SAFETY DATA SHEET
Asahi Solder Bar
Sn43/Pb43/Bi14
SDS #: EAM 1-25/5
Date of Preparation: September 2022

SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

1.1 Product Details:
Product Name : Asahi Solder Bar
Trade Name : Asahi Solder Bar Sn43/Pb43/Bi14
Use : Solder bar may be used in automated soldering for electronics and electrical assemblies.

1.2 Company's Identification:
Manufacturer's Name and Address : Singapore Asahi Chemical & Solder Industries Pte Ltd
47 Pandan Road
Singapore 609288
Telephone : (65) 6262-1616
Facsimile : (65) 6261-6311

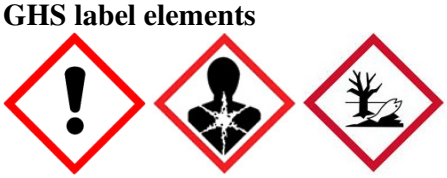
1.3 Contact Point:
Designation : Chemist
Emergency Telephone Number : (65) 6262-1616

SECTION 2: HAZARD IDENTIFICATION

GHS classification

Acute toxicity	
Oral	: Category 4
Inhalation	: Category 4
Carcinogenicity	: Category 2
Reproductive Toxicity	: Category 2
Specific target organ toxicity (repeated exposure)	: Category 2 (nerves, kidney, reproductive system)
Acute aquatic toxicity	: Category 1
Chronic aquatic toxicity	: Category 1

GHS label elements



GHS Signal Word: Warning

GHS Hazard Statement:

H302 Harmful if swallowed
H332 Harmful if inhaled
H351 Suspected of causing cancer
H361 Suspected of damaging fertility or the unborn child
H373 May cause damage to organs through prolonged or repeated exposure
H410 Very toxic to aquatic life with long lasting effects

GHS Precautionary Statement:

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust, fume, gas, mist, vapours and spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat or drink when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid releasing to the environment.
P281	Use personal protective equipment as required.

Response

P308, P313, P314	IF exposed or concerned: Get medical advice or attention if you feel unwell.
P304, P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301, P312, P330	IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P391	Collect spillage.

Storage

P405	Store locked up.

Disposal

P501	Dispose of contents or container to appropriate waste site in accordance with local and national regulations.

Other Hazards which do not result in Classification **:** Inhalation or ingestion of lead dust or fumes may result in headache vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia and leg, arm, and join pain.

SECTION 3: COMPOSITION/INFORMATION ON MATERIAL

Chemical Name	CAS No.	%	OSHA PEL(mg/m^3)	ACGIH TLY (mg/m^3)	Other Limits Recommended
Tin (Sn)	7440-31-5	43	2.0	2.0	
Lead (Pb)	7439-92-1	43	0.05	0.05	
Bismuth (Bi)	7440-69-9	14	-	-	
Total		**100**			

SECTION 4: FIRST AID MEASURES

Ingestion:
If victim is conscious and can swallow, dilute stomach contents with 2-4 cups of water or milk. Do not induce vomiting. Seek medical attention and never give anything by mouth to an unconscious person.

Eye Contact:
Flush eyes with plenty of water immediately for at 15 minutes. Seek medical attention.

Skin Contact:
Wash thoroughly with soap and warm water. Seek medical attention if irritation develops or persists.

Inhalation:
Remove victim from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Keep affected person warm and at rest medical oxygen may be administered, if available, where breathing is difficult. Seek immediate medical attention.

Most important symptoms/effects, acute and delayed:
Headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia and leg, arm, and joint pain.

Immediate medical attention, special treatment:
Call a doctor or poison control center for guidance.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media:
Use any means of extinction appropriate for surrounding fire conditions such as water spray, carbon dioxide, dry chemical, or foam.

Fire and explosion hazards :
Massive metal is not flammable or combustible, Finely divided lead dust or powder is a moderate fire hazard and moderate fire hazard and moderate explosion hazard when dispersed in the air at high concentrations and exposed to head, flame, or incandescents. Explosions may also occur upon contact with certain incompatible materials.

Specific hazards arising from the chemical:
Highly toxic lead oxide fumes may evolve in fires.

Fire Fighting Instructions:
If possible, move material from fire area and cool material exposed to flame. Highly toxic lead oxide fumes may evolve in fires. Fire fighters must be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup:
Control source of spillage if possible to do so safely. Clean up spilled material immediately, observing precautions in Section 8, Personal Protection. Molten metal should be allowed to solidify before cleanup. If solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment and use methods which will minimize dust generation. Place contaminated material in suitable labelled containers for recovery or disposal.

Environment Precautions:
Lead metal has limited bioavailability but its compounds can pose a severe threat to the aquatic and terrestrial environments. Contamination of water and soil should be prevented.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:
Wash hand thoroughly with soap and water prior to eating, drinking or smoking. Do not smoke while soldering. Avoid inhalation of vapors and contact with skin and eyes. Observe good industrial practices.

Conditions for safe storage, including any incompatibilities:
Store in a dry, covered area away from incompatible materials, strong acids and food or feedstuffs. Solid metal suspected of containing moisture should be THOROUGHLY DRIED before being added to a molten bath. Otherwise, entrained moisture could expand explosively and spatter molten metal out of the bath.

SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

Engineering Measures:
Use adequate local or general ventilation to maintain the concentration of lead fumes in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhausted system. Local exhaust is recommended for melting, casting, grinding, burning, and use of powders.

Personal Protection:
Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact when lead is processed. Appropriate eye protection should be worn where fume or dust is generated. Where hot or molten metal is handled, heat resistant gloves, goggles or face shield, and clothing to protect from hot metal splash should be worn. Safety type boots are recommended.

Respirators:
Where lead dust or fumes are generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-100 particulate filter cartridge). When exposure levels are unknown, a self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask should be worn.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Metallic rectangular solid bar
Odor	:	No odor
Solubility in water:	:	NA
Boiling Point(°C)	:	600°C
Melting Point(°C)	:	144 - 163°C
Vapor Pressure(mm of Hg at 20°C)	:	NA
Vapour Density (air=1)	:	NA
Percentage Volatiles (by Volume)	:	NA
Volatile Organic Compound (VOC)	:	NA
Evaporation Rate (butyl acetate=1)	:	NA
Specific Gravity (water=1 at 25°C)	:	8.99
Flash Point (°C)	:	NA
Auto-ignition Temperature(°C)	:	NE

SECTION 10: PHYSICAL HAZARDS (STABILITY AND REACTIVITY)

Chemical Stability:
Massive metal is stable under normal temperatures and pressures.

Possibility of Hazardous Reaction:
Data not available

Condition to avoid:
Contact with incompatible materials.

Incompatible Materials:
Lead reacts vigorously with strong oxidizers, such as hydrogen peroxide and chlorine trifluoride, and active metals, such as sodium and potassium. Powerdered lead metal in contact with disodium acetylide, chlorine trifluoridem sodium carbide or fused ammonium nitrate poses a risk of explosion. Solution of sodium azide in contact with lead metal can form lead azide, which is a detonating compound. A lead-zirconium alloy (10-70% Zr) will ignite when struck with a hammer.

Hazardous Decomposition Products:
High temperature operations will generate highly toxic lead oxide fume. Lead oxide is highly soluble in body fluids and the particle size of the metal fumes is largely within the respirable size range, which increases the likelihood of inhalation and deposition of the fume within the body.

SECTION 11: TOXICOLOGICAL INFORMATION

General:
Lead accumulates in bone and body organs once it enters the body. Elimination from the body is slow. Initial and periodic medical examinations are advised for persons repeatedly exposed to levels above the exposure limits of lead dust or fumes. Once lead enters the body, it can affect a variety of organ systems, including the nervous system, kidneys, reproductive system, blood formation, and gastrointestinal system. The primary routes of exposure to lead are inhalation or ingestion of dust and fumes.

Acute:

Skin/Eye : Contact with dust or fume may cause local irritation but would not cause tissue damage.

Inhalation : Exposure to lead dust or fume may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia, and pain in legs, arms, and joints. An acute, short-term dose of lead could cause acute encephalopathy with seizures, coma, and death. However, short-term exposure of this magnitude is rare. Kidney damage, as well as anemia, can occur from acute exposure.

Ingestion : Symptoms due to ingestion of lead dust or fume would be similar to those from inhalation. Other health effects such as metallic taste in the mouth and constipation or bloody diarrhea might also be expected to occur.

Long term (chronic) overexposure:
Prolonged exposure to lead dust and fume may produce many of the symptoms of short-term exposure and may also cause central nervous system damage, gastrointestinal disturbances, anemia, and, rarely, wrist drop. Reduced hemoglobin production has been associated with low lead exposures. Symptoms of central nervous system damage due to moderate lead exposure include fatigue, headaches, tremors and hypertension. Very high lead exposure can result in lead encephalopathy with symptoms of hallucinations, convulsions, and delirium. Kidney dysfunction and possible injury has also been associated with chronic lead poisoning. Chronic over-exposure to lead has been implicated as a causative agency for the impairment of male and female reproductive capacity. Pregnant women should be protected from excessive exposure as lead can cross the placental barrier and unborn children may suffer neurological damage or developmental problems due to excessive lead exposure in pregnant women.

SECTION 12: ECOLOGICAL INFORMATION

Mobility & Bioaccumulation : Non-volatile material
Biodegradability : Non biodegradable
Aquatic Toxicity : Lead compounds are not particularly mobile in the aquatic environment but can be toxic to organisms, especially fish, at low concentrations. Water hardness, pH and dissolved organic carbon content are factors which regulate the degree of toxicity.

SECTION 13: DISPOSAL INFORMATION

Dispose according to federal, state and local regulations. If in doubt, contact Singapore Asahi.

SECTION 14: TRANSPORT INFORMATION

UN Number
ADR/RID:- IMDG:- IATA-DGR:-

UN proper shipping name
ADR/RID : Not dangerous goods
IMDG : Not dangerous goods
IATA-DGR : Not dangerous goods

Transport hazard class
ADR/RID:- IMDG:- IATA-DGR:-

Packaging group
ADR/RID:- IMDG:- IATA-DGR:-

Special shipping instruction
No data available

SECTION 15: REGULATORY INFORMATION

a. Proposed classification : Harmful.
b. Risk phrase
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed
R36/37/38 Irritating to the eyes, respiratory system and skin.
c. Safety phrase
S23 Do not breath fume or vapor.
S24/25/26 Avoid contact with skin or eyes. In case of contact with skin, rinse immediately with plenty of water.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S59 Refer to manufacturer/supplier fro information on recovery/recycling.

SECTION 16: OTHER INFORMATION

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THE COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED.
HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.
*optional

NE = Not Established
NA = Not Applicable
PEL = Permissible Exposure Level