

# Material Safety Data Sheet

## Bond-a-Braid

1/04/12  
Verison-4

---

### Section 1. MATERIAL IDENTIFICATION

**Supplier:** Reliance Orthodontic Products, Inc.  
1540 West Thorndale Ave · Itasca, IL 60143, U.S.A.  
Emergency Telephone Phone: 630-773-4009 · Fax: 630-250-7704

**Authorized Representative:** Emergo Europe, Molenstraatt, 15, 2513 BH The Hague,  
The Netherlands  
Phone: +31-70-345-8570 · Fax: +31-70-346-7299

**CE Administrator:** Amtac Certification Services Ltd., Davey Avenue, Knowlhill,  
Milton Keynes, MK5 8NL, United Kingdom

Product Grade/Name:

**Bond-a-Braid**

**304 STAINLESS STEEL**, Metal for archwires including stranded and looped wires

---

### Section 2. HAZARDOUS INGREDIENTS

<u>MATERIAL</u>	<u>CAS Number</u>	<u>% (RANGE)</u>	<u>ACGIH-TLV</u>	<u>OSHA-PEL</u>
IRON*	13097-37-1	69.5	5.0 MG/M3	10.0 MG/M3
CHROMIUM	7440-47-3	18.5	0.5mg/m <sup>3</sup> (Dust)	1.0 mg/m <sup>3</sup> (Dust)
NICKEL	7440-02-0	9.0 Suspected carcinogen- NTP & IARC Listed See Sections 5 & 7	1mg/m <sup>3</sup> (Dust)	1mg/m <sup>3</sup> (Dust)
MANGANESE(E)	7439-96-5	1.0	5mg/m <sup>3</sup> Max. (Dust)	5mg/m <sup>3</sup> Max. (Dust)
COBALT	<del>7440-31-7</del>	<del>0.75</del>	<del>5mg/m<sup>3</sup> (Dust)</del>	<del>10mg/m<sup>3</sup> (Dust)</del>
SILICON		< 1 EACH	10mg/m <sup>3</sup> (Dust)	15mg/m <sup>3</sup> (Dust)
CARBON				
PHOSPHORUS				
SULFUR				

\* THESE SUBSTANCES ARE  
REGULATED IN THEIR OXIDE  
FORM

---

### Section 3. HAZARD IDENTIFICATION

Specialty steel alloys are generally not considered hazardous in the form shipped (solid bars, billets wire...) however, if your process involves grinding, melting, welding, cutting or any other process that causes a release of dust or fume, hazardous levels of dust or fume of the constituents of these alloys could be generated. The following is a list of potential health effects for all hazardous elements that are possibly contained in our alloys. Please refer to section II titled "hazardous ingredients" for a list of those specific elements contained in this particular alloy.

### Health Effects

Iron oxide: Has caused irritation of the eyes, nose and skin of excremental animals. It may have the same effect on humans.

Chromium: Ferrochrome alloys have been associated with lung changes in workers exposed to these alloys.

Cobalt: Fume or dust causes irritation of the nose and throat and may cause an allergic skin rash. Also has been reported to cause respiratory disease with symptoms ranging from cough and shortness of breath to permanent disability and death. The symptoms frequently go away when exposure has stopped, but sometimes the symptoms progress after exposure has ceased.

Manganese: Inhalation of manganese fume may cause "metal fume fever" with symptoms of chills, fever, nausea, cough, dry throat, weakness, muscle aches and a sweet or metallic taste in the mouth. Prolonged or repeated exposure may affect the nervous system with difficulty in walking and balancing, weakness or cramps in the legs. Hoarseness of the voice, trouble with memory or judgment, unstable emotions or unusual irritability. The respiratory system may also be affected by a pneumonia like illness with symptoms of coughing, fever, chills, body ache, chest pain and other common signs of pneumonia

Nickel: Fumes are respiratory irritants and may cause respiratory disease, skin contact can also cause an allergic skin rash. Nickel and its compounds have been reported to cause cancer of the lungs and sinuses.

---

#### **Section 4. FIRST AID MEASURES**

<b>PRIMARY ROUTES OF ENTRY:</b>	<b>EMERGENCY FIRST AID:</b>
Inhalation	Remove to fresh air, if condition continues, consult physician.
Eye Contact	Flush well with running water to remove Particulates and get medical attention.
Skin Contact	Wash area well with mild detergent and water.
Ingestion	While ingestion of large enough quantities to cause health effects is unlikely, consult a physician if it occurs.

---

#### **Section 5. FIRE FIGHTING MEASURES**

**Suitable Extinguishing Media:** N/A

Unsuitable extinguishing Media: N/A

Particular hazards: See Step 3

Protective Equipment for Fire Fighters: N/A

#### **Section 6. ACCIDENTAL RELEASE MEASURES**

Personal Precautions:

##### Ventilation:

If your process causes a release of dust or fumes, use local and general exhaust ventilation to keep airborne concentrations of dust or fumes below TLV.

Respiratory Protection:

If your process causes a release of dust or fume in excess of the permissible exposure limit, use approved respirators for protection against airborne dust or fumes should be worn. Respirators should be used in accordance with 29CFR1910.134.

Protective Equipment:

Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis. If your process involves grinding or any other action that causes the release of dust or fumes, approved safety glasses or goggles should be worn.

Environmental Precautions: No hazard

Cleaning Methods: N/A

**Section 7:                                      HANDLING AND STORAGE**

Handling: See step 6

Storage: N/A

Storage Conditions: N/A

**Section 8.                                      EXPOSURE CONTROL/PERSONAL PROTECTION**

Minimize contact as outlined in step 6

**Section 9                                      PHYSICAL AND CHEMICAL PROPERTIES**

Form: Wire

Color: Solid

Odor: Odorless

Change of State: liquid

Melting Point: 2400F to 2800F

Boiling Point: HIGH

Auto-Ignition Temperature: N/A

Flash Point: N/A

Specific Gravity: (H, O=1) Approx. 8

Vapor Pressure 20 Degrees C: (mm Hg): NIL

Density (20 Degrees C): 7.5 – 8.5 specific gravity

pH Value (at 10g/H<sub>2</sub>O): N/A

Solubility in Water: Insoluble

Solubility in Organic Solvent: Insoluble

Viscosity (20Degrees C): solid

---

**Section 10. STABILITY AND REACTIVITY**

Thermal Decomposition: None

Conditions to Avoid: None

Materials to Avoid: None

Hazardous Decomposition Products: Fumes and/or gases produced from welding

---

**Section 11. TOXICOLOGY INFORMATION**

Oral Toxicity: Reference Section 3 and 6

Inhalation: Reference Section 3 and 6

Skin Irritation: Reference Section 3 and 6

Sensitization: Reference Section 3 and 6

Eye Irritation: Reference Section 3 and 6

Further Details: None

---

**Section 12. ECOLOGICAL INFORMATION**

Acute Toxicity in Fish (LC-50/48h): Not defined

Bacteria Toxicity (EC-0): Not Defined

Biodegradability: Not Defined

Further Details: None

---

**Section 13. DISPOSAL CONSIDERATIONS**

Product: N/A

Packaging: N/A

Waste Disposal Code: N/A

---

**Section 14. TRANSPORT INFORMATION**

Overland Transport ADR/RID/GGVS/GGVE: N/A

Sea Transport: GGVSEA/IMDG-Code: N/A

Air Transport ICAO/IATA-DGR: N/A

Inland Waterway Transport ADNR: N/A

Further Details: Product is not considered dangerous for transport

**Section 15. REGULATORY INFORMATION**

Preparation as defined by the (German) Chemicals Act (dated 4/03/1990)

Labeling: N/A

Product Contains:

Danger Symbol:

R-Sentences R36/37/38:

S-Sentences S26:

S-Sentences S28:

National Regulation:

VbF:

TA-Air:

Water Pollution1:

**Section 16 OTHER INFORMATION**

NOTE: While the information and recommendations set forth on this data sheet are believed to be accurate as received from our suppliers, Reliance Orthodontic Products makes no warranty with respect thereto and disclaims all liability from reliance thereon.