

# MATERIAL SAFETY DATA SHEET

# STEEL MILL SCALE

## SECTION I - MATERIAL IDENTIFICATION

<b>Manufacturer's Name</b> Gerdau AmeriSteel	<b>Emergency Telephone Number</b> 813/286-8383
<b>Contact</b> Matt D. Moore Director, Safety & Health	<b>Telephone Number for Information</b> 813/286-8383
<b>Address</b> P. O. Box 31328 Tampa, FL 33631-3328	<b>Date Prepared</b> 02/16/93
<b>Product</b> Steel Mill Scale	<b>Family</b> Inorganic Compounds

## SECTION II - HAZARDOUS CONSTITUENTS

Scale may contain the following:

<u>Constituent</u>	<u>OSHA PEL (mg/m<sup>3</sup>)</u>	<u>ACGIH TLV (mg/m<sup>3</sup>)</u>	<u>% (Range)</u>	<u>CAS #</u>
Iron <sup>a</sup>	10 <sup>b</sup>	5	50-99	1309-37-1 <sup>a</sup>
Calcium	-	-	0-50	-
Aluminum	15 <sup>b</sup> , 5 <sup>c</sup>	10	0-10	7429-90-5
Manganese <sup>d</sup>	1	1	0-5	7439-96-5 <sup>d</sup>
Arsenic	0.5 <sup>e</sup>	0.2	0-1	7440-38-2
Cadmium <sup>f</sup>	0.1	0.05 <sup>g</sup>	0-1	1306-19-0 <sup>f</sup>
Chromium	1	0.5	0-1	7440-47-3
Copper <sup>h</sup>	0.1	0.2	0-1	7440-50-8 <sup>h</sup>
Lead <sup>i</sup>	0.05	0.15	0-1	7439-92-1 <sup>f</sup>
Nickel	1	1	0-1	7440-02-0
Potassium	-	-	0-1	7440-09-7
Sulfur	-	-	0-1	7704-34-9
Titanium	10 <sup>b,j</sup> , 5 <sup>c,i</sup>	10	0-1	13463-67-7 <sup>j</sup>
Tungsten <sup>k</sup>	1	1	0-1	-
Zinc	5 <sup>l</sup>	5 <sup>l</sup>	0-1	1314-13-2 <sup>h</sup>

- Notes:
- |                         |                                      |
|-------------------------|--------------------------------------|
| (a) Fume, as Fe         | (g) Ceiling                          |
| (b) Total Dust          | (h) Fume                             |
| (c) Respirable Fraction | (i) Inorganic Dusts and Fumes, as Pb |
| (d) Fume, as Mn         | (j) Titanium Dioxide                 |
| (e) Inorganic Compounds | (k) Soluble Compounds                |
| (f) Fume, as Cd         | (l) Zinc Oxide Fume                  |

Many substances do not have a unique exposure limit. The absence of it does not lessen consideration for exposure risk. In the absence of specific information professional judgment may be required.

## SECTION III - PHYSICAL AND CHEMICAL CHARACTERISTICS

<b>Boiling Point</b> - ±5000 °F	<b>Melting Point</b> - ±2500 °F
<b>Vapor Pressure (mm Hg)</b> - N/A	<b>Specific Gravity (H<sub>2</sub>O = 1)</b> - 7.8-8.2
<b>Vapor Density (Air - 1)</b> - N/A	<b>Evaporation Rate (Butyl Acetate = 1)</b> - N/A
<b>Solubility in Water</b> - Insoluble	
<b>Appearance and Odor</b> - Black metal, odorless, mainly consists of small particles or chips	

#### SECTION IV - PHYSICAL AND CHEMICAL HAZARDS

**Flash Point** - Not Flammable

**LEL** - N/A

**Extinguishing Media** - N/A

**UEL** - N/A

**Special Fire Fighting Procedures** - N/A

**Unusual Fire and Explosion Hazards** - N/A

#### SECTION V - REACTIVITY DATA

**Stability** - Stable

**Conditions to avoid** - N/A

**Incompatibility** - Reacts with strong acids to liberate explosive hydrogen gas

**Hazardous decomposition or byproducts** - Metallic oxides or metal fumes may be produced during melting operations

#### SECTION VI - HEALTH HAZARD DATA

**Routes of Entry**

**Inhalation?**

yes

**Skin?**

no

**Ingestion?**

yes

#### Health Hazards

**Acute** - Inhalation of fumes may result in chills and fever for 12 o 48 hours. Metal fume fever -- metallic taste, throat irritation, and flu-like symptoms.

**Chronic** - Chromium, manganese and nickel fumes may cause lung disease, lead fumes can damage kidneys and affect muscle strength.

**Carcinogenic** - NTP: Arsenic, nickel, chromium, cadmium  
IARC: Arsenic, nickel, chromium, cadmium, lead  
OSHA: Arsenic

**Signs and Symptoms of Exposure** - Nausea, tightness of chest, fever, irritation of eyes, nose, throat, and skin

**Medical Conditions Generally Aggravated by Exposure** - Chronic lung disease, allergic conditions.

**Emergency and First Aid Procedures** - Dust, welding fumes -- remove to fresh air.  
Eye/skin contact -- flush with water.

#### SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

**Steps to be Taken in Case of Release or Spill** - Chips and dust should be swept up and placed in suitable container. Prevent release to sinks, drains, sewers, or water runoff.

**Waste Disposal Method** - Material not known to be a RCRA hazardous waste, follow local requirements.

**Precautions to be Taken in Handling and Storing** - Use good housekeeping to minimize particle accumulation.

**Other Precautions** - Ventilate welding, brazing, and grinding operations.

#### SECTION VIII - CONTROL MEASURES

**Respiratory Protection** - Dust/fume respirator

**Local Exhaust** - Required for welding, grinding operations

**Protective Gloves** - As needed based on operations

**Eye Protection** - As needed

**Other Protective Clothing or Equipment** - May be needed for welding or grinding