Orthodontic Design and Production, Inc.

## Braze for Buccal Tube Caps

## MATERIAL SAFETY DATA SHEET

### 1 – IDENTIFICATION

**PRODUCT NAME:** Braze for Buccal Tube Caps

**CHEMICAL FAMILY:** Alloy

**CHEMICAL NAME:**

**FORMULA:**

**COMPANY NAME:**

Orthodontic Design and Production

1370 Decision Street, Suite D

Vista, CA 92081 (760) 734-3995

### 2 – HAZARDOUS INGREDIENTS

1) Filler metal (65% by weight)

| MATERIAL | % BY WEIGHT | OSHA PEL | ACGIH TLV |
|---|---|---|---|
| **Silver (7440-22-4)** | 56% | .01mg/m3 | 0.01mg/m3 |
| **Copper (7440-50-8)** | 22% | 0.1mg/m3 (fume) | 0.2mg/m3 (fume) |
| **Zinc (1314-13-2)** | 17% | 5mg/m3 (fume) | 5mg/m3 (fume) |
| **Tin (7440-31-5)** | 5% | 2mg/m3 | 2mg/m3 |

2) Flux-Binder (35% by weight)

| MATERIAL | OSHA PEL | ACGIH TLV |
|---|---|---|
| **C520** | 2.5 mm/m3 (fluoride) | 2.5mm/m3 (fluoride) |
| **C529** | 10mg/m3 | 10mg/m3 |
| **C511** | 100ppm | 100ppm |

### 3 – 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. Systematically as well, copper dust and fume cause irritation of the upper respiratory tract, metallic taste in 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 blush 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 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.

**CARCINOGEN:**

**NTP:** no

**IARC MONOGRAPHS:** no

**OSHA REGULATED:** no

**H.M.I.S. RATING:** Health= 3*, Flammability=2, Reactivity= 0

(*) Indicates chronic or delayed health hazards

**Note:** This MSDS was prepared in accordance with the requirements of the OSHA Haard Communication Standard (29 CFR 1910.1200) and is to be used only for this product. The information contained in this MSDS is, to the best of our knowledge, believed to be accurate.
**CONTACT CHEMTREC (800) 424-3900 IN CASE OF EMERGENCY**

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### 4 – PHYSICAL AND CHEMICAL PROPERTIES

**BOILING POINT:** >315 degrees Fahrenheit

**VAPOR PRESSURE:** n/a

**VAPOR DENSITY (air=1):** >1

**SOLUBILITY IN WATER:** Negligible

**SPECIFIC GRAVITY (H20=1):** >2

**MELTING POINT:** Approximately 1205 degrees Fahrenheit

**EVAPORATION RATE (n-butyl acetate==1):** <1

**APPEARANCE AND ODOR:** Light gold paste with a characteristic odor.

### 5 – FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT:** >140 degrees Fahrenheit

**FLAMMABLE LIMITS:** n/a

**EXTINGUISHING MEDIA:** Regular foam, carbon dioxide, and dry chemical.

**HAZARDOUS PRODUCTS OR 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 face-piece operated in the positive pressure demand mode with appropriate turnout gear and chemical resistant personal protective equipment.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** none

### 6 – REACTIVITY DATA

**STABILITY:** Stable

**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, alkalies, oxidizing agents, sodium and calcium hypochlorites, acetylene, ammonia, hydrogen peroxide, magnesium metals, halogens, chlorinated rubber, chlorides, turpentine, alcohols, and amines.

### 7 – EMERGENCY/FIRST AID MEASURES

**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 – HANDLING AND STORAGE

**HANDLING AND STORAGE PRECAUTIONS:** Avoid direct contact with this material. Use only with adequate ventilation. Keep lid tightly closed except when removing product. Store at ambient temperatures.

### 9 – SPECIAL PROTECTION

**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 – SPILL OR LEAK PROCEDURES

**STEPS IN CASE MATERIAL IS RELEASED OR SPILLED:** Scoop up excess material and clean with soap and water.

### 11– DISPOSAL INFORMATION

**WASTE DISPOSAL METHOD:** In accordance with all local, state and federal regulations.

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## 12 – REGULATORY INFORMATION

**EPA SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA TITLE III)**

**HAZARDOUS SUBSTANCES- SECTION 302.4 (40 CFR Part 302):**

**CHEMICAL:** no

**CAS#:** no

**REPORTABLE QUANTITY:** no

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:** yes

**DELAYED HEALTH:** yes

**FIRE:** yes

## 13 – DISCLAIMER OF WARRANTIES

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy of completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for his or her particular purpose(s).

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