



Specialty/Stainless Steel

January 2007

MSDS No. 001

SECTION 1 - PRODUCT IDENTIFICATION

Manufacturer's Name: Refractory Anchors, Inc.
9836 S. 219th E. Ave.
Broken Arrow, OK 74014

Emergency Numbers: 918-455-8485 or 800-331-3270

Material Name: Wire, Rod, Bar, Billet, Plate, Tube & Shape Products-All Grades

Other Designations: Specialty/Stainless Steel

Contact: Randy Buchman, President

Date: January 2014

SECTION 2 - HAZARDOUS INGREDIENTS

No permissible exposure limits (PEL) or threshold limit values (TLV) exist for specialty/stainless steels. Values shown below are applicable to component elements.

COMPONENT	%	CAS NUMBER		OSHA PEL (MG/M3)	ACGIH TLV (MG/M3)
Aluminum	<2.0	7429-90-5	Dust Fumes	----	5.00
Carbon	<2.0	1333-86-4	As Carbon Black	3.50	3.50
Chromium	>.10 <35.0	7440-47-3		1.00	.50
				1.00	1.00
Cobalt	<4.5	7440-48-4		.10	(.10)**
Copper	<4.5	7440-50-8	Dust Fumes	.10	.20
			PEL-IRON		
Iron	>40.0 <99.0	1309-37-1	Oxide Fumes		
			TLV-as FE	10.00	5.00
				5.00*	5.00*
Manganese	<10.0	7439-96-5	Dust Fumes	---	1.00
Molybdenum	<10.0	7439-98-7	Insol. Compd.	15.0	10.00
Silicon	<2.50	7440-21-3	Respirable Dust	----	5.00
Sulfur	<0.4	7446-09-5	As. Sulf. Dioxide	----	5.00
Nickel	>35.0	7440-02-0		1.00	1.00
Titanium	<2.5	13463-67-7	As Ti Dioxide	15.00	5.00
Tungsten	<6.5	7440-33-7	Insol. Compd.	---	5.00
			Dust Fumes		
Vanadium	<4.5	1314-62-1	(as Vanadium Pent oxide)	.10*	.05

* Ceiling Limit

** Parentheses means ACGIH has published a limit of 0.05 MG/M3 in their notice of intended changes.

Some or various combinations of the above components may appear in grades produced.

More specific information on a particular grade may be obtained by contacting A1 Tech Specialty Steel.

SECTION 3 - PHYSICAL DATA

Specific Gravity:	7.5-8.5	Solubility in Water:	Insoluble	%
Vapor Pressure:	N/A	Volatiles:	N/A	
Melting Point:	2400°F-2800°F	Flash Point:	None	
Vapor Density:	N/A	By Volume:	N/A	
Appearance & Odor:	Solid, odorless metal	Boiling Point:	High	
Evaporation:	N/A			

SECTION 4 - FIRE AND EXPLOSION DATA

Specialty/stainless steel products in the form shipped are not considered combustible. During subsequent processing (cutting, welding, grinding, etc.) the generation of dust in high concentration may present fire and explosive hazards.

SECTION 5 - HEALTH HAZARDS

Specialty/stainless steel products in the form shipped are not considered a health hazard. During subsequent processing (cutting, welding, grinding, etc.) dust and fumes might be produced containing elements that may affect exposed workers. Also consider welding rods/coatings as sources of contaminant exposure.

Chromium and Nickel are listed in the National Toxicology Program's "Annual Report on Carcinogens" and the International Agency for Research on Cancer (IARC) "Monographs" as potentially carcinogenic. However, it should be noted that a recent epidemiological study published by IARC found no evidence of increased cancer rates among specialty steel workers.

Exposure Routes

Exposure to specialty/stainless steel products occurs primarily from inhalation of dust and fumes; however, constituents of these alloys may cause effects directly upon the skin or eyes. Certain constituents may also be harmful if swallowed.

Effects of Acute and Chronic Over Exposure:

Acute Dusts in high concentrations may cause irritations to the eyes, nose, skin and/or throat. Excessive inhalation of fumes from metals such as copper can produce an acute reaction known as metal fume fever. Symptoms consist of chills, fever (similar to flu type symptoms) which come on a few hours after high level exposures.

Chronic Prolonged over exposure to alloy dusts or fumes may cause skin, eye, throat or nose irritations, leading to pulmonary diseases. Excessive and repeated inhalation of chromium and nickel fumes or dust may cause severe irritation, ulceration and increased risk of cancer in the respiratory system. Excessive and prolonged inhalation of manganese (generally over two years exposure) can cause damage to the central nervous system – specifically leading to symptomatology resembling Parkinson's disease.

First Aid

Inhalation – remove to fresh air, get medical attention

Skin – wash areas well with soap and water

Eyes – flush well with running water to remove particulate, get medical attention

Ingestion – In the unlikely even that large quantities of metal have been ingested, get medical attention

SECTION 6 - REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Avoid generation of airborne dust which presents moderate fire and explosion hazards

Incompatibility (material to avoid): Acids, bases and oxidizers. Molten metal will react violently with water.

SECTION 7 - SPILL AND LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Fine material should be swept or vacuumed. Avoid using compressed air to maneuver spills or leaks of dusty material to avoid eye contamination.

Waste handling and disposal method: Dispose of in accordance with applicable federal, state and local regulation. Scrap metal can be reclaimed for refuse.

SECTION 8 - OCCUPATIONAL PROTECTIVE MEASURES

Respiratory Protection: Use general and local exhaust ventilation to keep airborne dust or fumes below established TLV's Employees should wear NIOSH approved respirators for protection against dust of fumes when established TLV's are exceeded. The TLV for total dust is 10 MG/M3 and for respirable dust the TLV is 5 MG/M3.

Protective Equipment: Approved safety goggles should be worn during operation creating eye hazards. A welding hood should be worn when welding or burning. Use gloves and other protective clothing as required.

Other: Principles of good personal hygiene should be followed prior to changing into street clothes or eating. Food should not be consumed in the work areas.

SECTION 9 - SPECIAL PRECAUTIONS

Minimize and control operations producing dust and fume.

Use good housekeeping practices to prevent accumulation of dust and fume.

Store material away from incompatible materials and also keep dust and fumes away.

SECTION 10 - TRANSPORTATION

Ship according to the Department of Transportation Regulations.