SAFETY DATA SHEET  
CORED SOLDER WIRE  «Sn99Ag0,3Cu0,7 R RA RMA» 
Presentation conform to the NFT 01-100 standard Sn99Ag0,3Cu0,7 R RA RMA-toxy-uk

Date: January 2007

INTERNATIONAL STANDARD NORM ISO 11014-1

1  PRODUCT AND COMPANY IDENTIFICATION

1.1 Trade Name: Solder wire S-Sn99Ag0,3Cu0,7 NF EN 29453 Flux R RA RMA NF EN 29454.1

1.2 Manufacturer: RADIEL FONDAM
Address:
4 rue du Fort
F-21121 Hauteville les Dijon

RADIEL FONDAM
33 rue Maurice Gunsbourg
F-94200 Ivry sur Seine

2  COMPOSITION / INFORMATION ON THE COMPONENTS

2.1 Description: Solder wire Tin/Lead with incorporated flux Type 1.1.2 B

2.2 Components:

<table>
<thead>
<tr>
<th>Alloys</th>
<th>Codes</th>
<th>Concentration</th>
<th>R Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tin</td>
<td>7440-31-5</td>
<td>Rest</td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>7440-8</td>
<td>0.7 %</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>0.3 %</td>
<td></td>
</tr>
<tr>
<td>Colophony</td>
<td>8050-09-7</td>
<td>0.6 à 3.3 %</td>
<td>42/43</td>
</tr>
</tbody>
</table>

3  HAZARD IDENTIFICATION

3.1 Warning: This alloy contains lead. Industrial use only. Keep children away.

3.2 Instability: This product is stable.

3.3 Incompatibility: Avoid contact with basics, acids and oxidizing chemicals,
Hazardous reactions with mineral acids: sulfuric acids, phosphoric, nitric (concentrated).

3.4 Hazardous products of decomposition: No hazardous reaction when normally used.

4  FIRST AID MEASURES

4.1 Inhalation: Always carry out soldering and melting operations in well ventilated areas to prevent a concentration of fumes higher to the MAC values.

4.2 Skin: Burns: cool affected parts under running water...
Do not remove adhering material, apply a sterile dressing and seek medical advice. May cause sensitisation by skin contact.

4.3 Eyes: Immediately flood the eye with plenty of water for at least 15 minutes Obtain medical attention.

4.4 Ingestion: Do not induce vomiting. Get medical attention. Do not give water when unconscious. Keep warm and at rest.
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5  FIRE FIGHTING MEASURES

5.1 Extinguishing media :
.-CO₂ foam - Alcohol resistant foam - Dry powder.

5.2 Unsuitable extinguished media :
Do not use jet of water.

5.3 Special fire fighting measures :
None.

5.4 Special protective equipment for freighting :
Wear full protective clothing and self-contained breathing.

Risks of explosion and fire :
Flash point 168.2°C
Temperature of auto-inflammation 370°C

6  ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions :
Wear appropriate protective clothing.

6.2 Environmental precaution :
Residues should be stored in closed containers. Extract fumes. Try to prevent the material from entering drains or water courses. Disposals should be in accordance with local states.

6.3 Measures for cleaning :
Scrapped off the released product, store it in a closed container before throughing it, wash the contaminated surface with an organic solvant or or a detergent. Transfer into suitable containers for recovery or disposal.

Other data :
Kühn-Birett Remarks "Hazardous materials", text B20 "Lead".

7  HANDLING AND STORAGE

7.1 Handling :

7.1.1 Personal protective equipment :
Wear gloves and eye-protection. Use local exhaust ventilation.

7.1.2 Measures for safety handling :
Ensure efficient local air ventilation or extraction systems at the workplace. Extract fumes during the melting. Avoid breathing metal fumes from Make sure that people work in safety conditions. Do not drink, do not smoke in soldering areas.

7.1.3 Using advices :
Hazardous reactions with concentrated sulfuric acid, concentrated phosphoric acid and concentrated nitric acid. Real risks of lead fumes above 500°C. Lead is harmful if absorbed through the digestive system or skin.
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Product : RADIEL FONDAM
Solder wire S-Sn99 Ag0,3 Cu 0,7
NF EN 29453
Flux R RA RMA
NF EN 29454.1

7.2 Storage :

7.2.1 Conditions of storage and protective equipment :
Store in a place in ambient temperature (20°C-25°C). Avoid sun exposure and heating.

7.2.2 Incompatible materials :
Strong oxidizing chemicals.

7.2.3 Conditioning materials :
Nature of the recommended packaging :
* plastics PP or PE, recyclable polypropylene spools, recyclable containers.
Not advisable :
* metallic (as aluminium).
Classification reference :
Page 13 according to VCI -.

8 EXPOSURE CONTROL AND PERSONAL PROTECTION

8.1 Occupational exposure standards :
According to INRS ND 19456-153-93 et ND 1962-155-94 :
Ensure appropriate air and vapour extraction/ventilation at the workplace. Fumes and vapours of lead : 0.15 mg/m³ of air.

8.2 Personal protective equipment:

Measures of control :

<table>
<thead>
<tr>
<th>No CAS</th>
<th>Texts</th>
<th>Material</th>
<th>Values</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>Lead</td>
<td>dust</td>
<td>0.1</td>
<td>mg/m³</td>
</tr>
<tr>
<td>7439-92-1</td>
<td>Lead</td>
<td>blood</td>
<td>700</td>
<td>ug/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sang</td>
<td>300</td>
<td>ug/L (women under 45 years)</td>
</tr>
</tbody>
</table>

Other measures :

8.2 Personal protection :
Respiratory protection :
P2, ensure appropriate air ventilations.
Hand protection :
Wear PVC or rubber gloves.
Eye protection :
Use correctly fitting protective goggles. Face shield when handling hot product.
Body protection :
Wear appropriate working clothes.

8.3 General protective and hygenic instructions :
Do not eat, do not drink, do not smoke at the workplace.
Wash hands thoroughly with water and soap before taking breaks, when finishing work and especially before eating.
Keep away from food and beverages.
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9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Physical properties

Physical state: wire
Colour: silver metal,
Odour: none

Boiling point/range:
(of tin) 2260 °C
(of lead) 1740 °C

Melting point/range:
(S-Sn99Ag0.3Cu0,7) 217-227 °C

Density (at 20°C):
S-Sn99Ag0.3Cu0,7 8.5 g/cm³

9.2 Chemicals or incorporated flux

Resinous flux according to NF EN29454.1 standard type 1.1.2 B

<table>
<thead>
<tr>
<th>Flux R</th>
<th>Flux RMA</th>
<th>Flux RA</th>
</tr>
</thead>
<tbody>
<tr>
<td>I₂</td>
<td>160 to 190</td>
<td>204</td>
</tr>
<tr>
<td>Water solubility (at °C)</td>
<td>insoluble</td>
<td>insoluble</td>
</tr>
<tr>
<td>Solvent content</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Softening point</td>
<td>80 to 100 °C</td>
<td>80 to 100 °C</td>
</tr>
</tbody>
</table>


10 STABILITY AND REACTIVITY

Conditions to avoid: No decomposition if used in accordance with the specifications.

Materials to avoid: Powerful oxidizing chemicals.

Other particulars:
11 **TOXICOLOGICAL INFORMATION**

Toxicological analyses : This good is not concerned in its final shape.
Specific information :
Significant remarks :
Special remarks :
General remarks : Possible intoxication by ingestion or by skin contact.

12 **ECOLOGICAL INFORMATION:**

Persistence/Degradation : Tin and lead are not biodegradable and cannot be disposed of.

Water pollution : Water polluting product : WGK : class 2. Do not allow to reach the ground water, rivers and drains or water courses.
CSB Values :
  mg/g.
BSB5 :
  mg/g.
AOX Data :
  Containing the chemical formula of heavy metals (refer to Legal rules 76/464/CEE) :
  About 60 % Tin (Sn),
  About 40 % Lead (Pb).

General Indications : Avoid contamination of ground and water with lead.

13 **DISPOSAL :**

Product disposal : The product which is not used and its wastes can be returned to the manufacturer. Metals should be recovered when possible
Waste code number : N°. 353 02 relative to the waste of lead.
Container disposal : Dispose of in accordance with the official regulations.

14 **TRANSPORT INFORMATION**

RID/ADR - Class : Not hazardous product regarding transport
IMDG - Class : Not classified
IATA - Class : Not classified.
Other regulatory arrangements : none .
RIMO R/F : none .

Date : January 2007
15 REGULATORY INFORMATIONS

Labelling information: This product is classified and labelled as hazardous substance.

EU guidelines:
91/322/EU dated 29 may 1991: EU limit values
NF EN 481
NF EN 482

Documents in accordance to the regulations:
INRS 1945-153-93/revised in february 1995: Limit values for professional exposure to chemical substances.

Technical instructions for air:

Lead:
Emission 5 mg/m³ per 25 g/h mass current.
Lead and its derivates belong to Class III.

Tin:
Emission 5 mg/m³ per 25 g/h mass current.
Tin and its derivates belong to Class III.

Water hazard class:
2 (pollutive substance of water).

16 AUTRES INFORMATIONS

The relevant data sheet is applicable here.

The information contained herein is based on data considered accurate and is offered at no charge.

Our aim by providing the above information which reflects the current status of our knowledge and experience, is to describe our product in terms of safety requirements.

Liability is expressly disclaimer for loss or injury arising out of use of this information or the use of any materials designated.

Supplementary copies of this data sheet are available on request.

Quality Manager:
Tel number: 33 03 80 53 96 58