

**SECTION 1: IDENTIFICATION**

**1.1 Product identifier**

**Product Name:** Gold Silver Copper Zinc Alloy

**Synonyms:** Yellow Karat Gold

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Product Use:** Products are solid metals and are supplied in various shapes.

**1.3 Details of the supplier of the Safety Data Sheet**

**Manufacturer Name:** Reliance Orthodontic Products

**Manufacturer Address:** 1540 W Thorndale Ave  
Itasca, IL 60143  
USA

**Manufacturer Phone Number:** 1 (800) 323-4348

**1.4 Emergency telephone number**

1 (800) 323-4348

**SECTION 2: HAZARD(S) IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Non-hazardous in solid bulk form.

Dust or fine turnings may cause respiratory irritation (Category 3), H335

Dust or fine turnings may cause eye irritation (Category 2A), H319

Metal fume may be harmful if inhaled (Category 5), H333

**2.2 Label elements**

**Hazard pictogram(s):**



**Signal word:** Warning

**Hazard statement(s):**

Bulk solid material is non-hazardous.

Hazard statement(s) for dust or fine turnings:

H319 May cause eye irritation.

H335 May cause respiratory irritation.

Hazard statement(s) for metal fume:

H333 May be harmful if inhaled

**Precautionary statement(s):**

For dust or fine turnings:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protection.

P281 Use personal protective equipment as required.

P305 + P351 + P338 IF IN EYES: Rinse with water for 15 minutes. Remove contact lenses, if present and continue rinsing.

P342 + P311 If experiencing respiratory symptoms call a poison center or physician.

P370 + P378 In case of fire: Use dry sand, dry chemical, CO2 or class D extinguisher.

For metal fume:

P260 Do not breathe dust/fume/gas/mist/vapor/spray.

P285 In case of inadequate ventilation wear respiratory protection.

**Hazard not otherwise classified:** Dust or fine turnings may be irritating to mucous membranes, respiratory tract or eyes upon contact.

**2.3 Other hazards**

Not Applicable

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Composition**

Substance	CAS No.	% Weight	Classification
Gold	7440-57-5	1.4% - 79.2%	H319, H33, H335
Silver	7440-22-4	1.0% - 84.0%	H319, H333, H335
Copper	7440-50-8	1.0% - 90.0%	H319, H333, H335
Zinc	7440-66-6	1.0% - 19.0%	H319, H333, H335

Gold EC Number: 231-165-9  
Silver EC Number: 231-131-3  
Copper EC Number: 231-159-6  
Zinc EC Number: 231-175-3

#### SECTION 4: FIRST AID MEASURES

##### 4.1 Description of first aid measures

**Inhalation:** Inhalation of dust or metal fumes may cause Argyria, a blue-green discoloration of the skin, mucous membranes and eyes. Also, may cause irritation of the respiratory tract or metal fume fever with symptoms of fever, chills, nausea, chest tightness or metallic taste. If inhaled, remove from exposure, move to fresh air and seek immediate medical attention. Use mechanical ventilation or respiratory protection to avoid inhaling metal fumes.

**Skin Contact:** Localized Argyria may result from contact. Remove contaminated clothing. Thoroughly wash affected area with soap and water. Consult with doctor.

**Eye Contact:** Dust may cause irritation. In the case of eye contact, flush with large amounts of water for at least 15 minutes and seek immediate medical attention.

**Ingestion:** If ingested, may cause generalized Argyria, and may irritate gastrointestinal tract. Seek emergency medical attention.

##### 4.2 Most important symptoms and effects, both acute and delayed

Exposure to dust or metal fumes may irritate respiratory system and result in metal fume fever.

##### 4.3 Indication of any immediate medical attention and special treatment needed

No Data Available

#### SECTION 5: FIREFIGHTING MEASURES

##### 5.1 Extinguishing media

**Suitable Extinguishing Media:** Water spray, alcohol resistant foam, dry chemical, or CO2 extinguisher

**Unsuitable Extinguishing Media:** No data available

##### 5.2 Special hazards arising from the substance or mixture

**Hazardous Combustion Byproducts:** No data available

##### 5.3 Advice for firefighters

**Special Protective Equipment:** Use self-contained breathing apparatus.

**Special Remarks on Fire Hazards:** No data available

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

**Protective Equipment:** Use appropriate personal protective equipment based on site conditions.

**Emergency Procedures:** Avoid breathing dust or fumes. Use adequate ventilation. Remove all ignition sources if dust is present. Note that dust and fine shavings may be flammable.

#### 6.1.2 For emergency responders

**Protective Equipment:** Use appropriate personal protective equipment based on site conditions.

**Emergency Procedures:** Control ignition sources and use non-sparking tools when handling dust or finely ground turnings which may be flammable.

### 6.2 Environmental precautions

No special precautions for bulk solid material. Do not let dust or turnings enter drains.

### 6.3 Methods and material for containment and cleaning up

Sweep up or shovel bulk solid and store in sealed container prior to disposal/recycle. Avoid static discharge when collecting dust or fine turnings which may be flammable.

### 6.4 Reference to other sections

For disposal see Section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Further processing of solid material may generate combustible dust or turnings. Provide adequate ventilation and routine maintenance to prevent the buildup of combustible dust. Implement control measures to reduce the generation of static discharge where dust is created.

### 7.2 Conditions for safe storage, including any incompatibles

**Conditions for Safe Storage:** Keep container closed when not in use.

**Incompatibilities:** Acetylene, ammonia, cyanides, oxidizers, hydrogen peroxide, strong acids and bases.

### 7.3 Specific end use(s)

Apart from the use mentioned in Section 1.2 no other specific uses are stipulated.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Basis
Gold	7440-57-5	REL	Not Established	OSHA Permissible Exposure Limit Table Z-1
		REL	Not Established	NIOSH Recommended Exposure Limit
		TWA	Not Established	USA. ACGIH Threshold Limit Value (TLV)
Silver	7440-22-4	REL	0.01 mg/m <sup>3</sup>	OSHA Permissible Exposure Limit Table Z-1
		REL	0.01 mg/m <sup>3</sup>	NIOSH Recommended Exposure Limit
		TWA	0.1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Value (TLV)
Copper	7440-50-8	REL	1 mg/m <sup>3</sup> (dust or mist)	OSHA Permissible Exposure Limit Table Z-1
		REL	0.1 mg/m <sup>3</sup> (fume)	OSHA Permissible Exposure Limit Table Z-1
		REL	1 mg/m <sup>3</sup> (dust or mist)	NIOSH Recommended Exposure Limit
		REL	0.1 mg/m <sup>3</sup> (fume)	NIOSH Recommended Exposure Limit
		TWA	0.2 mg/m <sup>3</sup> (fume)	USA. ACGIH Threshold Limit Value (TLV)
Zinc	7440-66-6	REL	Not Established	OSHA Permissible Exposure Limit Table Z-1
		REL	Not Established	NIOSH Recommended Exposure Limit
		TWA	Not Established	USA. ACGIH Threshold Limit Value (TLV)

## 8.2 Exposure controls

**8.2.1 Appropriate Engineering Controls:** Provide local exhaust when cutting, grinding or heating. Use good industrial hygiene practices. Keep dust and fume buildup to a minimum. Avoid static discharge where dust or turnings are generated.

### 8.2.2 Personal Protective Equipment:

**Respiratory Protection:** Respiratory protection is not required when handling bulk solid materials. Where nuisance dusts are generated, use N95 or type P1 (EN143) dust mask. Use air purifying cartridge respirator equipped with an N100, R100 or P100 filters when exposed to metal fumes.

**Skin Protection:** Wear leather or Kevlar gloves when handling metal stock to prevent cuts.

**Eye Protection:** Wear ANSI Z87.1 approved safety glasses with side shields.

**8.2.3 Environmental exposure controls:** Do not let product enter drains.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

- (a) **Appearance:** solid metal, yellowish to white in color
- (b) **Odor:** no odor
- (c) **Odor threshold:** No data available
- (d) **pH:** No data available
- (e) **Melting Point/Freezing Point:** No data available
- (f) **Boiling Point:** No data available
- (g) **Flash Point:** No data available
- (h) **Evaporation Rate:** No data available
- (i) **Flammability:** No data available
- (j) **Upper/Lower Explosive Limits:** No data available
- (k) **Vapor Pressure:** No data available
- (l) **Vapor Density:** No data available
- (m) **Relative Density:** No data available
- (n) **Solubility:** No data available
- (o) **Partition coefficient: n-octanol/water:** No data available
- (p) **Auto-Ignition Temperature:** No data available
- (q) **Decomposition Temperature:** No data available
- (r) **Viscosity:** No data available
- (s) **Explosive properties:** No data available
- (t) **Oxidizing properties:** No data available

**9.2 Other information**

No data available

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity**

Stable under normal conditions

**10.2 Chemical stability**

Stable under normal temperatures and pressures

**10.3 Possibility of hazardous reactions**

No data available

#### 10.4 Conditions to avoid

Overheating during brazing, soldering or melting.

#### 10.5 Incompatible materials

Avoid acetylene, ammonia, cyanides, oxidizers, hydrogen peroxide, strong acids and bases

#### 10.6 Hazardous decomposition products

No data available

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

**Acute toxicity:** No data available

**Skin corrosion/irritation:** No data available

**Serious eye damage/irritation:** No data available

**Respiratory or skin sensitization:** No data available

**Germ cell mutagenicity:** No data available

**Carcinogenicity:** None of the components of this product present at levels greater than or equal to 0.1% has been identified as a probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.

**Reproductive toxicity:** No data available

**Specific target organ toxicity (single exposure):** No data available

**Specific target organ toxicity (repeated exposure):** No data available

**Aspiration hazard:** No data available

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1 Toxicity

No data available

#### 12.2 Persistence and degradability

No data available

#### 12.3 Bioaccumulative potential

No data available

#### 12.4 Mobility in soil

No data available

**12.5 Results of PBT and vPvB assessment**

No data available

**12.6 Other adverse effects**

No data available

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

Surplus materials may have reclaim value. Dispose of unsalvageable material in accordance with applicable Federal, State/Provincial, and Local regulations. Subject to federal disposal regulations: US EPA 40 CFR 262. .

**SECTION 14: TRANSPORT INFORMATION**

Not regulated as a dangerous good per U.S. DOT 49 CFR 171-180 or UN Dangerous Goods List.

**14.1 UN number**

Not assigned

**14.2 UN proper shipping name**

Not applicable

**14.3 Transport hazard class(es)**

Not regulated – no hazard assigned

**14.4 Packing group**

Not applicable

**14.5 Environmental hazards**

No data available

**14.6 Transport in bulk**

Not applicable

**14.7 Special precautions for user**

No special precautions

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for substance or mixture**

CERCLA Sections 102a/103 Hazardous Substances (40 CFR 302.04): Not regulated.



**SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 311/312 Hazards:** Copper and silver are subject to reporting requirements of SARA Title II, Sections 311/312.

**SARA 313 Components:** Copper and silver are subject to reporting under SARA Title III, Section 313

**Massachusetts Right To Know Components:** Zinc: CAS No. 7440-66-6  
Copper: CAS No. 7440-50-8  
Silver: CAS No. 7440-22-4

**Pennsylvania Right To Know Components:** Zinc: CAS No. 7440-66-6  
Copper: CAS No. 7440-50-8  
Silver: CAS No. 7440-22-4

**New Jersey Right To Know Components:** Zinc: CAS No. 7440-66-6  
Copper: CAS No. 7440-50-8  
Silver: CAS No. 7440-22-4

**California Prop. 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**SECTION 16: OTHER INFORMATION**

**NFPA Rating**

Health hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

**HMIS Rating**

Health hazard: 0

Flammability: 0

Physical Hazard 0

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