



MATERIAL SAFETY DATA SHEET
ORTHODONTIC BUTTONS / HOOKS / STOPS

Document Number: MSDS-003	Revision Date: Jan 1,2015	Material Type: Austenitic 304, 316L
Revision: 0	Number of Pages: 2	Stainless Steel

I. Composition / Information on Ingredients (Principal Ingredients)

Material	CAS Number	% (Range)	ACGIH-TLV	OSHA-PEL
IRON	7439-89-6	65-75	None	None
CHROMIUM	7440-47-3	16-20	0.5mg/m ³ (Dust)	1mg/m ³ (Dust)
NICKEL	7440-02-0	8-13	1mg/m ³ (Dust)	1mg/m ³ (Dust)
MOLYBDENUM	7439-98-7	2.0-2.5	10mg/m ³ (Dust)	15mg/m ³ (Dust)

II. Hazards Identification

Steel products in their usual solid physical state do not constitute any physical or health hazard. However, subsequent operations such as brazing, burning, cutting, grinding, heat treating, pickling, welding, or processing in any other fashion may produce potentially hazardous dust or fumes which can be inhaled, swallowed, or come in contact with the skin, eyes, or mucous membranes.

Primary Routes of Entry	Emergency First Aid
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	Brush off excess dust. Wash area well with soap and water.
Ingestion	Seek medical help if large quantities of material have been ingested.

Possible symptoms of exposure to dust, fumes, or gases:

Acute: Irritation of eyes, nose, throat, and skin; metallic taste in mouth; nausea; metal fume fever.

Chronic: Only after six to ten years of exposure to iron dust or fumes does one present any signs of pneumoconiosis. Physical examinations of those exposed to iron dust have not indicated any disability. Excess inhalation of Chromium fumes has been associated with respiratory cancer. Excessive and prolonged inhalation to manganese (generally over 2 years exposure) can cause damage to the central nervous

system. Specifically, the pathology resembles Parkinson's Disease.

Carcinogenicity: Chromium, Cobalt-Chromium Alloys, and Nickel have been identified by the International Agency for Research on Cancer (IARC) and the National Program (NTP) is potential cancer causing agents.

III. Accidental Release Measures

Spill or Leak Procedures: Remove by mechanical means.

IV. Handling and Storage

Use good housekeeping procedures to prevent accumulation of dusts, thus minimizing airborne concentrations.

V. Exposure Controls / Personal Protection.

Ventilation Requirements:

Local exhaust recommended while burning, grinding, and/or welding and airborne levels of metal oxides exceed applicable OSHA standards.

Personal Protective Equipment:

Respiratory Protection:

If fumes, misting or dust conditions occur and exceed applicable OSHA standards, provide NIOSH approved air-supplied respirators.

Eye Protection:

Recommend approved safety glasses/goggles when grinding, welding, etc.

Hand Protection:

Gloves: As required.

Other Clothing

As required.

VI. Stability and Reactivity

Stability:

Unstable () Stable (X)

Conditions to Avoid: N/A



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Incompatibility:

Material to Avoid: React with strong acids to form hydrogen gas.

Hazardous Decomposition Products:

Metal fumes and certain noxious gases, such as CO, may be produced during welding or burning operations.

Hazardous Polymerization:

May Occur () Will Not Occur (X)

Conditions to Avoid: N/A

Material	ACGIH-TLV	OSHA-PEL
CARBON MONOXIDE	50ppm	50ppm
CHROMIUM (D)	0.05mg/m ³ Suspected carcinogen-NTP & IARC Listed.	0.1mg/m ³
IRON (B)	5mg/m ³	10mg/m ³
MOLYBDENUM	5mg/m ³	5mg/m ³
NICKEL	0.1mg/m ³ Suspected carcinogen-NTP & IARC Listed	1mg/m ³
NITROGEN DIOXIDES	3ppm	5ppm Maximum
OZONE	0.1ppm	0.1ppm

VII. Toxicological Information

No toxic effect would be expected from exposure to the solid form of Steel products. Prolonged, repeated exposure to fumes or dust generated during subsequent operations may or may not cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits established in 29 CFR Part 2920.1200. This material contains nickel, which for some individuals could result in development of nickel sensitization. This material should not be used for individuals with already known nickel sensitivity and should be discontinued for individuals whom develop nickel sensitization after prolonged contact.

VIII. Disposal Considerations

Solids: Sell as scrap for refuse

Dust: Follow federal, state and local regulations regarding disposal.

Grinding, Cutting and Welding Residue: Follow federal, state and local regulations regarding disposal.

IX. Regulatory Information

These products are manufactured using Good Manufacturing Practices and are regulated Class I medical devices by the U.S. Food and Drug Administration, Class IIa by the EU MDD.

X. Other Information

While the information and recommendations set forth on this data sheet are believed to be accurate as received from our suppliers, MO, makes no representation or warranties regarding the accuracy or completeness of the information and assumes no liability for any loss, damage, cost, or expense that may arise out of the use of, or reliance on the information by any person. Users should make their own investigations to determine the suitability of the information for their particular purposes.