

MATERIAL SAFETY DATA SHEET
for a
North American Stainless
PRODUCT

North American Stainless
6870 US 42 East
Ghent KY 41045
(502) 347-6000

Product Name: Stainless Steel Products, All Grades
Technical Contact: Environmental, Safety & Health
Emergency Number : (502) 347-6650
(502) 347-6111 after 5:00 p.m.
Date of Revision: February 3, 2006

Section 1 - Component Data:

<u>INGREDIENTS</u>	<u>CAS NO:</u>	<u>PERCENT:</u>
Iron	7439-89-6	45-90
Nickel	7440-02-2	0-40
Chromium	7440-47-3	10.5-30
Manganese	7439-96-5	0-15
Molybdenum	7429-98-7	0-5
Copper	7440-50-8	0-5
Silicon	7440-21-3	0-3
Aluminum	7429-90-5	0-1
Cobalt	7440-48-4	0-1

Section 2 - Physical Data:

Boiling Point (°F): Not Applicable (N/A)
Vapor Pressure (mmHg @ 20°C): N/A
Vapor Density (AIR=1): N/A
Solubility in Water: Insoluble in Water
Specific Gravity (H₂O=1): 7.65 to 7.94
Percent Volatile by Volume: N/A
Evaporative rate (Ethyl Ether = 1): N/A
pH Information: N/A
Appearance and Odor: Silvery Metallic; No odor

Section 3 - Fire and Explosion Hazard Data:

Flash Point (°F):	N/A
Method Used:	N/A
Flammability Limits (%/Vol):	
LEL:	N/A
UEL:	N/A
Auto-Ignition Temperature (°F):	N/A
Extinguishing Media:	No fire or explosion hazards
Special Fire - Fighting Instructions:	N/A
Unusual Fire and Explosion Hazards:	N/A

Lump material is not combustible. Some metal dust or powders may be flammable. Use dry chemical to extinguish.

Section 4 - Reactivity Data:

Stability (Conditions to avoid):	Stable
Incompatibility (Material to avoid):	None

HAZARDOUS DECOMPOSITION PRODUCTS: During certain operations such as welding, burning, melting or hot rolling, metal fumes may be generated. Hexavalent chromium which is a suspect carcinogen may result from pickling of stainless.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 5 - Health Hazard Data:

Primary Routes of Entry: Inhalation, skin contact.

Effects of overexposure: Stainless, as a solid, is not toxic and presents no health hazard. Overexposure to dusts or fumes which may result during heating, grinding, cutting, brazing or welding can pose significant health hazards as described below.

Iron: Siderosis, no fibrosis

Nickel: Nickel compounds are suspect carcinogens by inhalation. The most common effect resulting from exposure to nickel compounds is "nickel itch", a form of dermatitis. LD₅₀ = 50 mg/kg mouse - intravenous.

Chromium: Suspect carcinogen and tumorigen. Dermatitis may result from exposure to chromium fumes.

Manganese: Can affect central nervous system, including disturbances in gait and speech. Pulmonary system damage may result from inhalation of fume and dust. LD₅₀ = 9 gm/kg rat - oral.

Molybdenum: Irritation of nose and throat, weight loss and digestive disturbances in animals. No industrial poisonings have been reported.

Copper: May be responsible for one form of metal fume fever. Metal fume fever's symptoms include cough, headache, fever, nausea, chilling, pain in muscles and joints, and metal taste in mouth. This condition is usually transitory lasting one day or less.

Silicon: May produce X-ray changes in lungs without disability.

Aluminum: No known health effects. Generally considered to be a nuisance dust.

Cobalt: An experimental carcinogen.

Particulates: AS WITH ANY DUST, EYE IRRITATION MAY OCCUR.

Medical conditions known to be aggravated by exposure to this material: Persons with lung disorders or diseases or skin disorders may be at added risk as a result of overexposure to this material.

EPA SARA TITLE III INFORMATION

PHYSICAL FORM:	SARA POTENTIAL HAZARD CATEGORIES
<u> </u> Pure	<u> X</u> Immediate Acute Health Hazard
<u> X</u> Mixture	<u> X</u> Delayed Chronic Health Hazard
<u> X</u> Solid	<u> </u> Fire Hazard
<u> </u> Liquid	<u> </u> Sudden Release of Pressure Hazard
<u> </u> Gas	<u> </u> Reactivity Hazard

CONTAINS SECTION 313 CHEMICALS: No X Yes

<u>NAME OF 313 CHEMICAL</u>	<u>CAS NO.</u>	<u>PERCENT BY WEIGHT</u>
Chromium	7440-47-3	10.5-30
Manganese	7439-96-5	0-15
Copper	7440-50-8	0-5
Nickel	7440-02-0	0-40
Aluminum	7429-90-5	0-1
Cobalt	7440-48-4	0-1

Exposure Limits:

<u>Chemical Components</u>	<u>OSHA PEL (mg/m³)</u>	<u>ACGIH-TLV (mg/m³)</u>	<u>NTP Listed</u>	<u>IARC Listed</u>
---------------------------------------	---	--	------------------------------	-------------------------------

Iron	10 (TWA as Fe ₂ O ₃ fume)	5 (TWA as Fe ₂ O ₃ fume)	No	No
Nickel	1.0 (TWA)	1.0 (TWA)	No	Yes
Chromium	1.0 (TWA)	0.5 (TWA)	Yes	Yes
Manganese	1 (TWA as fume) 3 (STEL as fume)	1.0 (as fume) 3.0 (STEL as fume)	No	No
Molybdenum	5 (TWA as soluble compounds)	5 (TWA as soluble compounds)	No	No
Copper	0.1 (TWA as fume)	0.2 (TWA as fume)	No	No
Silicon	10 (TWA)	10 (TWA)	No	No
Aluminum	5 (TWA as welding fume)	5 (TWA as welding fume)	No	No
Cobalt	0.05 (TWA)	0.05 (TWA)	No	No

Section 6 - First Aid & Emergency Procedures

- INHALATION:** Remove from dusty area to fresh air: if discomfort persists, consult physician.
- SKIN CONTACT:** If irritation develops, wash skin thoroughly with soap and water. Seek medical attention, if necessary.
- EYE CONTACT:** Wash eyes with copious amounts of water for 15 minutes to ensure that no particles remain in the eye. Seek medical advice if irritation persists.

Section 7 - Special Handling Information

VENTILATION: Ventilation shall be provided in area where exposures are above the permissible exposure limits or threshold limit values specified by OSHA or other local, state, and federal regulations.

RESPIRATORY

PROTECTION: A properly fitted, NIOSH-approved, dust-fume respirator should be worn during operations that produce dust or fumes that exceed the threshold limit value (TLV) or other recommended limits, in accordance with the OSHA Respiratory Protection Standard (29 CFR 1910.134).

PROTECTIVE CLOTHING: Use appropriate protective clothing as required.

EYE PROTECTION: Use appropriate eye protection for the job being performed.

Section 8 - Spill, Leak or Disposal Information

SPILLS: Fine material should be swept or vacuumed to avoid creating airborne dust. Avoid compressed air on spills or leaks of fine material.

WASTE DISPOSAL: Dispose in accordance with all applicable federal, state and local regulations.

Section 9 - Additional Information

DOT INFORMATION:

Hazardous Material Proper Shipping Name: N/A

Hazard Class: N/A

Identification Number: N/A

EPA HAZARDOUS WASTE NUMBER: N/A

The information and recommendations contained herein are believed to be accurate as of the date issued and in certain instances are based upon information provided by others. However, North American Stainless makes no warranty or guarantee expressed or implied of any data herein and shall not be liable for any loss arising out of the use thereof. For further information in any specific situation, please contact either the appropriate North American Stainless Technical Representative or a responsible public health care official.