

## Material Safety Data Sheet

### 1. Chemical Products & Company Information

Lead-Free Solder Ball

Chemical Product Name : **SN100C**  
 Company Name : Nihon Superior Co., Ltd.  
 Address : 16 - 15 Esaka - Cho 1 - Chome Suita 564 - 0063 Japan  
 Division : Quality Assurance  
 TEL No. : 81-(6)-6380-1121  
 FAX No. : 81-(6)-6380-1262  
 Reference No. : A2014-NS

### 2. Summary of Hazards and Toxicity

#### GHS Classification

Acute Toxicity : Classification 5

#### GHS Label Element

Display Image or Symbol : No display image

Attention-seeking Words : Warning

Hazards and Toxicity Information : This product may be hazardous in case of ingestion (Oral)

#### Caution Statement

Safety Measures : Do not use this product for other than soldering application.  
 Do not use this product until you understand all the safety precautions.  
 Do not eat and drink or smoke during soldering operation.  
 Be sure to wash your hand before meal or after completion of operation.  
 Be sure to wear a protective glove, and protective glass.  
 Avoid direct exposure by using personal protectors and a ventilator.  
 Avoid inhaling dust.  
 Avoid skin contact and inhalation of gas during soldering operation.  
 Provide local ventilation during soldering operation.  
 Avoid emission to environment.

First Aid Measures : In case of fire, take appropriate fire extinguishing measures.  
 In case of eye contact of solder ball during soldering operation, flush with a lot of water and soap after wiping off with alcohol.  
 In case of solder ball ingestion during soldering operation, flush mouth with plenty of water. Do not induce vomiting. Seek medical attention immediately.  
 In case of skin contact of flux during soldering operation, wash with plenty of water and mild soap after removing the flux with alcohol.  
 In case of gas inhalation during soldering operation, remove to fresh air. Keep warm and rest.

Storage : Avoid such place with high temperature and high humidity and do not directly expose to the sun rays.

Disposal : All disposal methods must be in compliance with all Federal, State, Provincial and local laws and regulations.

Toxicity : No relevant information found.  
 Effect on Environment : No relevant information found.  
 Physical and Hazardous Effect : No relevant information found.  
 Name of the Classification : Not applicable to any classification level.

### 3. Composition and Constituent Information

Single Product / Classification of Mixture : Mixture

Constituent	Content (mass%)	PRTR Law Number	CAS No.
Tin	(Balance)	—	7440-31-5
Copper	(0.5~0.7)	—	7440-50-8
Nickel	(0.04~0.07)	—	7440-02-0
Germanium	(Below 0.01)	—	7440-56-4

### 4. Emergency and First Aid Measures

Eye Contact of Solder Ball	: Flush with running water (or purified water) carefully for several minutes. If contact lens can be removed easily, flush eyes without contact lens.
Ingestion of Solder Ball	: Flush mouth with plenty of water. Do not induce vomiting. Seek medical attention immediately.
Inhalation of Gas	: Remove to fresh air. Rest and keep warm.
Eye Contact of Gas	: Flush with running water (or purified water) carefully for several minutes. If contact lens can be taken off easily, flush eyes without contact lens. If eye irritation continues, seek medical attention.
Skin Contact of Flux	: Wash with plenty of water and mild soap after removing the flux with alcohol.

### 5. Fire Fighting Measures

Fire-extinguisher	: Powder, Carbon dioxide gas, Dry sand, etc
Banned Fire-extinguisher	: Water
Fire Fighting Measures	: In case of fire, use appropriate fire extinguisher. Move the container to a safe location if possible. Keep the unauthorized personnel away and remove toward the wind. Rope off the fire place to prohibit the entry of people.
Protection of Fire Fighters	: In case of fire, be sure to wear appropriate protection such as mask and battle fire.

### 6. Accidental Release Measures

Collect with broom and adhesive tape.

### 7. Precaution for Handling and Storage

Handling	: Before meal or after completion of operation, be sure to wash hands and gargle throat. Provide local ventilator at the work area of soldering.
Storage	: Avoid the place directly exposed to the sun rays. Store the container in a cool and dark place.

### 8. Exposure Controls, Personal Protection

Density Allowance	: 2.0 [mg/m <sup>3</sup> ] (Value as Tin content)
Facilities	: Local ventilator, whole ventilator (during soldering operation)
Protective Equipments	: Inhalation — Safety face protective mask Hands — Cotton glove Eyes — Goggles, Safety Glasses

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**9. Physical and Chemical Properties**

Outer Appearance : Sphere  
 Color : Silver  
 Odor : None  
 Melting point : 227 °C  
 Specific Gravity : 7.4

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**10. Stability and Reactivity**

Stability : Stable at room temperature  
 Inflammability : None  
 Ignitability : None  
 Self Reactivity : None

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**11. Toxicological Information**

Skin Corrosivity : None  
 Irritant Properties (skin, eyes) : None

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**12. Ecological Information**

No relevant information found.

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**13. Precaution for Disposal**

All disposal methods must be in compliance with all Federal, State, Provincial and local laws and regulations.

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**14. Precaution for Transportation**

Avoid dropping, impacting or otherwise roughly handling cargoes.  
 Watch out for fire. Avoid such a place with high temperature and high humidity and do not directly expose to the sun rays.

UN Classification : Not applicable  
 UN Number : Not available

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**15. Regulatory Information**

Industrial Safety and Health Law : Section 18 Hazardous elements which should be disclosed  
 (Tin and its compounds)  
 (Copper and its compounds)

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**16. Other Information (Reference literature, etc.)**

Reference Literatures : JIS Z 7250:2005 Material Data Safe Sheet (MSDS)  
 First Section : Order of contents and items Japanese Standards Associations  
 Display of chemical substances based on JIS Z 7251: 2006 GHS Japanese Standards Associations  
 "13398 Chemical products" issued by The Chemical Daily Co. Ltd.

As all statements, and technical information contained herein are based on the data, or other information currently available to us, this sheet may be revised when new relevant information is acquired. In addition, we cannot guarantee content, physical and chemical property, danger and toxicity. Precautions are intended for normal handling. In case of special handling, use this product with precautions appropriate for each purpose.