

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29CFR 1910.1200

LEAD-FREE ALLOY

Rev. 09/08/09
DGS Lead-Free Solder

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1. PRODUCT INGREDIENTS

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Weight %</u>	<u>Permissible Air Concen.(mg/cu.m.)</u>		<u>SARA Title III Sect.313Chem.</u>
			<u>OSHA</u>	<u>ACGIH</u>	
TIN	7440-31-5	>90%	2.0	2.0	NO
COPPER	7440-50-8	<5%	.1	.1	NO
SILVER	7440-22-4	<.5%	.1	.1	NO

2. PHYSICAL DATA

Material is **SOLID** Appearance and Odor **SILVER-WHITE METAL, ODORLESS, VARIOUS SHAPES & SIZES**

Melting Point **Approx. 444°F** Boiling Point **<4000°F** Specific Gravity **Approx. 7.1** Vapor Density **N/A**

Solubility in Water **INSOLUBLE** Vapor Pressure **N/A** Evaporation Rate **N/A** PH **N/A**

3. FIRE AND EXPLOSION DATA

Flash Point **N/A** Flammable Limits **N/A** Auto Ignition Temp. **N/A**

Unusual Fire and Explosion Hazards
IN EXTREMELY HIGH TEMPERATURE FIRE OR IN CONTACT WITH CERTAIN ACIDS, MAY EMIT TOXIC FUMES. USE SELF-CONTAINED RESPIRATORY SYSTEM.

Fire Extinguishing Agents Recommended
USE CO2 OR DRY CHEMICAL ON SURROUNDING FIRE.

Fire Extinguishing Agents to Avoid
DO NOT USE WATER ON FIRE WHERE MOLTEN METAL IS PRESENT

Special Fire Fighting Precautions
USE NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS AND FULL BODY PROTECTIVE CLOTHING.

4. HEALTH HAZARD INFORMATION

Primary Routes of Entry
INGESTION X INHALATION ABSORPTION

Carcinogenicity

THIS PRODUCT HAS NOT BEEN LISTED AS A SUSPECT CARCINOGEN BY NTP, IARC OR OSHA. THIS PRODUCT CONTAINS LESS THAN .02% LEAD.

Acute Overexposure(symptoms and effects)

SEVERE SHORT-TERM OVEREXPOSURE MAY LEAD TO CENTRAL NERVOUS SYSTEM DISORDERS, CHARACTERIZED BY FEVER, BODYACHE AND CHILLS. IT SHOULD BE RECOGNIZED THAT EXPOSURE OF THIS MAGNITUDE IN AN INDUSTRIAL ENVIRONMENT IS EXTREMELY UNLIKELY.

Chronic Overexposure(symptoms and effects)

PROLONGED EXPOSURE TO FUMES OF MOLTEN METAL OR FLUX USED DURING SOLDERING OPERATION MAY CAUSE IRRITATION OF THE RESPIRATORY TRACT.

Medical Conditions Possibly Aggravated By Exposure

THE SYMPTOMS OF IMPAIRED PULMONARY FUNCTIONS OR ILLNESS MAY BE WORSENERD BY FUME IRRITANTS.

First Aid Procedures

INHALATION: REMOVE FROM EXPOSURE AND CALL A PHYSICIAN.

SKIN CONTACT: WASH AFFECTED AREAS WITH SOAP AND WATER. IF BURNS SHOULD OCCUR FROM MOLTEN METAL, TREAT FOR BURN AND GET IMMEDIATE MEDICAL ASSISTANCE.

EYE CONTACT: FLUSH EYES WITH WATER FOR 15 MINUTES, CALL A PHYSICIAN.

INGESTION: INGEST LARGE QUANTITIES OF WATER, CALL A PHYSICIAN.

5. PRECAUTIONS/PROCEDURES

OVERHEATING OF ALLOY CAN PRODUCE METAL FUMES AND OXIDES. MACHINING OPERATIONS SUCH AS GRINDING, SAWING OR BUFFING CAN GENERATE AIRBORN PARTICULATES IN THE WORK AREA. EXPOSURE LEVELS INDICATED IN SECTION 1 ARE RELEVANT TO THESE AND OTHER OPERATIONS.

Normal Handling

USE OF APPROVED RESPIRATORS IS REQUIRED FOR APPLICATIONS WHERE ADEQUATE VENTILATION CANNOT BE PROVIDED. ACTIVITIES WHICH GENERATE EXCESSIVE DUST OR FUMES SHOULD BE AVOIDED.

Spill or Leak

ANY METHOD THAT KEEPS DUST TO A MINIMUM IS ACCEPTABLE. VACCUMING IS PREFERRED. USE OF APPROVED RESPIRATORY PROTECTION WHERE POSSIBILITY OF DUST/FUME EXPOSURE EXISTS. DO NOT USE COMPRESSED AIR FOR CLEANING.

Personal Hygiene

AVOID INHALATION OR INGESTION. PRACTICE GOOD HOUSEKEEPING AND PERSONAL HYGIENE PROCEDURES.

Engineering Controls

LOCAL EXHAUST VENTILATION IS RECOMMENDED FOR DUST AND/OR FUME GENERATION OPERATIONS WHERE AIRBORN EXPOSURES MAY EXCEED PERMISSIBLE AIR CONCENTRATIONS.

Storage

GENERAL STORAGE PROCEDURES ACCEPTABLE.

6. PERSONAL PROTECTIVE EQUIPMENT

USE NIOSH/MSHA APPROVED RESPIRATORS OR AIR SUPPLIED RESPIRATOR WHEN SOLDERING IN A CONFINED SPACE OR WHERE LOCAL EXHAUST OR VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV.

Eyes and Face

SAFETY GLASSES RECOMMENDED WHERE THE POSSIBILITY OF GETTING DUST PARTICLES IN EYES EXISTS OR WHEN HANDLING MOLTEN METAL.

Other Clothing and Equipment

GLOVES AND OTHER PROTECTIVE CLOTHING RECOMMENDED TO PROTECT SKIN FROM CONTACT WITH MOLTEN METAL.

7. REACTIVITY DATA

Stability: STABLE

Conditions to Avoid: NOT APPLICABLE

Incompatibility:

AVOID STRONG ACIDS, SULFUR AND CHLORINE

Hazardous Decomposition Products: REACTION WITH STRONG ACIDS CAN PRODUCE TOXIC ORGANIC OR INORGANIC TIN COMPOUNDS.

8. ENVIRONMENTAL

Regulated by DOT? No

Waste Disposal Method TIN AS A PURE METAL AND TIN/COPPER ALLOYS PRESENT NO PROBLEM FOR DISPOSAL AND ARE , IN FACT, RECOVERED DUE TO THEIR ECONOMIC VALUE.

9. ADDITIONAL INFORMATION

Precautions to be taken in handling and storing: NONE

Other Precautions: NONE

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