

### COMPANY INFORMATION

**COMPANY NAME:** ORTHO SPECIALTIES  
**COMPANY ADDRESS:** 3820 OHIO AVE - SUITE 15  
 ST. CHARLES, IL 60174  
**COMPANY PHONE:** 630-443-0225  
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SHEATHS	
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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE

#### 1.1 Product Identifier:

#### Sheaths

Silver alloy wire for brazing:

Ag-Cu-Zn-Sn.

Austenitic stainless steel alloy with Cr-Ni or Cr-Ni and Mo:

Can be supplied in tape or wire form. Brackets, bands, tubes and devices made of tape and wire for orthodontic.

PVC Products:

Polychloride of vinyla.

### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Silver alloy wire for brazing:

Silver alloys with the following nominal composition in accordance with DIN EN 1044:1999 – Alloy AG 102 (values in weight percent): Ag 55-57 / Cu=21.0 – 23.0 / Zn = 15.0-19.0 / Sn=4.0 – 6.0.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Cr: 17.0-20.0%  
 Ni: 8.0-13.0%  
 Mn: ≤ 2.0%  
 Mo: Max 2.5%

PVC products: Polychloride of vinyla.

### SECTION 3: HAZARDS IDENTIFICATION

Silver alloy wire for brazing:

The chemical elements do not represent any known hazards regarding this intention of use.

CAS=Chemical Abstracts Service (USA)

PEL=Permissible Exposure Limit in mg/m3

TLV=Threshold Limit Value

ACGIH=American Conference of Governmental Industries Hygienists

IARC=International Agency for Research on Cancer

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

The term "hazards" and risk material has been used with "MSDS" (Material Safety Data Sheet), and should be understood and defined according to "OSHA" Hazard Communication Standard" (Occupational Safety and Health Act) (Document reference: 29 CFR Part 2920, 1200), PEL (Personal Exposure Limit), from USA. Observe the laws and directives in each country. The documents attached, appendices, reference lists, etc.. that are or could be incorporated, should be considered.

Element	CAS No.	OSHA (PEL)	TLV (ACGH)	IARC (Listado)
Cr	7440-47-3	1	0.5	No
Ni	7440-02-0	1	1	Yes
Mn	7439-96-5	5	0.1	No
Mo	7439-98-7	15	10	No

CAS=Chemical Abstracts Service (USA)

PEL=Permissible Exposure Limit in mg/m3

TLV=Threshold Limit Value (ACGIH=American Conference of Governmental Industries Hygienists).

IARC=International Agency for Research on Cancer

Nickel is listed on "National Toxicology Programs" from USA and on "Annual Report on Carcinogens," as well as on "International Agency for Research on Cancer (IARC). Monographs point it out as potentially carcinogenic. However, recent epidemiological notes studied and published by IARC do not attach the increase rate disease associated to alloys in metallic use.

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PVC products:

Ingestion: Take care to avoid ingestion.  
 Skin: Casting material causes burning.  
 Eyes: Mechanical irritation.  
 Inhalation: Avoid inhaling in powder form.

**4–FIRST AID MEASURES**

Silver alloy wire for brazing:

The alloy that shall be used with paste or solder flux when not used in correct form may be very harmful to human organism. The flow components may cause some irritation to the respiratory system or skin damage. Avoid contact with skin. Use hand protector cream. Be careful so that you don't ingest flow residues accidentally. The respiratory system irritation is caused by detached smoke, which contains, in low quantities, H<sub>2</sub>O<sub>3</sub>, HBO<sub>3</sub> and in lower quantities HF; this quantity should never be over 3ppm. For this reason, the German standard DIN 8511 recommends, "The workplace or station for brazing must be appropriately ventilated." In case of accidental ingestion or skin damage, see a physician immediately. In case of skin contact, wash immediately with water.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Powder Inhalation: Remove the affected person to a place with fresh air and ventilation; if it is not enough, see a physician immediately.  
Eye Contact with Powder: Wash the eyes with plenty of water to remove the particles. See a physician immediately.  
Skin Contact with Powder: Wash in current water to remove the excess, and then wash with water and soap. See a physician.  
Ingestion: See a physician immediately.

PVC products: If exposed to smoke generated by heating, remove the patient to fresh and ventilated air.

Skin: Wash with water and soap.  
Eyes: Wash with plenty of water.

**5–FIRE FIGHTING MEASURES**

Silver alloy wire for brazing: Extent fire fighting measures according to requirements and directives in use. Normal corrective measures for metallic materials.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Not required. Observe laws and directives in use in each country. Fire fighting measures should be taken especially when the material is subject to operations that make powder, sparks, or excessive heat.

PVC products: When burned liberates HCl. Use protective clothes and EPI's. Extinguish the fire with water, CO<sub>2</sub>, and foam.

**6–ACCIDENTAL RELEASE MEASURES**

Silver alloy wire for brazing: Not necessary.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L: Not required. Observe laws and directives in use in each country.

PVC products: Remove from ground areas. Avoid smoke propagation in the atmosphere. Observe the laws and regulations in use.

**7–HANDLING AND STORAGE**

Silver alloy wire for brazing:

Handling: Material destined to qualified person.  
 Storage: No special measures for storage.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Handling: The packaged form does not require special care for handling or storage. Should observe the following process for handling and operation:  
 • Ventilation requirements: General recommendation: keep the maximum concentration allowed for powder and smoke in the air in accordance with "ACGIH RLVs" or laws and directives more actual in each country. Local work requirements: ventilated areas for abrasives operations or that can make smoke. Obs: ACGIH=American Conference of Governmental Industrial Hygienists. Observe the laws and directives in use in each country.

Storage: Keep in the original package. The material is supplied in non-sterile form.

PVC products:

Handling: Handling for exclusive use of the qualified professional. Keep the product in the original package until use.  
 Storage: Storage against contamination. Use good practices of work.

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**8-EXPOSURE CONTROLS/PERSONAL PROTECTION**

Silver alloy wire for brazing:

Requires: environment with appropriate ventilation; respiratory mask: use filter B; Hand soothing cream; safety glasses; work apron. See the requirements for fluxes for brazing 35.30.020 or similar product. ODP does not take the responsibility for the use of fluxes of brazing from another manufacturer with these silver alloys.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Long and repetitive exposure to smoke generated during heat operations, cut, abrasion or welding should not be problematic if the limits for the OSHA and PEL values are observed. The nickel is listed on "National Toxicology Programs" of the USA, and the "Annual Report on Carcinogens," as in the "International Agency for Research on Cancer (IARC). Monograph point as been potentially carcinogenic. However, recent publish notes of epidemiological studies does not make a parallel with the increase of this disease with the use of worked metallic alloys. The use of individual protection equipment is required for sanding or grinding operation that creates sparks or smoke. In this case use safety glasses, gloves, and an air exhauster. The risk values "S" for nickel are: S22: do not breathe the powder; S36: during the work use protective and security equipment.

PVC products: Use typical dentistry EPLs: security glasses, protection mask, and gloves.

**9-PHYSICAL AND CHEMICAL PROPERTIES**

Silver alloy wire for brazing:

Solid material. Metallic color: yellowish. Fusion temperature: 620oC-655oC. Density: 9.5 g/cm3. Nominal work temperature: 650oC-700oC.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Solid material. Usual metallic color and shine. Can present iron magnetism because of the martensitic properties in the microstructure. Density=7.9 g/cm3. React with some inorganic acid moisture origin smoke that are prejudicial for health.

PVC products: Solid. Insoluble in water. Typical density: 1.4 g/cm3.

**10-STABILITY AND REACTIVITY**

Silver alloy wire for brazing:

Reacts with oxygen and oxidization substances.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Stable material in the supplied condition. PVC Products: Stable in ambient temperature.

**11-TOXICOLOGICAL INFORMATION**

Silver alloy wire for brazing:

Not necessary. See toxicological information for solder paste. According to "OSHA – Occupational Safety & Health Administration" the following shall be observed:

Permissible exposure limits:

Final rule limits

Fluorides: 2.5 mg/m3 pondered average in exposition time (TWA): 3 ppm TWA

Hydrogen Fluoride: 6 ppm Short-Term Exposure Limits (STEL)

Transitional Limits: Fluoride dust (as F): 2.5 mg/m3 (TWA). Hydrogen fluoride: 3 ppm (TWA).

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Powder exposition symptoms, smoke of gases and solder. Short period exposition: metallic flavor, nausea, chest compression, fever, eye irritation, nose, throat, lose conscience/death of the gases beyond the welding or oxygen care. Use Individual or Collective Protection Equipment. Long periods of exposition: no collateral effects when the product is used in its solid form. Based in studies realized until now, it can be sure about the exposition of the operators in the nickel alloy; it can increase the incidence of pulmonary cancer and other diseases.

PVC Products:

The Vinyl Chloride when breathed can cause asthma.

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**12-ECOLOGICAL INFORMATION**

Silver alloy wire for brazing:

Attempt to laws and directives. No forecasting product discharge such as supplied.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

This material (granulated) should be evacuated; avoid the use of air compressors. Observe the laws and directives.

PVC Products:

Aquatic toxicity decrease. Observe the laws and directives in use.

**13-DISPOSAL INFORMATION**

Silver alloy wire for brazing:

See a specialist and attempt to follow laws and directives in use.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

The elimination doesn't applied in known hazards. Observe the laws and directives in each country.

PVC Products:

Discharge observing the laws and directives of good manufacturing work in use to protect the environment.

**14-TRANSPORT INFORMATION**

Silver alloy wire for brazing:

The transport doesn't require special measures, as there is no intrinsic danger.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Keep in the original package. Do not use the product if the package has been breached. Observe the laws and directives in each country.

PVC Products:

Transport in original package only.

**15-REGULATORY INFORMATION**

Silver alloy wire for brazing:

Attempt to follow good work practices. Material intended for use by qualified person.

Stainless steel type 302, 303, 304, 304L, 304V, 305, 316, and 316L:

Attempt to follow good work practices. Material intended for use by qualified person.

PVC Products:

Attempt to follow good work practices. Material intended for use by qualified professionals.

**16-OTHER INFORMATION**

The document's information is based on the knowledge obtained until the present date and it is intended to be a description of the product regarding its safety measures. This description does not ensure the properties or characteristics of the product. Ortho Specialties has rights reserved on performing technical alterations in its technical specifications, with no prior advertising.