

MATERIAL SAFETY DATA SHEET

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Q-Pearl Solder Spheres - LF88 (Sn87.1/Ag2.0/In10.5/Sb0.4)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Q-Pearl Solder Spheres - LF88 (Sn87.1/Ag2.0/In10.5/Sb0.4)
PRODUCT DESCRIPTION: Q-Pearl Solder Spheres - LF88

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Content</u>	<u>CAS</u>	<u>EINECS</u>
Tin	86.6 - 87.6	7440-31-5	231-141-8
Silver	1.8 - 2.2	7440-22-4	231-131-3
Indium	10.3 - 10.7	7440-74-6	231-180-0
Antimony	0.2 - 0.6	7440-36-0	231-146-5

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYES: Fumes from this and other soldering products may cause eye irritation.

SKIN: Fumes from this and other soldering products may cause skin irritation.

INGESTION: Ingestion of this or other soldering products may cause headache, nausea, and muscular pain.

INHALATION: Inhalation of the fumes from this or other soldering products may cause headache, nausea and muscular pain.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

SKIN: Discomfort or rash.

INHALATION: Irritation of the pulmonary system.

CHRONIC: Prolonged or repeated exposure due to ingestion may cause anemia, insomnia, weakness, constipation and abdominal pain.

Prolonged or repeated exposure due to skin exposure and inhalation may cause skin rash and damage to the mucous membranes.

CARCINOGENICITY: Not listed as a carcinogen by NTP, OSHA, or ACGIH.

MEDICAL CONDITIONS AGGRAVATED: Pre-existing conditions of the lungs, kidneys, nervous system and possibly reproductive systems; diseases of the blood forming organs

ROUTES OF ENTRY: Inhalation, ingestion, eye or skin contact.

4. FIRST AID MEASURES

EYES: MOLTEN PRODUCT: Cool burns with plenty of low-pressure water. Get immediate medical attention. **SOLID PRODUCT:** Remove any contact lenses. Remove any remaining foreign matter. Flush eyes with copious amounts of water, and get medical attention if irritation develops.

SKIN: MOLTEN PRODUCT: Immediately cool skin burns with water and cold packs for at least 15 minutes. Do not put ice directly on the skin. Do not attempt to remove solidified product from the skin, as damage may result. Get immediate medical attention. **SOLID PRODUCT:** Wash skin with soap and water. Get medical attention if irritation develops.

INGESTION: If person is conscious, immediately give 2 glasses of water. Do not induce vomiting. Get immediate medical attention.

INHALATION: If symptoms of overexposure are experienced, evacuate to fresh air. If symptoms persist, seek medical attention.

COMMENTS: If victims of chemical over-exposure are taken for medical attention, give a copy of the label or this MSDS to the physician/health care professional.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Applicable

FLAMMABLE LIMITS: Not Established

AUTOIGNITION TEMPERATURE: Not Applicable

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, or dry chemical.

EXPLOSION HAZARDS: Closed containers may explode when exposed to fire conditions.

FIRE FIGHTING EQUIPMENT: Self contained breathing apparatus with full face piece operated in positive pressure demand mode, appropriate turn-out gear and chemical resistant personal protective equipment is recommended.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: If the material is in its solid state, pick up and reuse. When molten, allow to solidify, and then reuse if it is not contaminated. If contaminated, refer to Section 13 for proper disposal procedures.

RELEASE NOTES: Avoid repeated or prolonged breathing or skin contact. Wash hands immediately, and remove material from under the fingernails.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Do not store or use near sparks or open flames. Keep containers tightly closed and upright when not in use in order to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>						
	<u>OSHA PEL</u>		<u>ACGIH TLV</u>		<u>Supplier OEL</u>		
	<u>ppm</u>	<u>mg/m³</u>	<u>ppm</u>	<u>mg/m³</u>	<u>ppm</u>	<u>mg/m³</u>	
Tin	TWA	NL	2.00	NL ppm	2.00	NL ppm	NL
		ppm ^[1]	mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³
Silver	TWA	NL ppm	0.10	NL ppm	0.10	NL ppm	NL
			mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³
Indium	TWA	NL ppm	NL	NL ppm	0.1	NL ppm	NL
			mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³
Antimony	TWA	NL ppm	0.5	NL ppm	0.5	NL ppm	NL
			mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³
	STEL	NL ppm	NL	NL ppm	NL	NL ppm	NL
			mg/m ³	mg/m ³	mg/m ³	mg/m ³	mg/m ³

OSHA TABLE COMMENTS:

- NL = Not Listed

ENGINEERING CONTROLS: General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled

and in closed equipment. Special local ventilation is needed at points where vapors can be expected to escape into the workplace air.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Face shield, safety glasses with side shield or chemical splash goggles. When working with molten material, face shield is recommended.

SKIN: Rubber, chemical resistant gloves. When material is heated, wear gloves to protect against thermal burns.

RESPIRATORY: Not normally needed in well ventilated areas. If the ventilation is insufficient to remove smoke from soldering processes, use NIOSH/MSHA approved cartridge type respirator.

PROTECTIVE CLOTHING: Protective clothing and safety shoes as necessary to minimize contact.

WORK HYGIENIC PRACTICES: Good personal hygiene practices should be used. Wash after any contact, before eating, and at the end of the work period.

OTHER USE PRECAUTIONS: Eye wash station and quick drench safety shower in immediate work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Odorless.

APPEARANCE: Metal (pellets)

COLOR: Silver gray

VAPOR PRESSURE: Not Determined

VAPOR DENSITY: Not Determined

BOILING POINT: > 1649°C (3000°F)@ 760 mmHg

MELTING POINT: 217°C (423°F) to 219°C (426°F)(alloy)

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY: 5.9 to 7.0 (water=1)

10. STABILITY AND REACTIVITY

STABILITY: Stable under ordinary use and storage conditions.

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: May emit toxic fumes of carbon monoxide and carbon dioxide.

INCOMPATIBLE MATERIALS: Strong acids and strong oxidizers should be avoided..

11. TOXICOLOGICAL INFORMATION**CARCINOGENICITY:**

IARC: Not listed.

NTP: Not listed.

OSHA: Not listed.

12. ECOLOGICAL INFORMATION

GENERAL COMMENTS: No information on ecological toxicity or biodegradability is available at this time.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of this material, contaminated absorbent material and other contaminated materials in an approved waste disposal facility, according to all applicable Federal, State, and Local regulations. Recovery and reuse, rather than disposal, should be the ultimate goal in handling efforts.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Not regulated by DOT

15. REGULATORY INFORMATION**UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

311/312 HAZARD CATEGORIES: Chronic health hazard.

313 REPORTABLE INGREDIENTS: Silver CAS# 7440-22-4 (weight percentage can be determined from product label)

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: As a solid in wire form, there is no reportable quantity (RQ) for this product. However, if it is cut into pieces smaller than 100 micrometers, the RQ for silver is 1000 lbs., and the RQ for copper is 5000 lbs. Please contact local authorities to determine if there are any local reporting requirements.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS: All ingredients are listed or are exempt from listing (as polymers) on the Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

CALIFORNIA PROPOSITION 65: When used for soldering and similar applications chemicals may be produced which are known to some states to cause birth defects or other reproductive harm.

16. OTHER INFORMATION

APPROVED BY: P. Han **TITLE:** Technical Director

PREPARED BY: J. Saleda-Layton

INFORMATION CONTACT: (630) 628-8083

REVISION SUMMARY New MSDS

HMIS RATING

HEALTH:		1
FLAMMABILITY:		0
PHYSICAL HAZARD:		0
PERSONAL PROTECTION:		X

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