

Okai Corporation

Precious Metals Joining

39A Myrtle Street, Cranford, New Jersey 07016

Toll Free: 1.800.223.0025 Phone: 1.908.687.4443 Fax: 1.908.687.8714

SAFETY DATA SHEET

REVISION: 1

DATE: 04/20/2016

SECTION 1 - IDENTIFICATION

Print Date: 04/20/2016

Product Name: White Gold Brazing Alloy

Products Covered: This SDS covers the product codes shown below:
 6KWSCF, 6KWMCF, 6KWHCF, 8KWSCF, 8KWMCF, 8KWHCF
 9CWSCF, 9CWMCF, 9CWHCF, 9KWSCF, 9KWMCF, 9KWHCF
 10KWSCF, 10KWMCF, 10KWHCF, 12KWSCF, 12KWMCF, 12KWHCF
 14KWXSFC, 14KWSCF, 14KWMCF, 14KWHCF, 16KWSCF, 16KWHCF
 18KWXSFC, 18KWSCF, 18KWMCF, 18KWHCF, 22KWW

Product Description: Gold-based brazing alloy for use in joining metals. Product forms include wire, sheet, spheres, pieces, chopped pieces and powder.

Product Use: Product is applied to metal parts which are heated to a temperature until the filler metal melts and joins the parts.

Synonyms: Gold Solder, Gold Solder Alloy

Manufacturer: Okai Corporation, 39A Myrtle Street, Cranford, NJ 07016

Manufacture Phone: 1-800-223-0025 **Emergency Contact:** Chemtrec 1-800-424-9300

SECTION 2 - HAZARD IDENTIFICATION

GHS Classifications

Skin Sensitization: Hazard Category 1B

Carcinogenicity: Hazard Category 2

Specific Target Organ Toxicity, Single Exposure: Hazard Category 3

GHS Label Symbol(s): **Exclamation Mark** **Health Hazard**

**Signal Word(s):** WARNING

Hazard Statement(s)

H335: May cause respiratory irritation

H317: May cause an allergic skin reaction

H351: Suspected of causing cancer

Precautionary Statement(s)

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P261: Avoid breathing dust or fumes.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves and eye/face protection.

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Response:

P302+352: IF ON SKIN: Wash with plenty of water
P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER or doctor if you feel unwell.
P363: Wash contaminated clothing before reuse.
P272: Contaminated work clothing should not be allowed out of the workplace.
P333+313: If skin irritation or a rash occurs: Get medical advice/attention.
P308+313: If exposed or concerned: If exposed or concerned, get medical advice/attention

Storage:

P405: Store locked up.

Disposal:

P501: Dispose of container in accordance with local, regional and national regulations.

Emergency Overview:

Physical Appearance: Metallic solid in the form of wire, strip, foil, cut or chopped pieces, spheres or powder.

Immediate Concerns: Fumes from the brazing process can be irritating to the eyes and respiratory system. Hot metal can cause eye and skin burns. Avoid breathing fumes from the brazing process. Use only with adequate ventilation.

Medical Conditions Aggravated: May aggravate pre-existing skin conditions, liver disorders, kidney disorders, pulmonary function, Wilson's disease.

Routes of Entry: Potential routes of entry include inhalation of metallic fume and decomposition products from heating this material.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Weight %</u>
Gold	7440-57-5	5-70
Silver	7440-22-4	15-70
Copper	7440-50-8	10-50
Zinc	7440-66-6	3-35
Tin	7440-31-5	0-15
Nickel	7440-02-2	0-15

SECTION 4 - FIRST AID MEASURES

Eyes: Remove contact lenses. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

Skin: Immediately remove contaminated clothing. Flush area of skin contact immediately with large amounts of water for at least 15 minutes. If irritation persists after flushing, get medical attention promptly. Launder contaminated clothing before reuse.

Ingestion: If swallowed: induce vomiting if subject is conscious. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Inhalation: Remove victim to fresh air and administer oxygen. If not breathing, trained personnel may give artificial respiration. If breathing is difficult, give oxygen by trained

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personnel. Seek medical attention.

Signs and Symptoms of Overexposure:

Inhalation of powder, dust or fumes may be irritating to the respiratory system. Inhalation of fumes may cause Metal Fume Fever. Skin contact may cause contact or allergic dermatitis in sensitized individuals.

Notes To Physician: None of the ingredients of this product are acutely toxic by ingestion, nor are they absorbed through the skin. Long-term chronic exposure may cause argyria.

SECTION 5 - FIREFIGHTING MEASURES

Flammable Class: Non-flammable

Extinguishing Media: For fires involving this product use dry chemical, carbon dioxide, foam or water spray. Do not use water if metal is molten.

Explosion Hazards: This product is non-flammable and non-explosive. If it is present in a fire or explosion, potential decomposition byproducts may include metal oxides or metallic fume.

Fire Fighting Instructions: When fighting fires involving this product, wear full protective gear. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Procedures: Waste disposal method: Scoop up excess material and wash affected areas with soap and water. Avoid contact with skin and eyes. For powder forms, clean up spillage so as to minimize dispersion of dust, either with wet sweeping or vacuuming using HEPA filtration.

Special Protective Equipment: Avoid inhaling dusts or fumes.

Environmental Precautions: Prevent spills from entering sewers, water bodies or contaminating soil.

SECTION 7 - HANDLING AND STORAGE

Handling Precautions:

No special handling precautions are required.

Work and Hygiene Practices:

To prevent ingestion following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing or protective equipment before entering eating/drinking areas.

Storage Precautions:

Keep sealed when not in use. Store away from incompatible materials (see Section #10).

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>SUPPLIER OEL</u>
Gold	7440-57-5	None	None	
Silver	7440-22-4	0.01 mg/m ³	0.01 mg/m ³	

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Copper	7440-50-8	1.00 mg/m ³	1.00 mg/m ³
Zinc	7440-66-6	10.0 mg/m ³	5.00 mg/m ³
Tin	7440-31-5	2.00 mg/m ³	2.00 mg/m ³
Nickel	7440-02-2	1.00 mg/m ³	1.50 mg/m ³

Engineering Controls: The use of local ventilation is required to maintain the concentration of fumes evolved from the soldering/brazing process to well below the occupational exposure limits, within the operator's breathing zone and the general vicinity. Use of process enclosures, exhaust systems, and other engineering/administrative controls should be designed in accordance with local conditions. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices [most recent edition], for details.

Eyes and Face: Wear safety glasses with side shields as a minimum level of protection. Consult ANSI Z87.1 for more information.

Skin: When material is heated, wear thermal-insulated gloves to protect against burns.

Respiratory: When exposure limits (listed above) are exceeded or ventilation is inadequate, wear a NIOSH or European Standard approved respirator, in accordance with OSHA respirator regulations [29 CFR 1910.134] or European Standards [EN149]. Consult ANSI Z88.2 *American National Standard for Respiratory Protection* for guidance on proper selection, use and care of respirators.

Protective Clothing: Avoid skin contact. For soldering/brazing operations where hot metallic parts are handled and molten metal may be present, wear heat-resistant gloves and clothing to protect from burns.

Work Hygienic Practices: Minimize exposure in accordance with good hygiene practice. Good general hygienic practices include: Eating, drinking, and smoking should not be permitted in work areas. Wash thoroughly after handling, and before eating, drinking, using tobacco, applying cosmetics, or using the toilet. Keep area clean. Remove contaminated clothing promptly. Launder contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing. Avoid breathing dust, vapor or mist.

Other Precautions: Educate and train employees in the safe use and handling of this product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Flashpoint and Method	:	Not Applicable
Odor	:	None
Appearance	:	Metallic solid, various forms.
Colour	:	Yellow, silver, pink or red
Vapor Pressure	:	Not Applicable
Vapor Density	:	Not Applicable
Boiling Point	:	Not Determined
Solubility In Water	:	Insoluble
Evaporation Rate	:	Not Applicable
pH	:	Not Applicable
Melting Point	:	Alloy melting points >1100°F

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SECTION 10 - STABILITY AND REACTIVITY

Reactivity: None reasonably foreseeable

Stability: Stable

Polymerization: Will not occur.

Conditions To Avoid: Avoid contact with incompatible materials.

Incompatible Materials: Acetylene; ammonia; azides; nitric acid; halogens; ethylene imine; ethylene oxide; chlorine trifluoride; sulfuric acid; peroxides; peroxyformic acid; oxalic acid; tartaric acid; 1-bromo-2-propyne; permonosulfuric acid; carbon disulfide; hydrazine mononitrate; hydrazoic acid; hydrogen sulfide; bromates, chlorates, and iodates of alkali and alkali earth metals; hydroxylamine; selenium; tellurium.

Potential Hazardous Decomposition Products: Heating to elevated temperatures may release metal oxide fumes, copper fume, zinc oxide fumes, tin oxides.

SECTION 11 - TOXICOLOGICAL INFORMATION

This product has not been tested for toxicology by the manufacturer.

Oral LD50 (rat): This product has not been tested.

Dermal LD50 (rabbit): This product has not been tested.

Inhalation LD50 (rat): This product has not been tested.

Eye Effects: Can cause severe irritation and abrasion.

Skin Effects: Short and moderate term skin contact is usually not harmful. However, in sensitized individuals, or in contact with damaged skin, it may cause irritation, dermatitis, argyria.

Ingestion: Harmful if swallowed. Ingestion may cause nausea, vomiting, diarrhea and abdominal irritation. Prolonged ingestion may lead to argyria.

Inhalation: Inhalation of fumes may cause irritation of the respiratory tract, coughing, sneezing, headache, dizziness, metal fume fever characterized by flu-like symptoms such as chills, fever, nausea and vomiting.

Possible Effects of Chronic Exposure: Chronic exposure to silver can lead to argyria.

Carcinogenicity: This product contains Nickel which is classified as a potential human carcinogen by IARC ("2b", possibly carcinogenic to humans) and NTP ("K", known to be a human carcinogen). Exposure to some compounds of nickel has been shown to increase the risk of various cancers, although these effects have not been demonstrated among individuals occupationally exposed only to nickel metal. ACGIH classifies nickel metal as "A5" (not suspected as a human carcinogen)

Sensitization: No ingredients used in this material are known to be skin or respiratory sensitizers.

Germ Cell Mutagenicity: No ingredients have been determined to be germ cell mutagens.

Reproductive Effects: No ingredients used in this material are identified as a reproductive toxin.

Target Organs: Skin, conjunctiva, mucous membranes, respiratory system, lungs, liver, kidneys and eyes.

Mutagenicity: No ingredients in this material are known to be mutagenic.



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SECTION 12 - ECOLOGICAL INFORMATION

No ecological data is available for the product or its components.

Ozone Depletion Potential: This product contains no ingredients listed in the Annexes to the Montréal Protocol on Substances that Deplete the Ozone Layer.

SECTION 13 - DISPOSAL CONSIDERATIONS

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Consult applicable Federal, State/Provincial, and local regulations.

SECTION 14 - TRANSPORT INFORMATION

Transport is not regulated by USDOT, TDG (Canada), IATA, or IMO.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES

SARA TITLE III

- Fire:** No
- Pressure Generating:** No
- Reactivity:** No
- Acute:** Yes
- Chronic:** Yes

Reportable Ingredients Section 313:

Silver CAS# 7440-22-4	15-70 wt%	as Silver Compounds
Copper CAS# 7440-50-8	10-45 wt%	as Copper Compounds
Zinc CAS# 7440-66-6	3-35 wt%	as Zinc Compounds, Zinc fume or dust
Nickel CAS# 7440-02-0	0- 5 wt%	as Nickel Compounds

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Reportable Ingredients	Wt%	Cercla Reporting Quantity
Silver CAS# 7440-22-4	15-70	1000 lbs
Copper CAS# 7440-50-8	10-45	5000 lbs
Zinc CAS# 7440-66-6	3-35	1000 lbs

TSCA (TOXIC SUBSTANCE CONTROL ACT)

The components of this material are included on the TSCA inventory

California Proposition 65

This material contains Nickel which is regulated under Proposition 65

SECTION 16 - OTHER INFORMATION

HMIS Ratings

HEALTH	*	2
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FLAMMABILITY	0	
PHYSICAL HAZARD	1	
PERSONAL PROTECTION	I	

PPE - Protective eyewear and gloves (Personal Protection Index "B") as standard PPE. HMIS recommends that its ratings be used only in conjunction with a fully implemented HMIS program, and that specific PPE codes be created by the user, who is familiar with the actual conditions under which the product is used. We cannot anticipate every condition of the product's use, and it is the user's responsibility to evaluate the hazards pertinent to its specific operations, and to determine the specific PPE required.

Revision Summary:

Current Document: 04/20/2016

Original Document: 02/20/2014

Manufacturer Disclaimer:

This Material Safety Data Sheet is prepared in accordance with U.S. OSHA, Canadian WHMIS, and European Community Safety Data Sheet directives. This document is offered pursuant to OSHA's Hazard Communication Standard 29 CFR 1910.1200. The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared, and are offered in good faith. However, no warranty, guaranty or representation is expressed or implied as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable EC, national or state laws. Okai Corporation assumes no responsibility for injury to the end user caused by the material even if proper safety procedures are followed. The end user should determine the suitability of the information for their particular usage. The end user assumes the risk in the use of this material. The information in this document may be changed periodically.