

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION



Great Lakes Orthodontics
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CHEMTREC: 800-424-9300

Product Name: Stainless Steel Alloy
Product Number: 090-031

Effective Date: 12/19/12

SECTION 2. HAZARDOUS IDENTIFICATION

- No toxic effects would be expected from its inert solid form. Prolonged exposure to dusts, fumes, and gases generated during mechanical cutting, grinding, or welding may cause adverse health effects such as respiratory irritation, irritability, coughing, headaches, nausea, dizziness, or fever. These effects are associated with the following chemical components.
- Coatings: certain materials such as lime, alkaline salts, or oils, and certain residuals (<1% Total weight of product) may remain on the product surface.

Potential Health Effects:

Primary Routes of Entry

- Inhalation
- Skin Contact
- Eye Contact

Human Effects and Symptoms of Overexposure:

Skin

Dermatitis due to sensitization may occur in some individuals from exposure to nickel and chromium fumes.

Ingestions

May cause irritation of the mouth and throat. Some constituents pose more potential hazards than others, depending upon their inherent toxicity and concentration of special concern and Chromium, Nickel, and perhaps Manganese. Aggravation of preexisting respiratory or allergic conditions may occur in some workers.

Eyes

May cause irritation, conjunctivitis, and /or corneal damage.

Inhalation

- IRON – Siderosis, no Fibrosis.
- CHROMIUM – The dusts of Chromium metal are usually reported to be relatively non-toxic, although there are reports of a modular type of pulmonary disease with impairment of lung function. Some insoluble chromium compounds are suspect carcinogens.
- NICKEL – Respiratory irritation and pneumonitis: several nickel compounds, including nickel oxide, are suspected lung and nasal.
- MANGANESE – Pneumonitis, CNS involvement including irritability, difficulty in walking, speech disorders, compulsive behavior, mask-like face and a Parkinson-like syndrome.
- ALUMINUM – No known health effects. Generally considered to be in the nuisance dust category.
- SILICON – May product x-ray changes in the lungs without disability.
- TUNGSTEN – Some evidence of pulmonary involvement, such as cough.
- MOLYBDENUM – Irritation of the nose and throat, weight loss, and digestive disturbances in animals. No industrial poisoning has been reported.
- COPPER – “Metal Fume Fever”: symptoms may include cough, headache, metallic taste in mouth, nausea, fever, chilling, pain in muscles and joints. This condition is transitory, usually lasting one day or less.
- COBALT – Asthma: may cause interstitial pneumonitis and sensitization of the respiratory system.

Chronic Effects or Exposure

None.

Carcinogenicity

None.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

| <u>Hazardous Components</u> | <u>CAS #</u> | <u>Wt. %</u> | <u>OSHA PEL</u> | <u>ACGIH TLY</u> | <u>NTP/IARC</u> |
|------------------------------------|---------------------|---------------------|------------------------|-------------------------|------------------------|
| Iron | 7439-89-6 | 48-89 | None | None | No / No |
| *Chromium | 7440-47-1 | 10-27 | 1 | .5 as CRII or CRIII | No / No |
| *Nickel | 7440-02-0 | 0-35 | 1 | 1 | Yes / Yes grp1 |
| *Manganese | 7439-96-5 | 0-15 | C5(6) | C5 | No / No |
| Tungsten | 7440-33-7 | 0-4 | None | 5 | No / No |
| Molybdenum | 7439-98-7 | 0-4 | 15 | 10 | No / No |
| *Aluminum | 7429-90-5 | 0-2 | 15 | 15 | No / No |
| *Copper | 7440-50-8 | 0-4 | 1 | 1 | No / No |
| Silicon | 7440-21-3 | 0-5 | 15 | 10 | No / No |
| *Cobalt | 7440-48-7 | 0-5 | 0 | .05 | No / No |

* Denotes toxic chemicals contained in this product which are subject to the reporting requirements of Section 313 of Title III of the superfund amendments and Reauthorization Act. SARA of 1986 and 40 CFR Part 372.

SECTION 4. FIRST AID MEASURES

Eye Contact

In case of contact, immediately wash eyes with large amounts of water for fifteen minutes, occasionally lifting eyelids.

Skin Contact

If irritation develops, remove contaminated clothing immediately and wash contaminated skin with soap or mild detergent and water for five minutes. If irritation persists, seek medical attention.

Inhalation

Seek medical attention, if necessary.

Ingestion

Seek medical attention, if necessary.

SECTION 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Not applicable

Special Fire Fighting Procedures

Not applicable

Unusual Fire / Explosion Hazards

Nonflammable, however welding arcs and sparks can ignite flammable liquids, vapors, and combustible solids.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures

Collect residue from cutting, grinding, or welding operations into a suitable container. Dispose of in accordance with EPA or local regulations.

SECTION 7. HANDLING & STORAGE

Handling / Storage Precautions

None.

Further Info on Storage Conditions

None.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation Measures

Use local exhaust when cutting, grinding, or welding. It is important to maintain exposures below the limits in Section #3 and #5. Confined spaces require special attention to provisions of adequate ventilation.

Respiratory Protection

Respiratory protection is necessary when permissible exposure limits may be exceeded during cutting, grinding, or welding. Use air-supplied respirator in confined spaces. Use only NIOSH approved respirator in accordance with 29 CFR 1910.134

Eye Protection

Required when cutting, grinding, or welding. Wear gloves and face protection. Select welding lens shade from a WS Publication F2.2.

Additional Protective Measures

Flame retardant clothing is required when cutting, grinding, or welding. Do not expose skin.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

- Stainless Steel products as shipped are metal alloys in solid solution and are non-hazardous, non-flammable, and non-reactive.

SECTION 10. STABILITY & REACTIVITY

Hazardous Reactions – Hazardous polymerization will not occur.

Stability – Stable

Materials to Avoid – None known

Conditions to Avoid – None known

Hazardous Decomposition Products – Welding fumes and gases from welding cannot be classified simply. The composition and quantity of both depend on the metal being processed, procedures, and electrodes used. The constituents of the fume are generally different from the ingredients listed in Section 3 and may include oxides of the metals, chromates, fluorides, and complex metallic. The gases may include Carbon Dioxide, Oxides of Nitrogen, and Ozone. The exposure limits in Section 3 apply to those fumes and gases which may be found in the welding environment.

SECTION 11. TOXICOLOGICAL INFORMATION

Not applicable

SECTION 12. ECOLOGICAL INFORMATION (non-mandatory)

Not applicable

SECTION 13. DISPOSAL CONSIDERATIONS (non-mandatory)

Waste Disposal Method

Not applicable

SECTION 14. TRANSPORT INFORMATION (non-mandatory)

Not applicable

SECTION 15. REGULATORY INFORMATION (non-mandatory)

- As defined by OSHA 29 CFR 1910.1200 or certain state regulations
- Permissible Exposure Limit – (mg/m³) – OSHA 29 CFR 1910.
- Threshold Limit Value – (mg/m³) – American Conference of Governmental Industrial Hygienists.
- National Toxicology Program – Annual Report on Carcinogens.
- International Agency for Research on cancer.
- Values are maximum (ceiling) limits.

SARA Title III – Section 313 supplier notification.

- It is important to maintain exposures below the PEL/TLV. Use industrial hygiene air monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLV. Always use exhaust ventilation. Refer to the following sources for important additional information:
 - ANSI Z49.1
The American Welding Society
PO Box 35140
Miami, FL 33135
 - OSHA (29 CFR 1910
US Department of Labor
Washington, DC 20210

SECTION 16. OTHER INFORMATION (non-mandatory)

Not applicable