SAFETY DATA SHEET

Alloy Sn63-Pb37 WS 488

Safety Data Sheet according to GB/T 16483-2008 and GB/T 17519-2013

Section 1. Chemical product and company identification

GHS product identifier : Alloy Sn63-Pb37 WS 488

GHS reference number : GHS115

Product type : Solid. [Solder Paste]

Identified uses

Not applicable.

Supplier's details : International:
AIM
9100 Henri Bourassa East
Montreal, QC
H1E 2S4
(514) 494-2000

In China:
AIM Solder (CHANGXING) Company Limited
No.1208-D Chenwang Rd., Taihu St.
Changxing County, Huzhou, Zhejiang
0572-6683800

AIM Solder (SHANGHAI) Company., Limited
Room 302-c50, No. 3, Lane 1509, Xinzhen Road, Minhang District, Shanghai
0572-6683800

In Malaysia:
AIM Solder (Malaysia)
No. 2A, Jalan Industri Seri Juru,
Taman Industri Seri Juru, 14000 Bukit Mertajam,
Pulau Pinang, Malaysia
+6012 800 1936

Emergency telephone number (with hours of operation) : INFOTRAC
North America: (800) 535-5053
International: (352) 323-3500

Section 2. Hazards identification

Classification of the substance or mixture according to GB 13690-2009 and GB 30000-2013

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
TOXIC TO REPRODUCTION - Category 1B
TOXIC TO REPRODUCTION - Effects on or via lactation
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Section 2. Hazards identification

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May damage fertility or the unborn child.
May cause harm to breast-fed children.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves, protective clothing and eye or face protection. Avoid release to the environment. Do not breathe dust. Avoid contact during pregnancy or while nursing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not handle until all safety precautions have been read and understood.

Response : Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. IF exposed or concerned: Get medical advice or attention.

Storage : Store locked up.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : For all alloys Sn - Pb WS488

CAS number/other identifiers

CAS number : Not applicable.

EC number : Mixture.

Ingredient name	%	CAS number
Tin	50 - 60	7440-31-5
Lead	30 - 40	7439-92-1
Terpineol	0.1 - 10	8000-41-7
Rosin	0.1 - 10	8050-09-7
bis(2-(2-methoxyethoxy)ethyl) ether	0.1 - 10	143-24-8
Amines, tallow alkyl, ethoxylated	0.1 - 10	61791-26-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Section 4. First aid measures

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 4. First aid measures

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid contact during pregnancy or while nursing. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Tin	**ACGIH TLV (United States, 3/2020).** TWA: 2 mg/m³, (as Sn) 8 hours. Form: Inhalable fraction
Lead	**GBZ 2.1 (China, 8/2019).** PC-TWA: 0.05 mg/m³, (as Pb) 8 hours. Form: dust PC-TWA: 0.03 mg/m³, (as Pb) 8 hours. Form: fume
Rosin	**ACGIH TLV (United States, 3/2020). Skin sensitizer. Inhalation sensitizer.**

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Solder Paste]

Color : Dark grey.

Odor : Amine like. [Slight]

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.
Metallic part of product is nonflammable. The organic medium may be flammable if exposed to direct flame.

Lower and upper explosive (flammable) limits : Not applicable.

Vapor pressure : Not available.

Vapor density : Not applicable.

Relative density : Not available.

Solubility : Partially soluble in the following materials: METHANOL.
Insoluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Dynamic: 350 to 1200 mPa·s (350 to 1200 cP)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Terpineol	LD50 Oral	Rat	4300 mg/kg	-
Rosin	LD50 Oral	Rat	7600 mg/kg	-
bis(2-(2-methoxyethoxy) ethyl) ether	LD50 Dermal	Rat	>6900 mg/kg	-
	LD50 Oral	Rat	3850 mg/kg	-
Amines, tallow alkyl, ethoxylated	LD50 Dermal	Rat	>10 g/kg	-
	LD50 Oral	Rat	500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Terpineol	Eyes - Mild irritant	Mammal - species unspecified	-	12.5 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
bis(2-(2-methoxyethoxy) ethyl) ether	Eyes - Mild irritant	Rabbit	-	500 mg	-
Amines, tallow alkyl, ethoxylated	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 100 uL	-

Sensitization

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Conclusion/Summary : Overexposure to fumes may cause irritation to the respiratory tract, digestive system and to the eyes. Overexposure to tin oxide fumes may result in benigne pneumoconiosis (stannosis).

Reproductive toxicity

No known significant effects or critical hazards.

Teratogenicity

Section 11. Toxicological information

No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Alloy Sn63-Pb37 WS 488 Lead	Category 2 Category 2	- -	- -

Aspiration hazard

No known significant effects or critical hazards.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Section 11. Toxicological information

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : May cause harm to breast-fed children.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information : To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Lead	Acute EC50 105 ppb Marine water	Algae - Chaetoceros sp. - Exponential growth phase	72 hours
	Acute EC50 0.489 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 8000 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 530 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 0.594 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.44 ppm Fresh water	Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.25 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.03 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks
bis(2-(2-methoxyethoxy) ethyl) ether	EC10 2871 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
	EC50 8996 mg/l	Aquatic plants - Pseudokirchneriella subcapitata	72 hours
	EC50 7467 mg/l	Daphnia	48 hours
	LC50 >5000 mg/l	Fish - Brachydanio rerio	96 hours
Amines, tallow alkyl, ethoxylated	Acute LC50 2.6 µg/l Fresh water	Crustaceans - Thamnocephalus platyurus - Nauplii	48 hours
	Acute LC50 2350 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 650 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence/degradability

Not available.

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Terpineol	2.6	24.13	low
Rosin	1.9 to 7.7	-	high
bis(2-(2-methoxyethoxy) ethyl) ether	-0.84	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	China	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

China inventory (IECSC) : All components are listed or exempted.

List of Goods banned for Importing

None of the components are listed.

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

International regulations

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Lead (Pb)	Heavy metals - Annex 1	Listed

International lists

National inventory

Australia : Not determined.

Canada : Not determined.

Europe : Not determined.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined

New Zealand : Not determined.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : All components are listed or exempted.

United States : Not determined.

Section 16. Other information

History

Date of printing : 5/6/2024

Date of issue/Date of revision : 5/6/2024

Date of previous issue : 4/24/2024

Version : 0.18

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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