



SAFETY DATA SHEET

User must review the contents of this (SDS) and determine what is applicable to their own country laws under Health and Safety and apply them as necessary. This (SDS) will not reference every countries Health and Safety Laws. It is the user's responsibility to determine what is applicable to them, including but not limited to review of any specific chemical lists and apply the requirements as necessary.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: COPPER AND SILVER ALLOY MIXTURE

SDS Number: SDS-5696

Revised Date: 11 APRIL 2018

Product Use: INDUSTRIAL USE: Metal alloy mixture of silver and copper. Use is strictly based on the individual customer needs and requirements.

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2. HAZARDS IDENTIFICATION**PRIMARY ROUTES OF ENTRY:**

√ Eye √ Inhalation √ Skin √ Ingestion NTP IARC OSHA √Not Listed

CARCINOGEN LISTED IN:**GHS**Hazard statement(s)

H303 May be harmful if swallowed
 H335 May cause respiratory irritation

Precautionary statement(s)

P233 Keep container tightly closed
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P270 Do not eat, drink or smoke when using this product
 P273 Avoid release to the environment
 P280 Wear protective gloves/protective clothing/eye protection/face protection
 P362 +P364 Take off contaminated clothing and wash before reuse
 P301 + P314 IF SWALLOWED: Get Medical advice/attention if you feel unwell
 P302 +P352 IF ON SKIN: Wash with plenty of soap and water
 P304 + 341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
 P305 + 351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)

Classification:

Specific target organ-single exposure (Category 3) respiratory system

POTENTIAL HEALTH EFFECTS:

Eye Contact: May cause irritation. Severe eye damage may result from hot molten metal being splashed into the eyes.

Ingestion: May cause irritation.

Inhalation: Inhalation of fume or dust may cause local irritation to the respiratory system.

Skin Contact: Hot molten metal may cause burns to the skin. May cause irritation.

Chronic:

COPPER: Overexposure discoloration of skin and hair. Repeated inhalation can cause chronic respiratory disease. Ingestion may cause liver and kidney damage. Symptoms of systemic copper poisoning may include: capillary damage, headache, central nervous system excitation with jaundice, convulsions and possible coma.

SILVER: Chronic skin contact or ingestion of silver powder, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.

NOTES:



WARNING: This product can expose you to chemicals including [lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

The Indium Corporation does not recommend, manufacturer, market or endorse any of its products for human consumption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #/EINECS	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
COPPER	28-80	7440-50-8/231-159-6			
		(US)	0.1	0.2	-
		(EU)	-	0.2 (fume)	2(dust)
		(Canada)	-	0.2	0.6
		(Singapore)	0.2(fume)	1(dust)	-
		(Mexico)	0.2	-	2
		(China)	-	0.2(fume)	0.6(fume)
SILVER	20-72	7440-22-4/231-131-3			
		(US)	0.01	0.1	-
		(EU)	-	0.1	-
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(Mexico)	-	0.1	-

N.E. = Not established

4. FIRST AID MEASURES

Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: Not established. **Method:** Not established.

Auto-ignition Temperature: Not established.

Flammable Limits: Limits not established. Massive solid metal is not flammable; however dust or powder may be flammable/combustible. Avoid dust generation. Copper dust may be flammable.

Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions.

Special Fire Fighting Procedures: Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Contain spill. If molten, cool to allow metal to solidify. If a solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment. DO NOT SWEEP. Use a vacuum, place in barrels and return to process if applicable. Otherwise, dispose of following all Federal, State and Local regulations. Metal may have reclaim value. Avoid any dust generation.

7. HANDLING AND STORAGE

Handling
Precautions:

User should review their own workplace situations and uses and determine the best guidelines for handling. PPE should be assessed based on the particular use or uses. Melting or grinding of mixed alloys should be reviewed. Add dry metals to a melt pot operation to avoid any potential hazards when melting. Ventilation is recommended when there is a potential for work place exposures to metal fume or particulate. Permissible exposure levels in high fume or particulate tasks should be assessed so that they are not exceeded. Ensure engineering controls are used to protect the worker.

Safety glasses or goggles shall be worn. A face shield should be added when handling metal where there is a potential for splash hazards. Additional personal protective equipment should be used when handling molten metals: face shield, hot gloves for handling hot metals, sleeve protector for splash hazards if handling large volumes where there is a potential for splash and burns from hot metal. Additional protection includes apron.

Keep unauthorized personnel away when handling molten metals.

Exhaust ventilation should be provided for any metal fume when heating is being conducted.

Store materials in the proper container. Hot metals should be placed into a compatible container.

Storage Precautions: Store product in a cool, dry area away from incompatible materials (metals and moisture). Close container when not in use, where applicable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation is recommended to control any air contaminants. Control concentration of all components so that their exposure levels are not exceeded.

Personal protection:

Eyes: Chemical safety glasses/goggles and face shield with molten metal.

Respirator: An authority approved or compliant marked air-purifying respirator with a fume/dust chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated. Wear respirator in dusty environment.

Skin: Gloves-leather or impervious (vinyl) type. Heat resistant gloves if handling hot metal. Safety type boots. Personal protective equipment is recommended when working with molten metal to avoid burns.

Other: Lab coat, safety shower and eye-wash/shower fountain in work area. Avoid the use of contact lenses in high fume areas.

Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid metal/powder	Boiling Point:	4,703F (copper), 4,014F (silver)
Odor:	Odorless	Melting Point:	1,981F (copper), 1,760F (silver)
Specific Gravity:	varies with percentage	pH:	Not applicable
Vapor Pressure:	Not applicable.	Solubility in Water:	Insoluble
Vapor Density:	(air=1) Not applicable.		
Molecular weight:	copper- 63.55 g/mol, silver 107.87g/mol		

10. STABILITY AND REACTIVITY

General:	Stable.
Conditions to Avoid:	Not established.
Incompatible Materials:	Strong oxidizing agents, sulfur compounds, strong bases, halogens, strong acids
Hazardous Decomposition / Combustion:	Harmful toxic oxide fumes may form at elevated temperatures.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: National Toxicity Program (NTP):	No
Occupational Safety & Health Administration (OSHA):	No
U.N. International Agency for Research on Cancer (IARC):	No

LD50:	Not established	LC50:	Not established
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RTECS#
Copper GL5325000
Silver: VW3500000

12. ECOLOGICAL INFORMATION

No information available on mixture.

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Scrap metal alloy usually has value. Contact a commercial reclaimer for recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements. Not regulated under US DOT (United States Department of Transportation). Non-hazardous under shipping modes.

North America Emergency Guide Book – Not applicable

UN – none (solid metal)

Marine pollutant: No

15. REGULATORY INFORMATION

The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

This product has been classified in accordance with the guidelines set by the Dept of Industrial Health of the Republic of Singapore.

California PROP 65(Safe Drinking Water Standard): WARNING : This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace levels lead)

SARA 313 Listing - 40 CFR 372.65: Silver and Copper

All ingredients are listed on the EPA TSCA Inventory and the Domestic Substance List.

This product has been classified in accordance with the Mexican guidelines, NOM-018-STPS-2015 and NOM-010-STPS-2014.

In China:

This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007.

Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals

GB 30000.2-29-2013, Rules for classification and labeling of chemicals. (GHS)

GB/T 16483-2008, GB/T 17517-2013

This product has been classified in accordance with: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS).

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	1
	Fire:	0
	Reactivity:	0

Revised Date: 11 APRIL 2018

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