Date Prepared: 14 June 2018
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Safety Data Sheet (SDS)

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Lead-free solder paste SN100CV P608 D4
Reference No.	D2122-NS_20230301
Company name	Nihon Superior Co., Ltd.
Department	Quality assurance department
Address	NS Building, 1-16-15, Esaka-Cho Suita-City,Osaka, 564-0063 Japan
Phone number	+81-6-6380-1121
Fax number	+81-6-6380-1262
Recommended use and restriction on use	Industrial use, for soldering

2. HAZARDS IDENTIFICATION

GHS Classification

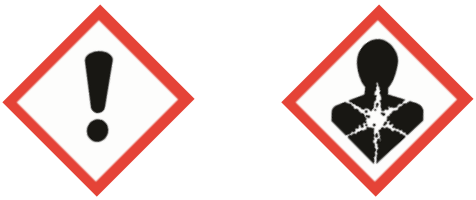
Health hazards

Serious eyes damage /eyes irritation	Category 2
Sensitisation, skin	Category 1
Specific target organ toxicity (single exposure)	Category 2 (Nervous system, Kidney, Bone and joint) Category 3(Respiratory irritant)
Specific target organ toxicity (repeated exposure)	Category 1 Category 2 (Nervous system, Kidney, Bone and joint)

Note: Items not listed in the GHS classification fall into either "Not classified" or "Classification not possible".

GHS label elements

Hazard symbols



Signal word Danger

Hazard statements

May cause an allergic skin reaction
Causes serious eye irritation
May cause respiratory irritation
May cause damage to organs (Nervous system, Kidney, Bone and joint)
Causes damage to organs
May cause damage to organs (Nervous system, Kidney, Bone and joint)

Precautionary statements

(Prevention)

Do not breathe dust, fume, gas, mist, vapours, spray.

Wash hands, forearms and face thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves, protective clothing, eye protection, face protection.

(Response)

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue ri

IF exposed or concerned: Call a doctor.

Get medical advice if you feel unwell.

If skin irritation or rash occurs: Get medical advice.

If eye irritation persists: Get medical advice.

Take off contaminated clothing and wash it before reuse.

(Storage)

Store in a refrigerator at 0-10°C. Keep container tightly closed.

Store locked up.

(Disposal)

Dispose of contents, container to a specialized waste disposal company licensed by the prefectural governor.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance or mixture Mixture

Substance name/Mixture (product) name Solder paste

Chemical name	**Concentration (mass%)**	Class reference number in the gazette list (Japan) CSCL/ISHA	CAS RN®	Remarks
Solder (87.3～89.3 mass%)				
Tin	85～88	-	7440-31-5	
Bismuth	1.1～1.6	-	7440-69-9	
Copper	0.52～0.72	-	7440-50-8	
Nickel	0.030～0.060	-	7440-02-0	
Germanium	Max 0.01	-	7440-56-4	
Flux (10.7～12.7 mass%)				
Rosin based resin	3.9～4.7	-	Non-disclosure	
Solvent	3.1～3.8	-	Non-disclosure	
Other	3.6～4.3	-	Non-disclosure	

CSCL : Chemical Substances Control Law

ISHA : Industrial Safety and Health Act

4. FIRST-AID MEASURES

If inhaled:

Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice.
If experiencing respiratory symptoms: Call a doctor.
Get medical advice if you feel unwell.

If on skin:

Take off immediately all contaminated clothing. Rinse skin with water.
Wash with plenty of water.
Get medical advice if skin irritation or rash occurs.
Get medical advice if you feel unwell.

If in eyes:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persist, get medical advice.

If swallowed:

Get immediate medical advice.

If any symptom is noted, seek medical attention immediately.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use an extinguishing agent suitable for surrounding fire
Powder, Carbon dioxide gas, Dry sand.

Extinguishing agents not to be used

Straight stream water

Specific fire hazards

Possibility of flowing around the molten metal (a melting point approx. 221℃) by excess heat.
Possibility of toxic fume generation by decomposition due to combustion reaction and excess heat.

Specific fire-fighting methods

Evacuate peoples to a safe place.
Rope off the fire area to prevent the entry of people.
Fire fighting shall be done from the windward side.
Avoid leakage of the water discharge as much as possible for environmental considerations.
Fire fighting shall be done at the farthest place from which the fire fighting is still effective.
Move the movable container to a safe location.
It is desirable to use sealing and suffocation methods in extinguishing a metal fire.
If the fire is too large to extinguish, rope off the fire area to prohibit the entry of people and leave the fire to burn.

Special protective measures for fire-fighters

Fire fighters should wear breathing apparatus and chemically protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment while working to avoid contact with eyes and skin and avoid inhalation.
(Refer section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION)
Evacuate peoples to a safe place.
Rope off the leakage place to prohibit the entry of people.
Do not work in the leeward.
Ventilate the hermetically-sealed room before enter.
If this product is flowing around as the molten metal (a melting point approx. 221℃),
Do not touch any container or leakage without appropriate protection.
After cooling and hardening, they are scooped into paper bags or drums for collection.

Environmental Precautions

Avoid dispersal of spilled material to the environment.
Avoid runoff and contact with soil, waterways, drains and sewers, so as not to affect detrimental to the environment.

Methods and Materials for Containment and Cleaning Up

If it can be done without risk, stop the leakage.
Always dispose in accordance with local environmental regulations.

Secondary disaster prevention measures

Remove all of ignition sources immediately. (Prohibit smoking and the lighting of fires nearby)
Avoid runoff drains, sewers, and basement room or an hermetically-sealed room.

7. HANDLING AND STORAGES

Handling

Engineering measure

Take enviromental exposure control and wear protective equipment
(Refer section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION)

Precautions for safe handling

Do not use this product for other than soldering application.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust, fume, gas, mist, vapours, spray.
Use with only adequate ventilation
Avoid leaks, overflows and splashing and do not generate vapours unnecessarily.
Do not get in eyes, on skin and clothing.
Contaminated work clothing should not be allowed out of the workplace.
Keep away heat and ignition sources (flame, sparks).
Do not treat containers roughly drop them.
Wear protective gloves, protective clothing, eye protection, face protection.
When using do not eat, drink or smoke.
Wash hands thoroughly after handling.

Avoiding contact

Refer section 10.STABILITY AND REACTIVITY.

Storage

Conditions of safe storage

Keep away from oxidizers.
Containers should be sealed and stored in a refrigerator at 0-10°C.

Conditions of safe contair

Avoid metals (since they react with them) and select appropriate materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	Control parameters	Occupational exposure limits/Threshold Limited Values	
		JSOH	ACGIH
Tin	Not-established	-	TWA 2 mg/m3 (Tin and its inorganic compounds)
Copper	Not-established	-	TWA 0.2 mg/m3 (fume) TWA 1 mg/m3 (dust, mist)
Nickel	Not-established	1 mg/m3 (Metal)	TWA 1.5 mg/m3 (Inhalable particle)

JSOH: Japan Society for Occupational Health

ACGIH: American Conference of Governmental Industrial Hygienists

Enviromental exposure contols

If fume and/or dust are generated during high temperature operation such as soldering, exhaust ventilation for the whole room should be provided as well as local exhaust ventilation.

Storage and workplace shall equip an eyewash device and safety showers.

Personal protection equipment:Personal protective equipment should be selected properly based on the task.

(Respiratory)

Wear respiratory protection, depending on the situation.

If exposure is likely, wear an air-supplied respirator, air respirator, or oxygen respirator.

(Hands)

Wear protective gloves.

(Eyes)

Wear protective goggles.

(Skin and body)

Wear protective clothing, facial protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid
Shape:	Paste
Color:	Gray
Odor:	Data is not available.
Melting point/freezing point:	221℃/225℃（Solidus/Liquidus)
Boiling point or initial boiling point and boiling range:	275℃ or higher
Flammability:	Contains combustibles
Lower and upper explosion limit/flammability limit:	Data is not available.
Flash point:	Data is not available.
Auto-ignition temperature:	Data is not available.
Decomposition temperature:	Data is not available.
pH:	Data is not available.
Kinematic viscosity:	Data is not available.
Solubility:	Data is not available.
Partition coefficient n-octanol/water (log value):	Data is not available.
Vapor pressure:	Data is not available.
Density and/or relative density:	Data is not available.
Relative vapor density:	Data is not available.
Particle characteristics:	Data is not available.
Other data:	Data is not available.

10.STABILITY AND REACTIVITY

Reactivity:	Data is not available.
Chemical Stability:	Stable at room temperature, in air.
Possibility of Hazardous Reactions:	< Tin (for reference) > Reactive with Strong oxidizing materials, acids, strong bases, halogen and sulfur.
Conditions to Avoid:	Contact with incompatible materials.
Incompatible Materials:	< Tin (for reference) > Strong oxidizing materials, acids and organic peroxide.
Hazardous Decomposition Products:	Data is not available.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Not classified.
Skin corrosion/irritation:	Not classified.
Serious eye damage/irritation:	The basis of the concentration of ingredients in the relevant category in the product was classified as Category 2.
Sensitisation, respiratory :	Not classified.
Sensitisation, skin:	The basis of the concentration of ingredients in the relevant category in the product was classified as Category 1.
Germ cell mutagenicity:	Not classified.
Carcinogenicity:	Not classified.
Reproductive toxicity:	Not classified.
Specific target organ toxicity (Single exposure):	The basis of the concentration of ingredients in the relevant category in the product was classified as Category 2 (Nervous system, Kidney, Bone and joint)&Category 3(Respiratory irritant).
Specific target organ toxicity (Repeated exposure):	The basis of the concentration of ingredients in the relevant category in the product was classified asCategory 1&Category 2 (Nervous system, Kidney, Bone and joint).
Aspiration hazard:	Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Data is not available.
Persistence and degradability:	Data is not available.
Ecoaccumulation:	Data is not available.
Mobility in the soil:	Data is not available.
Hazards to the ozone layer:	Not classified.

13. DISPOSAL CONSIDERATIONS

Dispose of contents/container in accordance with local/regional/national/international regulations.

Waste residues:

Do not flush, bury, or dispose of waste liquid containing the product or cleaning waste liquid directly into the river.

Contaminated packaging:

Containers should be recycled after cleaning or disposed of according to the region/country/international regulation.

14. TRANSPORT INFORMATION

International Regulation:

Sea transport should follow IMDG regulations, and air transport IATA-DGR regulations.

This product is non dangerous goods.

Domestic regulations:

Road-transportation information:	Not applicable
Sea-transportation information:	Not applicable
Air-transportation information:	Not applicable
Emergency first aid guideline No.	None

Special safety measures

Avoid exposure to direct sunlight, avoid damage to the packaging during handling that might result in spillage.

Avoid packing in such a way that the package might be collapsed.

Do not transport together with any foodstuffs and feedstuffs.

Do not load any heavy goods on top of the product.

Do not treat containers roughly drop them.

15.REGULATORY INFORMATION (Japan)

Regulatory information with regard to this preparation in your country or region should be examined by your own responsibility.

Industrial Safety and Health Act (ISHA) :

Dangerous or harmful substances subject to be indicated

(Law:Article57-1, Enforcement order: Article 18-1 Appended Table 9)

Cabinet Order No.322 Tin and its compounds

Dangerous or harmful substances subject to be disclosed

(Law:Article57-2, Enforcement order: Article 18-2 Appended Table 9)

Cabinet Order No.322 Tin and its compounds

Cabinet Order No.379 Copper and its compounds

Labor Standards Act:

Chemical substances causing illness in the course of employment

(Law:Article75-2, Ordinance for Enforcement :Article 35, appended table 1-2(4)(1))

Nickel and its compounds

Water Pollution Control Act:

Designated substances (Law, Article 2, Paragraph 4, Enforcement Order, Article 3-3)

Cabinet Order No.45 Nickel and its compounds

Cabinet Order No.53 Copper and its compounds:

Air Pollution Control Act:

Substances that may correspond to harmful air pollutants (Central Environment Council 9th report)

Cabinet Order No.128 Copper and its compounds

Cabinet Order No.148 Nickel and its compounds (Substances requiring priority action are nickel compounds.)

16. OTHER INFORMATION

(Reference Literatures)

1. ExESS :EMORI Infotech Co., Ltd.
2. JIS Z 7252:Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Standards Association Chemicals (GHS)":Japanese
3. JIS Z 7253: Hazard communication of chemicals based on GHS- Labelling and Safety Data Sheet (SDS) :Japanese Standards Association
4. Guideline for Safety in your working place http://anzeninfo.mhlw.go.jp/ :Ministry of Health, Labor, and Welfare
5. Chemical Risk Information Platform (CHRIP) : National Institute of Technology and Evaluation
6 CAS RN®: US CAS (Chemical Abstracts Service)

Note

All statements and technical information in this publication are based on currently available data or other information and this publication may be revised as new relevant information becomes available.

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. This Safety Data Sheet is prepared in accordance with Japanese laws and regulations.