

COMPANY INFORMATION

COMPANY NAME: ORTHO SPECIALTIES
COMPANY ADDRESS: 3820 OHIO AVE - SUITE 15
 ST. CHARLES, IL 60174
COMPANY PHONE: 630-443-0225
COMPANY FAX: 630-443-0224
COMPANY WEB ADDRESS: www.orthospecialties.com

316 - BUCCAL TUBE MATERIAL

DOCUMENT NUMBER:	SDS56
REVISION DATE:	09/26/2014
REVISION:	REV. E
NUMBER OF PAGES:	1

1 – PRODUCT IDENTIFICATION

TRADE NAME: 316
PRODUCT CLASS: Iron Base Alloy
PRODUCT USE: Orthodontic Wires Buccal Tubes

containing the component elements and breathing those fumes may present potentially significant health hazards. Extended (several years) exposure to iron dust or fume may result in signs of pneumoconiosis (i.e. siderosis). Physical examination of those exposed to iron dust have not indicated any disability.

Emergency and First Aid Procedures: If irritation occurs, flush eyes, wash skin, remove to fresh air, as applicable. Contact physician.

2–HAZARDOUS INGREDIENTS

Ingredient	CAS #	Nominal Chemistry Percent	TLV Mg/m3	PEL Mg/m3
Fe Iron	1309-37-1	60	5	10
** Cr Chromium	7440-47-3	18	0.5	1
** Ni Nickel	7440-02-0	14	1	1
Mo Molybdenum	7439-98-7	2.25	10	15
Mn Manganese	7439-96-5	2	Dust- 5 Fume- 1	5-ceiling

6–REACTIVITY DATA

Cast ingot is stable at ordinary temperatures, however, caution should be taken with acids, bases, and oxidizers. Molten metal will react violently with water.

7–SPILL AND LEAK PROCEDURES

Solid ingot material will be recycled. Residue from cutting or grinding should be swept or vacuumed and placed in suitable containers for disposal by local, state, or federal waste disposal regulations.

** Has been recognized as a suspect carcinogen by NTP and IARC. 4 – FIRST AID MEASURES

8–SPECIAL PROTECTION INFORMATION

Respiratory Protection: When exposure limits are exceeded, use proper, approved respirator.
Ventilation: Use a local exhaust when cutting, grinding, welding, or melting.
Eye Protection and Protective Clothing: Should be used when cutting, grinding, welding, or melting.

3–PHYSICAL DATA

Boiling Point (oF): N/A
Vapor Pressure (mm Hg.): N/A
Vapor Density (Air = 1): N/A
Solubility in Water: Insoluble
Appearance and Odor: Metallic gray in color – no odor.
Specific Gravity (H2O=1): Approx. 8
Percent Volatile by Volume: N/A
Evaporation Rate: N/A
Melting Point (oF): Approx. 2700oF

9–SPECIAL PRECAUTIONS

Use good housekeeping practices to prevent accumulations of dust and to keep airborne dust concentrations at a minimum. Avoid breathing dust or fumes.

4–FIRE AND EXPLOSION DATA

Flash Point (oF): N/A
Flammable Limits: N/A
Extinguishing Media: Use dry powder extinguishing agent.
Fire and Explosion Hazard: 1) Metal powder dispersed in air may cause fire and explosion. 2) Molten metals can ignite combustibles. 3) Good house-keeping must be maintained.

PEL/TLV exposures should be kept below recommendations by OSHA and ACGIH to insure proper health protection of worker.

10–SARA SECTION 313 SUPPLIERS NOTIFICATION

This product may contain the following chemicals which are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40 CFR 372: Aluminum; Manganese; Chromium; Nickel; Cobalt; Vanadium; Copper.

Refer to the Hazardous Ingredients Section of this MSDS for the appropriate CAS numbers and percent by weight.

5–HEALTH HAZARD DATA

Primary Routes of Entry:
 Inhalation of dust or fume.
 Under normal conditions, exposure to cast ingots presents few health hazards in itself. Thermal cutting and melting of ingots may produce fumes

11–DISCLAIMER A

Although the information and recommendations in this data sheet are to the best of our knowledge correct, it is recommended that you make your own determination of the material's suitability for your purpose before you use it. The information contained in this data sheet has been reproduced from the manufacturer's data; the accuracy of this information is the responsibility of the manufacturer. ODP accepts no responsibility for damage of any nature resulting from the use of, or the reliance upon, this data sheet.

COMPANY INFORMATION

COMPANY NAME: ORTHO SPECIALTIES
COMPANY ADDRESS: 3820 OHIO AVE - SUITE 15
 ST. CHARLES, IL 60174
COMPANY PHONE: 630-443-0225
COMPANY FAX: 630-443-0224
COMPANY WEB ADDRESS: www.orthospecialties.com

1 – PRODUCT IDENTIFICATION

Identity (As Shown on Label): LHK-1205-650

Product Use: Brazing paste used for joining metals by heating the parts to be joined and this paste to or above the melt point of filler metals.

2–HAZARDOUS INGREDIENT INFORMATION

Filler Metal (65% by Weight)

Element	CAS #	OSHA PEL	ACGIH TLV	%
Silver	7440-22-4	0.01 mg/m3	0.01 mg/m3	56
Copper	7440-50-8	0.1 mg/m3 (fume)	0.2 mg/m3 (fume)	22
Zinc	1314-13-2	5 mg/m3 (fume)	5 mg/m3 (fume)	17
Tin	7440-31-5	2 mg/m3	2 mg/m3	5

Flux-Binder (35% by Weight)

The specific chemical identity is being withheld as a trade secret. Disclosure will be provided to medical personnel in the event of an emergency.

Ingredient	OSHA PEL	ACGIH TLV	Other Limits
C520	2.5 mg/m3 (fluoride)	2.5 mg/m3 (fluoride)	---
C529	10 mg/m3	10 mg/m3	---
C511	100 ppm	100 ppm	---

3–PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: >315oF

Vapor Pressure (mm hg): No data available

Vapor Density (Air=1): >1

Solubility in Water: Negligible

Specific Gravity (H₂O=1): >2

Melting Point: Approximately 1205oF

Evaporation Rate: (n-butyl acetate=1): <1

Appearance and Odor: Light gold paste with a characteristic odor.

4–FIRE AND EXPLOSION HAZARD DATA

Flash Point: >140oF

Flammable Limits (LEL & UEL): No data available

Extinguishing Media: Regular foam, carbon dioxide, and dry chemical.

Hazardous Products of Combustion: Hydrogen fluoride, potassium oxide, boric oxide, carbon monoxide, aldehydes, carbon dioxide, various hydrocarbons, tin fumes, zinc oxide fumes, toxic metal oxide fumes.

Special Fire Fighting Procedures: Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Unusual Fire and Explosion Data: None

LHK-1205-650 - BRAZING PASTE

DOCUMENT NUMBER:	SDS58
REVISION DATE:	09/26/2014
REVISION:	REV. E
NUMBER OF PAGES:	2

5–REACTIVITY DATA

Stability: Stable

Hazardous Polymerization: Will not occur

Incompatibility (materials and conditions to avoid): Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard. Acids, alkalis, oxidizing agents, sodium and calcium hypochlorites, acetylene, ammonia, hydrogen peroxide, magnesium metals, halogens, chlorinated rubber, chlorides, turpentine, alcohols, amines.

6–HEALTH HAZARD DATA

Health Hazards (effects of overexposure to alloys and their fumes): Absorption and inhalation of silver compounds may cause a blue-gray discoloration of the skin, mucous membranes, and eyes called argyria. This discoloration may become permanent. Localized argyria may occur from silver particles imbedded in the skin during handling. Copper fume may cause metal fume fever with flu-like symptoms and skin and hair discoloration. While industrial dermatitis has not been reported, keratinization of the hands and the soles of the feet have been reported. Systemically as well, copper dust and fume cause irritation of the upper respiratory tract, metallic taste in the mouth, and nausea. Inhalation of zinc fumes may cause "metal fume fever." Onset symptoms may be delayed 4-12 hours and include irritation of the nose, mouth and throat, cough, stomach pain, headache, nausea, vomiting, metallic taste, chills, fever, pains in the muscles and joints, thirst, bronchitis or pneumonia and a bluish tint to the skin. These symptoms go away in 24-48 hours and leave no effect. The inhalation of inorganic tin fumes may cause an apparent benign pneumoconiosis called stannosis, which is reported not to be disabling.

Health Hazards (effects of overexposure to flux-binder):

Eyes: Direct contact can cause eye burns with possible permanent damage.

Skin: Severely irritating to the skin. Prolonged contact may cause burns. Systemic poisoning through absorption is possible.

Inhalation: At ambient temperatures this material is not expected to cause any adverse effects. Fumes when heated can cause irritation to the respiratory tract, pulmonary edema and death.

Ingestion: Can severely irritate and burn the mouth, throat, and stomach. Ingestion may cause systemic poisoning. Symptoms include abdominal pain, nausea, and vomiting, pulmonary edema by aspiration.

Medical Conditions Generally Aggravated by Exposure: Pre-existing eye, skin or respiratory disorders.

Target Organs: Repeated exposure to fluoride containing dust and fumes can result in excessive calcification of bones and certain ligaments; stiffness and limitation of motion can result. Nasal system, respiratory system, skin, eyes, increased risk with Wilson's disease

COMPANY INFORMATION

COMPANY NAME: ORTHO SPECIALTIES
COMPANY ADDRESS: 3820 OHIO AVE - SUITE 15
 ST. CHARLES, IL 60174
COMPANY PHONE: 630-443-0225
COMPANY FAX: 630-443-0224
COMPANY WEB ADDRESS: www.orthospecialties.com

LHK-1205-650 - BRAZING PASTE

DOCUMENT NUMBER:	SDS58
REVISION DATE:	09/26/2014
REVISION:	REV. E
NUMBER OF PAGES:	2

6-HEALTH HAZARD DATA CONTINUED...

Carcinogen:

NTP: No
 IARC Monographs: No
 OSHA Regulated: No

H.M.I.S. Rating:

Health: 3 (indicates chronic or delayed health hazards).
 Flammability: 2
 Reactivity: 0

7-EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Immediately flush eyes with plenty of water. Get medical attention.

Skin: Immediately flush skin with soap and water. Get medical attention if irritation or burn develops

Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get medical attention.

Ingestion: If large quantities of the material are swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

8-PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Scoop up excess material and clean with soap and water.

Waste Disposal Method: In accordance with all local, state, and federal regulations.

Precautions to be Taken in Handling and Storage: Avoid direct contact with this material. Use only with adequate ventilation. Keep lid tightly closed except when removing product. Store at ambient temperatures.

9-CONTROL MEASURES

Respiratory Protection: NIOSH approved if TLV is exceeded.

Ventilation: Local Exhaust-Yes; Mechanical (General)-Yes

Protective Gloves: Chemical resistant

Eye Protection: Safety glasses

Other Protective Clothing or Equipment: Clothing to prevent skin contact.

Work/Hygienic Practices: Wash thoroughly after handling with this product. See American National Standard Z49.1 (Safety in Welding and Cutting) published by the American Welding Society.

10-REGULATORY INFORMATION

Hazardous Substances – Section 302.4 (40 CFR Part 302): This product as packaged does not contain any hazardous substance equal to or greater than the Reportable Quantity.

Toxic Chemicals – Section 313 (40 CFR Part 372):

Chemical	CAS#	Percent
Silver	7440-22-4	36.4
Copper	7440-50-8	14.3
Zinc	1314-13-2	11.0

Hazard Categories – 311/312 (40 CFR Part 370):

Immediate Health: X
Delayed Health: X
Fire: X
Reactive:
Sudden Release of Pressure:

11-DISCLAIMER

Although the information and recommendations in this data sheet are to the best of our knowledge correct, it is recommended that you make your own determination of the material's suitability for your purpose before you use it. The information contained in this data sheet has been reproduced from the manufacturer's data; the accuracy of this information is the responsibility of the manufacturer. ODP accepts no responsibility for damage of any nature resulting from the use of, or the reliance upon, this data sheet.