MATERIAL SAFETY DATA SHEET
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 03-00

CHEMICAL IDENTITY

LABEL IDENTITY: GOLD - TIN
CHEMICAL NAME/SYNONYMS: ALLOY
FORMULA: AuSn
CHEMICAL FAMILY: METAL
CAS REGISTRY NUMBER: GOLD = 7440-57-5; TIN = 7440-31-5
HAZARDOUS INGREDIENTS: NOT ESTABLISHED

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR: Silver/gray, odorless
VAPOR DENSITY: Varies
VAPOR PRESSURE: Varies
VOLATILE BY WEIGHT: Essentially zero
SOLUBILITY IN WATER: Insoluble
MELTING POINT: 280° C = 80% Au / 20% Sn
SPECIFIC GRAVITY: Varies

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Non-flammable as a solid
FLAMMABILITY: Non-flammable
EXTINGUISHING MEDIA: This material is non-combustible. Use appropriate extinguishing agent for surrounding fires. Do not use water to extinguish fires around operations involving molten metal, due to the potential for steam explosion.
SPECIAL FIRE FIGHTING PROCEDURES: Self contained breathing apparatus should be worn when fighting metal dust fires. High levels of dust or fine particles in the air may ignite or explode.
UNUSUAL FIRE & EXPLOSION HAZARDS: None known
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HEALTH HAZARD INFORMATION

ROUTES OF ENTRY

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<tr>
<th>ROUTE OF ENTRY</th>
<th>INHALATION:</th>
<th>SKIN:</th>
<th>INGESTION:</th>
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<tr>
<td>INHALATION</td>
<td>Yes</td>
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<td>SKIN</td>
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TARGET ORGANS

Lungs

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:
Individuals who may have had allergic reactions to metals or sensitivity, may encounter rash or dermatitis, if skin contact with this product occurs. Persons with impaired pulmonary functions, may incur further impairment if dust or fumes are inhaled.

EFFECTS OF OVEREXPOSURE (acute and chronic):
- Tin – Inhalation; dust or fumes may cause an apparent benign pneumoconiosis called stannosis, which is reported not to be disabling.
- Gold – Generally none toxic. Skin; may cause contact dermatitis.

EMERGENCY FIRST AID PROCEDURES:

INGESTION
Obtain medical attention at once.

INHALATION
Breathing difficulty, caused by inhalation of dust or fumes requires removal to fresh air. If breathing has stopped perform artificial respiration and seek medical attention at once.

SKIN CONTACT
Skin cuts and abrasions can be treated by standard first aid. Skin contamination with dust or powder can be removed with soap and water. If irritation persists obtain medical assistance.
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EYE CONTACT
Dust or powder should be flushed from the eyes with running water for 15 minutes. If irritation persists obtain medical assistance.

REACTIVITY DATA

STABILITY
Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY
None known

INCOMPATIBILITY (MATERIALS TO AVOID)
Acetylene, Ammonia, Acids and Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS
None under proper usage conditions.

HAZARDOUS POLYMERIZATION
Will Not Occur

CONDITIONS TO AVOID
Conditions which create dust or fumes

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
In solid form this material poses no special clean up problems. Use normal clean-up procedures; wet sweeping or HEPA vacuum, for clean-up of dust or powder.

Do not use compressed air for cleaning.

WASTE DISPOSAL METHOD:
Because of its high intrinsic value this material should be reclaimed. Dispose of in accordance with all applicable Federal, State and Local Regulations

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION
Use an appropriate NIOSH approved respirator if airborne dust concentration exceed the PEL or TLV.

LOCAL EXHAUST
Recommended, when cutting, grinding or melting or any other operation where dust or fumes are created.

PROTECTIVE GLOVES
Recommended to prevent mechanical irritation.

EYE PROTECTION
Safety glasses are recommended.

OTHER PROTECTIVE EQUIPMENT
Eye wash fountain should be readily available in areas of use or handling.
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GENERAL: Recommended.
EXPOSURE LIMITES: Not established for product as whole.

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
In solid form this material poses no special problems. Store metal in a dry area.
Do not store adjacent to acids

TRANSPORTATION REQUIREMENTS

DOT CLASS: None
UN NUMBER: None
PRODUCT RQ: None
DOT SHIPPING NAME: Not Regulated
TECHNICAL SHIPPING NAME: Metal Alloy

PRECAUTIONARY LABELING NONE

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL. ANGSTROM SCIENCES MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE	ND= NO DATA FOUND