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MATERIAL SAFETY DATA SHEET - Pb-Free Solder Spheres

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Lead-free Solder Sphere

SUPPLIER NAME :

CAPLINQ Europe BV	CAPLINQ Corporation
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1561KK Krommenie	Ottawa, ON K1C 2Y3
The Netherlands	Canada
+31 20 893-2224	+1 (613) 482 2215

CHEMICAL NAME : Pb-free Solder Spheres

CAS NUMBER : See below

DOT HAZARD CLASS : Not required

PRODUCT SERIES : Sn98.5/Ag1/Cu0.5 (SAC105), Sn98.3/Ag1.2/Cu0.5, Sn97/Ag2.5/Cu0.5, Sn96.8/Ag2.6/Cu0.6, Sn96/Ag3.5/Cu0.5, Sn96.5/Ag3/Cu0.5 (SAC305), Sn95.5/Ag3.8/Cu0.7, Sn95.5/Ag4/Cu0.5 (SAC405), Sn96.5/Ag3.5

2. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

A. SUBSTANCES WHICH GIVE THE PRODUCT ITS HEALTH-RISK PROPERTIES:

According to the European Directive 91/155/EEC, this product is not a harmful product.

INGREDIENT	CAS #	WEIGHT %
Tin (Sn)	07440-31-5	95% - 98.5%
Silver (Ag)	07440-22-4	1% - 4%
Copper (Cu)	07440-50-8	0.0% - 0.8%

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:

Moderate eye irritation; Toxic by inhalation; Moderate gastrointestinal tract irritant; Moderate respiratory tract irritant.

POTENTIAL HEALTH EFFECTS:

With our current knowledge, no health risks are to be expected.

EYE CONTACT:

Not a probable route of exposure for film. Can cause moderate eye irritation, tearing and reddening.

SKIN CONTACT:

Can cause skin irritation

INHALATION:

Can cause slight respiratory tract irritation, dizziness, fatigue, nausea and headache

INGESTION:

Ingestion of silver compound can cause abdominal discomfort, convulsion, nausea and diarrhea

CHRONIC HEALTH HAZARDS:

Reproduction: No data shows this product at greater than 0.1% may cause birth defects.

Carcinogenicity: None of the substances have been shown to cause cancer. Not a carcinogen according to the NTP, IARC or OSHA

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

None

4. FIRST AID MEASURES

EMERGENCY AND FIRST AID PROCEDURES:

EYES:

Flush with water for 15 minutes. If irritation persists, contact a physician.

SKIN:

Wash area with soap and water. If irritation persists, contact a physician.

INHALATION:

Not a probable route of exposure for film. Remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, have a trained personnel administer oxygen. Get medical attention.

INGESTION:

Not a probable route of exposure. Induce vomiting immediately as directed by medical personnel.

NOTES TO PHYSICIAN:

None

5. FIRE FIGHTING MEASURES

FIRE

Not a fire or explosion hazard.

SUITABLE EXTINGUISHING MEDIA

Carbon dioxide gas, Dry chemical and regular foam water

SPECIAL FIRE FIGHTING PROCEDURES:

None required



6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid inhalant soldering exhaust gas or dust.

ENVIRONMENTAL PRECAUTIONS: Do not needlessly spread over the area.

CLEAN-UP METHODS: Pump the air or spray water.

7. HANDLING AND STORAGE

HANDLING:

Keep minimum 20cm distance when soldering. The fumes produced during soldering should be extracted away from the breathing zone of the operators, use in a well ventilated area. When using, avoid contact or breathing. Do not eat, drink or smoke. Thoroughly wash hands with soap and water after handling.

STORAGE:

Should be kept in a cool (10°C – 25°C) dry place (40% – 75% humidity) away from incompatible substances. Store in a tightly sealed container

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ELEMENT	LONG-TERM EXPOSURE LIMIT (8HRS TWA)	SHORT-TERM EXPOSURE LIMIT (STEL) (15 MINUTES)	MAXIMUM EXPOSURE LIMIT (CEILING)
Tin (Sn)	2.0 mg/m ³	NA	NA
Silver (Ag)	0.1 mg/m ³	NA	NA
Copper (Cu)	0.2 mg/m ³	NA	NA

9. PHYSICAL AND CHEMICAL PROPERTIES

COLOR

Silver-white to gray

PHYSICAL STATE (20°C)

Solid material

ODOR

None

MELTING POINT (°C)

219°C – 221°C

pH

Not applicable

SOLUBILITY IN WATER

Non-soluble

SPECIFIC GRAVITY (H₂O=1)

7.4 g/cm³



10. STABILITY AND REACTIVITY

STABILITY:

Stable at normal temperatures and storage conditions

INCOMPATIBILITY (MATERIALS TO AVOID):

Avoid oxidizing agents, acids, peroxides, moisture, chlorine, alkalis.

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITIONS TO AVOID:

Contamination. Contact with air or water.

11. TOXICOLOGICAL INFORMATION

SKIN IRRITATION:

Little chance of irritation

EYE IRRITATION:

No information is available

ACCUTE TOXICITY (LD50):

7950 mg/kg

ACCUTE TOXICITY (LC50):

2500mg/kg (ppm)

CARCINOGEN STATUS:

None of the substances have been shown to cause cancer. Not a carcinogen according to the NTP, IARC or OSHA

12. ECOLOGICAL INFORMATION

ECOTOXICITY:

No specific studies have been conducted by CAPLINQ on the ecotoxicity or environmental fate of this material; however given the composition there is moderate ecological hazard.

EFFECT OF MATERIAL ON AQUATIC LIFE:

Aquatic Toxicity : Insoluble.

13. DISPOSAL CONSIDERATION

WASTE DISPOSAL METHOD:

Wherever possible, unwanted solder should be recycled. Product may be land-filled in accordance with local and national regulations



14. TRANSPORT INFORMATION

DOT SHIPPING NAME: Not Applicable

DOT HAZARD CLASS: Not Regulated

UN NUMBER: Not restricted for transportation

ROAD/SEA FREIGHT (IMO) CLASSIFICATION:

Substance Identification Number: N/A

Class: Not Applicable

Packing Group: Not Applicable

Proper Shipping Name: Not Applicable

CDG-ROAD (if applicable): Not applicable

ADR/RID CLASSIFICATION:

Class: Not Applicable

Item Number: Not Applicable

This material is not classified under shipping regulations for dangerous goods.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized safety officer. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

TSCA 8(b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory

TSCA 12(b) Export Notification: None

Regulated Chemicals: Silver is regulated by SARA 313, CA Prop 65 (USA)

European Regulation: According to the EEC Directive 91/155/EEC, this product is not a harmful product.

16. OTHER INFORMATION

The information in this safety data sheet was obtained from reputable sources and to the best of our knowledge is accurate and current at the mentioned date. Neither CAPLINQ Corporation, nor CAPLINQ Nederland accept any liability arising out of the use of the information provided here or the use, application or processing of the product described herein.

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