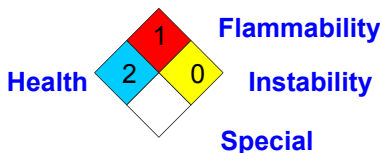


## Material Safety Data Sheet

**Emergency phone:** Alpha Chemtrec #5591  
US & Canada: 800 424-9300  
Mexico: 01 800 022 1400, (55) 5559 1588



|                     |   |
|---------------------|---|
| Health              | 2 |
| Flammability        | 1 |
| Physical hazards    | 0 |
| Personal protection |   |

**1. Product and company identification**

**Product name** : ALPHA® OM-5300 Solder Paste 63Sn/37Pb 90-3-M17  
**Product Code** : 151854  
**Manufacturer** : Cookson Electronics  
109 Corporate Blvd.  
South Plainfield, NJ 07080  
Toll Free: (800) 367-5460  
Main Phone: (908) 791-3000  
Fax: (908) 791-3090  
www.alphametals.com

Cookson Electronics Mexico, S.A. de C.V  
Avenida Nafta No. 800,  
Parque Industrial Stiva Aeropuerto  
Apodaca, Nuevo León, C.P. 66600  
Mexico  
www.cooksonelectronics.com  
Customer Service: (814) 946-1611

**Validation date** : 4/22/2010. **Supersedes Date** : 1/14/2010.  
**Prepared by** : T. Valverde  
(203)-799-4940

**2. Hazards identification**

**Physical state** : Liquid. [Paste.]  
**Odor** : Acrid.  
**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
**Emergency overview** : DANGER!  
This product contains material(s) that are absorbed through the skin. Toxic by inhalation and if swallowed. Harmful in contact with skin. Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation. Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Contains material that can cause target organ damage. Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure. Contains material which may cause heritable genetic effects, based on animal data. Contains material which may cause birth defects, based on animal data. Contains material which can cause developmental abnormalities. Avoid exposure during pregnancy. Contains material which can impair male fertility. Contains material which can impair female fertility. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.  
**Routes of entry** : Dermal contact. Inhalation. Ingestion.  
**Potential acute health effects**

## 2. Hazards identification

- Inhalation** : Toxic by inhalation. Can cause target organ damage. Irritating to respiratory system. May cause sensitization by inhalation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. Adverse symptoms may include the following: wheezing and breathing difficulties asthma anaphylactic shock Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.
- Ingestion** : Toxic if swallowed. Can cause target organ damage. Ingestion may cause gastrointestinal irritation and diarrhea.
- Skin** : Irritating to skin. Harmful in contact with skin. This product contains material(s) that are absorbed through the skin. May cause damage to organs in contact with skin. and symptoms similar to those listed under inhalation or ingestion. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.
- Eyes** : Irritating to eyes. Adverse symptoms may include the following: redness, itching, swelling, pain

### Potential chronic health effects

- Chronic effects** : Adverse symptoms may include the following:  
**Tin:** Prolonged or repeated exposure may cause benign pneumoconiosis (Stannosis).  
**Lead:** Poison! Other adverse effects: abdominal cramps and pain, nausea or vomiting, headache, muscle weakness, metallic taste, loss of appetite, insomnia, dizziness/vertigo, "lead line" on gums, high lead levels in blood and urine, loss of consciousness or coma and death. Chronic effects: irritability, visual disturbances, blood pressure elevation and discoloration of: skin.  
**rosin:** Heated material can cause thermal burns. Vapors may cause irritation. May cause allergic skin reactions with repeated exposure.  
**Proprietary rosin:** May cause allergic skin reactions with repeated exposure.

- Target organs** : Contains material which may cause damage to the following organs: blood, kidneys, the reproductive system, mucous membranes, gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS).

- Carcinogenicity** : Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

- Mutagenicity** : Contains material which may cause heritable genetic effects, based on animal data.

- Teratogenicity** : Contains material which may cause birth defects, based on animal data.

- Developmental effects** : Contains material which can cause developmental abnormalities.

- Fertility effects** : Contains material which can impair male fertility. Contains material which can impair female fertility.

- California Prop. 65** : **WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

- Medical conditions aggravated by over-exposure** : Pre-existing respiratory, skin and digestive disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

## 3. Composition/information on ingredients

| <u>Name</u>       | <u>CAS number</u> | <u>% by weight</u> |
|-------------------|-------------------|--------------------|
| Tin               | 7440-31-5         | 50-60              |
| Lead              | 7439-92-1         | 30-40              |
| Glycol Ether(s)   | -                 | 1-5                |
| Proprietary rosin | -                 | 1-5                |
| rosin             | -                 | 1-5                |

**Any ingredient not listed in Section 3 is non-regulated or present in the product in concentrations below legal disclosure limits.**

## 4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Get medical attention. Wash contaminated clothing before reuse. Clean shoes thoroughly before reuse. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wear suitable protective clothing, gloves and eye/face protection. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

## 5 . Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous combustion products** : carbon oxides  
metal oxide/oxides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

## 6 . Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## 7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or approved alternative container. Containers should be kept closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.  
Keep container tightly closed. Keep container in a cool, well-ventilated area.

## 8 . Exposure controls/personal protection

### Product name

Tin

### Exposure limits

**OSHA PEL (United States, 9/2005).**

TWA: 2 mg/m<sup>3</sup> 8 hour(s).

**ACGIH TLV (United States, 1/2008).**

TWA: 2 mg/m<sup>3</sup> 8 hour(s).

**NIOSH REL (United States, 6/2008). Notes: Note: The REL and PEL also apply to other inorganic tin compounds (as Sn) except tin oxides.**

TWA: 2 mg/m<sup>3</sup> 10 hour(s).

Lead

**OSHA PEL (United States, 5/2005).**

TWA: 0.05 mg/m<sup>3</sup> 8 hour(s).

**ACGIH TLV (United States, 1/2008). Notes: as Pb**

TWA: 0.05 mg/m<sup>3</sup>, (as Pb) 8 hour(s).

**OSHA PEL (United States, 11/2006). Notes: as Pb**

TWA: 50 ug/m<sup>3</sup>, (as Pb) 8 hour(s).

**NIOSH REL (United States, 6/2008). Notes: See Appendix C - Supplemental Exposure Limits Note: The REL and PEL also apply to other lead compounds (as Pb).**

TWA: 0.05 mg/m<sup>3</sup> 10 hour(s).

**Consult local authorities for acceptable exposure limits.**

### **Recommended monitoring procedures**

- : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

## 8 . Exposure controls/personal protection

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Engineering measures</b>            | : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Processes should be designed to minimize airborne and skin exposure to hazardous substances.                                                                                                                                                                                                                                                                                                                       |
| <b>Hygiene measures</b>                | : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Remove/Take off immediately all contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. |
| <b><u>Personal protection</u></b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Respiratory</b>                     | : Use a properly fitted, air-purifying or air-fed respirator complying with NIOSH if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.                                                                                                                                                                                                                                                                                                                                   |
| <b>Hands</b>                           | : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.                                                                                                                                                                                                                  |
| <b>Eyes</b>                            | : Avoid contact with eyes. Safety eyewear should be used when there is a likelihood of exposure. Use safety eyewear designed to protect against splash of liquids.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Skin</b>                            | : Avoid contact with skin and clothing. Wear protective clothing. Body garments used should be based upon the task being performed (e.g., lab coat, chemical resistant protective suit, sleevelets, synthetic apron, gauntlets) to avoid exposed skin surfaces. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.                                                                                                                                                                                                                                                                                 |
| <b>Environmental exposure controls</b> | : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.                                                                                                                                                                                                                                                                                                               |

## 9 . Physical and chemical properties

|                                   |                               |
|-----------------------------------|-------------------------------|
| <b>Physical state</b>             | : Liquid. [Paste.]            |
| <b>Flash point</b>                | : Closed cup: Not applicable. |
| <b>Auto-ignition temperature</b>  | : Not available.              |
| <b>Flammable limits</b>           | : Not available.              |
| <b>Color</b>                      | : Gray.                       |
| <b>Odor</b>                       | : Acrid.                      |
| <b>pH</b>                         | : Not available.              |
| <b>Boiling/condensation point</b> | : Not available.              |
| <b>Melting/freezing point</b>     | : Not available.              |
| <b>Vapor pressure</b>             | : Not available.              |
| <b>Vapor density</b>              | : Not available.              |
| <b>Odor threshold</b>             | : Not available.              |
| <b>Evaporation rate</b>           | : Not available.              |
| <b>VOC</b>                        | : 0.00005 g/l                 |

## 10 . Stability and reactivity

|                                                |                                                                                                        |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Stability</b>                               | : The product is stable.                                                                               |
| <b>Conditions to avoid</b>                     | : No specific data.                                                                                    |
| <b>Incompatibility with various substances</b> | : Reactive with oxidizing agents, reducing agents, metals, acids, alkalis. peroxides, Chlorine         |
| <b>Hazardous decomposition products</b>        | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| <b>Other Hazardous decomposition products</b>  | : carbon oxides (CO, CO <sub>2</sub> ), metal oxides, toxic. fumes                                     |
| <b>Hazardous polymerization</b>                | : Under normal conditions of storage and use, hazardous polymerization will not occur.                 |

## 11 . Toxicological information

### Acute toxicity

| Product/ingredient name | Result      | Species | Dose      | Exposure |
|-------------------------|-------------|---------|-----------|----------|
| rosin                   | LD50 Dermal | Rabbit  | >2.5 g/kg | -        |
|                         | LD50 Oral   | Mouse   | >3 g/kg   | -        |
|                         | LD50 Oral   | Rat     | >4 g/kg   | -        |
|                         |             |         |           |          |

### Carcinogenicity Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP      | OSHA |
|-------------------------|-------|------|-----|-------|----------|------|
| Lead                    | A3    | 2B   | -   | -     | Possible | -    |

### Mutagenicity

| Product/ingredient name | Test | Experiment       | Result    |
|-------------------------|------|------------------|-----------|
| Lead                    | -    | Mammalian-Animal | Equivocal |

### Teratogenicity

| Product/ingredient name | Result                 | Species                      | Dose                 | Exposure         |
|-------------------------|------------------------|------------------------------|----------------------|------------------|
| Lead                    | Equivocal - Oral       | Mammal - species unspecified | 2118 mg/kg           | -                |
|                         | Equivocal - Inhalation | Rat                          | 10 mg/m <sup>3</sup> | 24 hours per day |

### Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species        | Dose                            | Exposure         |
|-------------------------|-------------------|-----------|-------------------|----------------|---------------------------------|------------------|
| Lead                    | -                 | -         | Equivocal         | Rat - Female   | Oral: 520 mg/kg                 | -                |
|                         | -                 | -         | Equivocal         | Rat - Female   | Inhalation: 3 mg/m <sup>3</sup> | 24 hours per day |
|                         | Equivocal         | -         | -                 | Mouse - Female | Oral: 300 mg/kg                 | -                |
|                         | -                 | Equivocal | -                 | Mouse          | Oral: 4099.2 mg/kg              | -                |

Alpha has not conducted specific studies on the toxicity of this product.

## 12 . Ecological information

### Aquatic ecotoxicity

| Product/ingredient name | Result                                   | Species                                                                     | Exposure |
|-------------------------|------------------------------------------|-----------------------------------------------------------------------------|----------|
| Lead                    | Acute LC50 933 to 1200 ug/L Marine water | Crustaceans - Penaeus chinensis                                             | 48 hours |
|                         | Acute LC50 530 ug/L Fresh water          | Daphnia - Ceriodaphnia reticulata - <4 hours                                | 48 hours |
|                         | Acute LC50 0.44 ppm Fresh water          | Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling) - 3.5 cm | 96 hours |

## 13 . Disposal considerations

**Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## 14 . Transport information

| Regulatory information    | UN number      | Proper shipping name | Classes | PG* Label | Additional information |
|---------------------------|----------------|----------------------|---------|-----------|------------------------|
| <b>DOT Classification</b> | Not regulated. | -                    | -       | -         |                        |

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Toxic material  
Irritating material  
Sensitizing material  
Carcinogen  
Target organ effects

**U.S. Federal regulations** : **TSCA 5(a)2 proposed significant new use rules**: No products were found.  
**TSCA 5(a)2 final significant new use rules**: No products were found.  
**TSCA 12(b) one-time export**: No products were found.

**United States inventory (TSCA 8b)** : All components are listed or exempted.

### SARA 313

|                                        | Product name | CAS number | Concentration |
|----------------------------------------|--------------|------------|---------------|
| <b>Form R - Reporting requirements</b> | Lead         | 7439-92-1  | 30-40         |
| <b>Supplier notification</b>           | Lead         | 7439-92-1  | 30-40         |

### California Prop. 65

Continued on next page

## 15 . Regulatory information

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

### Canada

- WHMIS (Canada)** : Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).
- Canada inventory** : Not determined.

### International lists

## 16 . Other information

### **Definition of Terms**

|              |                                                           |
|--------------|-----------------------------------------------------------|
| ACGIH        | American Conference of Governmental Industrial Hygienists |
| Ceiling      | Maximum exposure limit defined by OSHA                    |
| CAS          | Chemical Abstract Service                                 |
| IARC         | International Agency for Research on Cancer               |
| NIOSH        | National Institute for Occupational Safety and Health     |
| NTP          | National Toxicology Program                               |
| OSHA         | Occupational Safety and Health Administration             |
| PEL          | Permissible Exposure Limit                                |
| REL          | Recommended Exposure Limit                                |
| RTK          | Right to Know                                             |
| SARA         | Superfund Amendments and Reauthorization Act              |
| STEL         | Short Term Exposure Limit                                 |
| TLV          | ACGIH Threshold Limit Value                               |
| TLV-C        | ACGIH Threshold Limit Value, Ceiling                      |
| TRADE SECRET | Claimed as allowed under 29CFR§1910.1200                  |
| TSCA         | Toxic Substances Control Act                              |
| PPE          | Personal Protection Equipment                             |
| CEPA         | Canadian Environmental Protection Act                     |
| DSL          | Domestic Substance List                                   |
| NDSL         | Non-Domestic Substance List                               |
| NSN          | New Substance Notification Rules                          |

### **Disclaimer**

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Additionally, Cookson Electronics assumes no responsibility for injury to the vendee or third persons proximately caused by the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

4.1b1161



**Cookson Electronics**