cutting them off if necessary. Wash the affected area under tepid running water using a mild soap. If irritation persists, arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.
<b>INHALATION :</b> Remove the victim from the contamination immediately to fresh air. If breathing is weak, irregular or has stopped, open his airway, loosen his collar and belt and administer artificial respiration.

**INGESTION :**

Give the person one or two glasses of water or solution of salt, try to get the victim to vomit.

Arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.

# MATERIAL SAFETY DATA SHEET

## 5、 FIRE FIGHTING MEASURES

EXTINGUISH MEDIA : Use alcohol resistant foam, carbon dioxide or dry chemical extinguishing agents.
FIRE-FIGHTING INSTRUCTIONS : Shut off fuel to fire if possible to do so without hazard. Evacuate area and fight fire from a safe distance. Apply water from a safe distance to cool and protect surrounding area. Firefighters should wear proper protective equipment.
FLASH POINT : Not applicable
EXPLOSION LIMIT : Not available

## 6、 ACCIDENTAL RELEASE MEASURES

Shut out all sources of ignition; No flare, smoking or flames in area.
Wear proper protective equipment.
For spills, wipe and scrape away with cloth or paper, take up and store in a sealed container.

## 7、 HANDLING AND STORAGE

HANDLING : Do not use fire near storage area. Wear proper protective equipment.
STORAGE : No special requirements.

## 8、 EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING MEASURES : Use only with adequate ventilation and in closed systems. Make available emergency shower and eye wash in the work area.
EXPOSURE GUIDELINES : ACGIH TLV: 0.1mg/m <sup>3</sup> (Silver) 2mg/m <sup>3</sup> (Tin)
PROTECTIVE EQUIPMENT : RESPIRATORY PROTECTION : Industrial canister gas masks.(Heating) EYE PROTECTION : Safety goggles. HAND, SKIN AND BODY PROTECTION : Rubber gloves. Selection of specific items such as boots, apron or full-body suit will depend on operation.

## 9、 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Gray bar
BOILING POINT	-----
VAPOR PRESSURE	<0.01mmHg(20°C)
MELTING POINT	219°C (Solder)
SPECIFIC GRAVITY	7.4g/cm <sup>3</sup> (Solder, 20°C)
SOLUBILITY (IN WATER)	Almost Insoluble

# MATERIAL SAFETY DATA SHEET

Page 3/4

## 10、 STABILITY AND REACTIVITY

CHEMICAL STABILITY :
Stable, hazardous polymerization will not occur.
INCOMPATIBILITY WITH OTHER MATERIALS :
Strong oxidizing agents, strong bases and strong acids.
HAZARDOUS DECOMPOSITION PRODUCTS :
Carbon oxide on burning.
HAZARDOUS POLYMERIZATION :
Will not occur.

## 11、 TOXICOLOGICAL INFORMATION

CORROSIVE AND IRRITANT PROPERTIES : Not available
ALLERGENIC AND SENSITIZING EFFECTS : Not available
ACUTE TOXICITY : Not available
SUB-ACUTE TOXICITY : Not available
CHRONIC TOXICITY : Animal drink water containing 0.18mg/L of lead may get lead poisoning. Rats ingested the 0.005mg/Kg of lead showed evidence of CMS disturbances.
CARCINOGENIC EFFECTS : Not available
MUTAGENIC EFFECTS : Not available
EFFECTS ON THE REPRODUCTIVE SYSTEM : Not available
TERATOGENIC EFFECTS : Not available

## 12、 ECOLOGICAL INFORMATION

BIODEGRADABILITY : Not available
BIOACCULATION : Not available

FISH TOXICITY : Not available
OTHER INFORMATION : Not available

13、 DISPOSAL CONSIDERATIONS

Dispose in compliance with local regulations.
Do not discharge into the environment.

14、 TRANSPORT INFORMATION

UN CLASS : Not applicable
UN NUMBER : Not applicable
No special requirements.

# MATERIAL SAFETY DATA SHEET

## 15、 REGULATORY INFORMATION

JAPAN STATUS EXISTING CHEMICAL SUBSTANCES(MITI) : Listed
US STATUS TSCA INVENTORY : Not Listed
EU STATUS EINECS : Not Listed (Polymer exemption)
LABELING ACCORDING TO EEC DIRECTIVES : HAZARD SYMBOL : T-Toxic RISK PHRASES : R 61-62-20/22-33 SAFETY ADVICES : S 53-45

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

## 16、 OTHER INFORMATION

REFERENCE: AIR PRODUCTS MSDS、 INTERNATIONAL MARITIME DANGEROUS GOODS CODE			
HAZARDOUS	NFPA	HMIS	LEVEL : 0~4 : From least to serious NFPA : National Fire protection Association rating identifies hazards during a fire emergency. HMIS : Hazardous Materials Identification System rating applies to process as packaged.
HEALTH	1	1	
FLAMMABILITY	1	1	
REACTIVITY	0	0	

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