MET126

HILLSBORO ELEMENTARY SCHOOLS
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HILLSBORO, OR 97123

MATERIAL SAFETY DATA SHEET OT 0078

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SECTION I. MATERIAL IDENTIFICATION'

Common/Trade Name: Stainless Steels
Chemical Name: AISI/SAE Grades 300 Series, 400 Series, Special Alloys
Chemical Family: Not given

SECTION II. HAZARDOUS INGREDIENTS

Ingredients:	%	TLV Units
		Mg/m^3
Base Metal		
Iron	38.0-86.5	5 Oxide Fume
Alloying Elements		
Aluminum	less than .01-0.5	10 Dust/5 Fume
Carbon	less than .03-2.0	Not established
Chromium	less than 10-27	0.5 Chrome Metal
Cobalt	less than .01-.75	0.05 Cobalt Fume
Copper	less than .18- 4.5	0.2 Fume/1.0 Dust
Manganese	less than 2-10	5c Dust/1 Fume
Molybdenum	less than .04-5	10 Insoluble Compounds
Nickel	less than .12-34	1 Nickel Metal
Phosphorous	less than .01-.06	0.1 Phosphorous
Selenium	less than .01-0.3	0.2 Se Metal
Silicon	less than .15-2.0	10 Total Dust
Sulfur	less than .01-.06	5 Sulfur Dioxide
Titanium	less than .01-0.70	15 Ti Dioxide
Columbium	less than .01-1.10	Not established
Tantalum	less than .01-1.10	5.0 Ta Metal

SECTION III. PHYSICAL DATA

Boiling Point (°F): N/A
Vapor Pressure (mm Hg): N/A
Vapor Density (Air=1): N/A
Solubility in Water: N/A

Specific Gravity (Water=1): Approx.8
Percent Volatile (By volume): N/A
Evaporation Rate (Bu.Ac. = 1): Not given

Appearance and Odor: Solid, silvery gray odorless metal

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

Flammable Limits: N/A

Extinquishing Media: Molten metal may explode on contact with water; for these fires use dry powder or sand extinquishing media.

Special Fire Fighting Procedures: Stainless steel bars and tubular products do not present fire or explosion hazards under normal conditions. Use fire fighting methods and materials that are appropriate for surrounding fire.

Unusual Fire and Explosion Hazards: Fine metal particles, such as produced in grinding and sawing, can burn. High concentration of metallic fines in the air may present an explosion hazard.

SECTION V. HEALTH HAZARD DATA

Threshold Limit Value: Not given

Effects of Overexposure: Stainless-steel products in their solid state present no inhalation, ingestion, or contact health hazard. Operations such as burning,welding, sawing, brazing, grinding, and machining, which result in elevating the temperature of the product to, or above its melting point, or result in the generation of airborne particulates may present hazards. The major exposure hazard is inhalation. Effects of overexposure to fume and dust are as follows:

ACUTE: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose and throat. High concentrations of fumes and dusts of iron-oxide, manganese, copper and zinc may result in metal fume fever. Typical symptoms last from 12 to 48 hours and consist of a metallic taste in the mouth, dryness and irritation of the throat, chills, and fever.

CHRONIC: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element:

Aluminum: Irritation of eyes, nose and throat
Chromium: Lesions of the skin and mucous membranes, possible cancer of nose or lungs-bronchogenic carcinoma
Cobalt: Respiratory tract irritation, skin rash
Copper: Irritation of eyes, nose and throat, metal fume fever
Iron: Pulmonary effects, siderosis
Manganese: Bronchitis, pneumonitis, lack of coordination
Molybdenum: Respiratory tract irritation, possible liver/kidney damage, bone deformity
Nickel: Lesions of the skin and mucous membranes, possibly cancer of nose or lungs-bronchogenic carcinoma
Phosphorous: Necrosis of the mandible
Selenium: Nasal and bronchial irritation, gastro-intestinal disturbances, garlic breath odor
Sulfur: (as sulfur dioxide) Edema of the lungs
Titanium: No chronic debilitating symptoms indicated
Columbium/Tantalum: No chronic debilitating symptoms indicated

Eyes: See above
Skin: See above
Breathing: See above
Swallowing: See above

Emergency and First Aid Procedures:

Eyes: Flush thoroughly with running water to remove particulate; obtain medical attention.

Skin: Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.

Breathing: Remove to fresh air; if condition continues, consult a physician.

Swallowing: If significant amounts of metal are ingested, consult a physician.

SECTION VI. REACTIVITY DATA

Stability: Stable

Conditions To Avoid: Stainless steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborn fume and dust.

Incompatible With: Reacts with strong acids to form hydrogen gas.

Hazardous Decomposition Products: Not given

Hazardous Polymerization: Not given

Conditions To Avoid: Not given

SECTION VII. SPILL OR LEAK PROCEDURES

Procedures In Case of Spill or Leak: Fine tunings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for reuse.

Waste Disposal: Used or unused product should be disposed of in accordance with federal, state, or local laws and regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Type of Respiratory Protection: Appropriate dust, mist, fume respirator should be used to avoid excessive inhalation of particulates. If exposure limits are reached or exceeded, use NIOSH approved equipment.

Ventilation: Provide adaquate local and general exhaust ventilation.

Protective Gloves: Should be worn as required for welding, burning, or handling operations.

Eye Protection: Safety glasses should be worn when welding or burning.

Other Protective Equipment: As required, depending on operations and safety codes.

SECTION IX. SPECIAL PRECAUTIONS

Handling/Storage Precautions: Maintain good housekeeping

Other Precautions: Minimize and control operations producing airborn dust and fume.