1 Identification of the substance/mixture and of the company/undertaking

Product identifier

Trade name: EM923 SnAgCu
Relevant identified uses of the substance or mixture and uses advised against: Solder
Application of the substance / the preparation: Solder paste

Details of the supplier of the safety data sheet
This Safety Data Sheet has been updated in accordance with the Global Harmonized System (GHS).
Manufacturer/Supplier:
Kester Components Pte Ltd
500 Chai Chee Lane
Singapore 469024
Tel: 65-64491133

Further information obtainable from: SDS Coordinator (630) 616-6844
Emergency telephone number:
CHEMTREC 24-Hour Emergency Response Telephone Number: (800) 424-9300
CHEMTREC 24-Hour Emergency Response (Outside US & Canada): (703) 527-3887

2 Hazards identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS08 health hazard
Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

GHS05 corrosion
Eye Dam. 1 H318 Causes serious eye damage.

GHS07
Skin Sens. 1 H317 May cause an allergic skin reaction.

Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
Hazard pictograms

GHS05 GHS08

Signal word Danger
Hazard-determining components of labelling:
2-(2-hexyloxyethoxy)ethanol
Denatured Acid Hydrogenation Gum Resin
Hazard statements
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.

(Continued on page 2)
SAFETY DATA SHEET (SDS)  
according to 1907/2006/EC, Article 31

Trade name: EM923 SnAgCu

Precautionary statements

P285 In case of inadequate ventilation wear respiratory protection.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Composition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-31-5</td>
<td>Sn 50-100%</td>
<td></td>
</tr>
<tr>
<td>112-59-4</td>
<td>2-(2-hexyloxyethoxy)ethanol 2.5-10%</td>
<td></td>
</tr>
<tr>
<td>144413-22-9</td>
<td>Denatured Acid Hydrogenation Gum Resin 2.5-10%</td>
<td></td>
</tr>
<tr>
<td>7440-22-4</td>
<td>Sn 2.5-10%</td>
<td></td>
</tr>
<tr>
<td>8016-28-2</td>
<td>Lard Oil ≤ 2.5%</td>
<td></td>
</tr>
<tr>
<td>65997-06-0</td>
<td>Modified Rosin ≤ 2.5%</td>
<td></td>
</tr>
</tbody>
</table>

SVHC
This product does not contain any Substance of Very High Concern (SVHC) on the European Chemicals Agency (ECHA) candidate list.

Additional information: Solder powder is typically 85-92% of the solder paste composition.

4 First aid measures

Description of first aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Immediately wash with water and soap and rinse thoroughly.
After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: Seek immediate medical advice.

Information for doctor:
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.
5 Firefighting measures

Extinguishing media
Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.

Special hazards arising from the substance or mixture
In case of fire, the following can be released:
- Carbon monoxide (CO)
- Carbon dioxide (CO2)
- Aliphatic aldehydes

Advice for firefighters
Protective equipment: Wear self-contained respiratory protective device.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation
Environmental precautions: Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Scoop up paste and deposit in appropriate containers. Remove residual with glycol ether solvent.

Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling:
Precautions for safe handling
Prevent formation of aerosols.
Wash hands after handling paste and before eating or smoking. Care should be taken to remove paste from under fingernails.

Information about fire - and explosion protection: No special measures required.

Conditions for safe storage, including any incompatibilities

Storage:
Requirements to be met by storerooms and receptacles:
Store at or near 5°C in a dry location.
Store at 0-10°C in dry location

Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.
Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>PEL (USA)</th>
<th>REL (USA)</th>
<th>TLV (USA)</th>
<th>TLV (Taiwan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-31-5 tin</td>
<td>Long-term value: 2 mg/m³ metal</td>
<td>Long-term value: 2 mg/m³ metal</td>
<td>Long-term value: 2 mg/m³ metal</td>
<td>Long-term value: 2 mg/m³ metal and its inorganic compounds</td>
</tr>
<tr>
<td>7440-22-4 silver</td>
<td>Long-term value: 0.1 mg/m³ metal</td>
<td>Long-term value: 0.01 mg/m³ metal</td>
<td>Long-term value: 0.01 mg/m³ metal</td>
<td>Long-term value: 0.01 mg/m³ metal dust, soluble compounds and fume (as Ag)</td>
</tr>
</tbody>
</table>

Exposure controls

Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Respiratory protection:
When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.
Protection of hands:

> Protective gloves

Material of gloves
Nitrile rubber, NBR
Natural rubber, NR
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Eye protection: Safety Glasses with Side Shields Required

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information
Appearance:
Form: Pasty
Colour: Silver grey
Odour: Mild

pH-value: Not determined.

Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: Undetermined.
SAFETY DATA SHEET (SDS)
according to 1907/2006/EC, Article 31

Printing Date: 24.05.2011 Revision: 24.05.2011 Version number 4

Trade name: EM923 SnAgCu

(Continued from page 4)

**Flash point:** > 55°C (> 131 °F)

**Self-igniting:** Product is not self-igniting.

**Danger of explosion:** Product does not present an explosion hazard.

**Density:** Not determined.

**Solubility in / Miscibility with**
water: Not miscible or difficult to mix.

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**10 Stability and reactivity**

**Reactivity**

**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Strong acids, strong oxidizers.

**Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
When heated, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes, acids, and terpenes.

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**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>65997-06-0 Modified Rosin</strong></td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

**Primary irritant effect:**

on the skin:
Irritant to skin and mucous membranes.
Possible local irritation by contact with flux or fumes.

on the eye:
Irritating effect.
Smoke during soldering can cause eye irritation.

Sensitization:
Sensitization possible through inhalation.
Sensitization possible through skin contact.

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**12 Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Additional ecological information:**

**General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.
13 Disposal considerations

Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system. Disposal must be made according to official regulations.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID (cross-border)
ADR/RID class: - Not regulated.

Maritime transport IMDG:
IMDG Class: - Not regulated.
Marine pollutant: No

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: - Not regulated.

Special precautions for user Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS05 GHS08

Signal word Danger

Hazard-determining components of labelling:
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(Continued on page 7)
Trade name: EM923 SnAgCu

16 Other information

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

Department issuing MSDS: Product Safety

Abbreviations and acronyms:
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
- ICAO: International Civil Aviation Organization
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- NFPA: National Fire Protection Association (USA)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent