

# MATERIAL SAFETY DATA SHEET

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**SECTION**

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Product Name : HOZAN Solder lead free type, RMA  
Product No. : HS-301 / HS-302 / HS-304 / HS-306 / HS-307 / HS-308 /  
HS-312 / HS-313 / HS-314 / HS-316 / HS-317  
Manufacturer's Name : HOZAN TOOL INDUSTRIAL Co., Ltd.  
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Emergency Telephone Number : Japan 06(6562)1134  
Data Prepared : March 2, 2005  
Preparer : MORI, Hiroaki

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**SECTION Composition / Information on Ingredients**

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The product is preparation of A, B, C and D.

Component	Chemical Name	Mass %	Cas No.
A	Tin (Sn)	94	7440-31-5
B	Silver (Ag)	2.9	7440-22-4
C	Copper (Cu)	0.49	7440-50-8
D	Activated Rosin	2.6	8050-09-7

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**SECTION Hazards Identification Emergency Overview**

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Emergency overview : Not available.

Potential health effects : (Primary route of exposure)

Inhalation : May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.  
Eye contact : May cause eye irritation.  
Skin contact : May cause skin irritation.  
Ingestion : The toxicological properties of this substance have not been fully investigated. May be harmful if swallowed.

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**SECTION      First Aid Measures**

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Inhalation	: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Eyes	: Flush eyes well with plenty of running water for 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.
Skin	: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion	: Get medical aid immediately. Wash mouth out with water.

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**SECTION      First Fighting Measures**

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Flammable properties : No information available.

Extinguishing media : Dry chemical, carbon dioxide, chemical foam or sand.

First fighting instructions : Use self-contained breathing apparatus and full protective clothing for fires in enclosed areas.

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**SECTION      Accidental Release Measures**

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Sweep up, then place into a suitable container for disposal.

If molten metal spilled, steam explosion can be occurred.

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**SECTION      Handling and Storage**

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Handling : Heating can release harmful fume. Avoid breathing dust, vapor, mist or gas. Avoid contact with skin and eyes.

Do not have any food, drink or smoke during soldering. Wash hands before eating or smoking after handling solder.

Storage : Store in a cool, dry place to prevent from direct sun shine.

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**SECTION Exposure Controls / Personal Protection**

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Engineering controls : Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal protective equipment : Use protective gloves, safety glasses or goggles, and appropriate protective clothing to prevent exposure.

Exposure guide lines :

Sn : 2mg/m <sup>3</sup>	(OSHA : PEL, TWA)
Sn : 2mg/m <sup>3</sup>	(ACGIH : TLV-TWA)
Sn : 2mg/m <sup>3</sup>	(Australia, Belgium, Denmark, Finland, Germany, Netherland, Switzerland, Philippines, Thailand : OEL-TWA)
Ag : 0.01mg/m <sup>3</sup>	(OSHA : PEL, TWA)
Ag : 0.1mg/m <sup>3</sup>	(ACGIH : TLV-TWA)
Ag : 0.01mg/m <sup>3</sup>	(Denmark, Germany, Switzerland : OEL-TWA)
Ag : 0.1mg/m <sup>3</sup>	(Belgium, Finland, France, United Kigdom : OEL-TWA)
Cu : 1mg/m <sup>3</sup>	(OSHA : PEL, TWA)
Cu : 1mg/m <sup>3</sup>	(ACGIH : TLV-TWA)
Cu : 1mg/m <sup>3</sup>	(Finland, Germany, Switzerland, Thailand : OEL-TWA)
Rosin : Reduce to expose as low as possible. Thermal decomposition products, as resin acid - colophony, are sensitizer. (ACGIH)	

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**SECTION Physical and Chemical properties**

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Appearance / Color	: Gray solid wire
Odor	: Odorless
Boiling Point	: Sn 2270 , Ag 2155 , Cu 2582 , Rosin approx. 200
Melting Point	: Alloys 217-220 , Rosin approx. 70
Specific Gravity	: Alloys approx. 7.4 (H <sup>2</sup> O=1 at 20 )
Solubility in Water	: Insoluble

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**SECTION Stability and Reactivity**

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Chemical Stability : Stable under normal temperatures and pressures.

Conditions to Avoid : Strong oxidants

Incompatibilities with other Materials : Strong oxidizing agents, acids.

Hazardous Decomposition Products : Not available

Hazardous Polymerization : Will not occur.

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<b>SECTION</b>	<b>Toxicological Information</b>
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Inhalation Effects : Soldering fumes can respiratory irritation, kidney and liver damage.

Skin Effects : May cause irritation, dermatitis.

Eyes Effects : Can cause irritation and abrasion.

Ingestion effects : May cause kidney and liver damage.

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<b>SECTION</b>	<b>Ecological Information</b>
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No information available.

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<b>SECTION</b>	<b>Disposal Considerations</b>
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Dispose if in a manner consistent with federal, state, and local regulations.

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<b>SECTION</b>	<b>Transport Information</b>
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No information available.

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<b>SECTION</b>	<b>Regulatory Information</b>
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European / International Regulations :

European Labeling in accordance with EC Directives or Tin(Sn), Silver(Ag) and Copper(Cu).

Hazard Symbols : Not available

Risk Phrases : Not available

Safety Phrases : S 24/25 Avoid contact with skin and eyes.

Please refer to any other national measures that may be relevant.

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