

## MATERIAL SAFETY DATA SHEET

### PRODUCT IDENTIFICATION

This MSDS applies to all grades of Stainless Steels processed by Abrasive Materials.

### HAZARDOUS INGREDIENTS

No permissible exposure limits (PEL) or threshold limit values (TLV) exist for Stainless Steels. Values shown below are applicable to major component elements.

<u>COMPONENT</u>	<u>%</u>	<u>CAS NUMBER</u>		<u>OSHA PEL (MG/M<sup>3</sup>)</u>	<u>ACGIH TLV (MG/M<sup>3</sup>)</u>
Aluminum (Al)	<2.0	7429-90-5	Dust	-	10.00
			Fumes	-	5.00
Carbon (C)	<2.0	1333-86-4	As Carbon Black	3.50	3.50
Chromium (Cr)	>.10 <35.0	7440-47-3		1.00	0.50
Cobalt (Co)	<4.5	7440-48-4		0.10	(0.10)**
Copper (Cu)	<4.5	7440-50-8	Dust	1.00	1.00
			Fumes	0.10	0.20
Iron (Fe)	>40.00 <99.0	1309-37-1	PEL-Iron	10.00	5.00
			Oxide Fumes		
			TLV as Fe		
Manganese (Mn)	<10.0	7439-96-5	Dust	5.00*	5.00*
			Fumes	-	1.00
Molybdenum (Mo)	<10.0	7439-98-7	Insol. Compd.	15.00	10.00
Nickel (Ni)	<35.0	7440-02-0		1.00	1.00
Silicon (Si)	<2.50	7440-21-3	Respirable Dust	-	5.00
Sulfur (S)	<.040	7446-09-5	As Sulf. Dioxide	-	5.00
Phosphorus (P)	<.005	7723-14-0		-	0.10
Titanium (Ti)	<2.50	13463-67-7	As Ti Dioxide	15.00	5.00
Tungsten (W)	<6.50	7440-33-7	Insol. Compd.	-	5.00
Vanadium (V)	<4.50	1314-62-1	Dust	0.50*	0
			Fumes	0.10*	0.005
Niobium/ Tantalum (Nb/Ta)	<1.00	7440-25-7 7440-03-1		5.00 (Ta)	5.00 (Ta)

\* Ceiling Limit

\*\* Parenthesis means ACGIH has published a limit of 0.05 Mg/M<sup>3</sup> in their of notice of intended changes.

### PHYSICAL DATA

Melting Point: 2500 Degrees F – 2800 Degrees F

Flash Point: None

Solubility in Water: Insoluble

Vapor Density: N/A

% Volatiles by Volume: N/A

Density: .28 lb/cu. in.

Boiling Point: High

Vapor Pressure: N/A

Evaporation: N/A

Appearance and Odor: Solid, Odorless Metal

### FIRE AND EXPLOSION DATA

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 explosion hazards.

### REACTIVITY DATA

Solubility: Insoluble in water and alkalis. Corrodes in acids and certain salts.

Hazardous Decomposition Products: Metal Fumes

## **HEALTH HAZARD INFORMATION**

Adequate ventilation is required when welding, cutting, grinding or burning this product. Dust/fume respirators are required if the fume levels exceed TLV values.

## **EMERGENCY AND FIRST AID PROCEDURES**

Inhalation: Seek medical attention, if necessary.

Skin: If irritation develops, remove contaminated clothing immediately and wash the contaminated skin with soap and water. Seek medical attention if irritation persists.

Eyes: If eyes become irritated from dust or fumes, wash with large quantities of water. Seek medical attention when necessary.

Ingestion: Seek medical attention, when necessary.

## **SPILL OR LEAK PROCEDURES**

Spills: Not applicable

Waste Disposal: Solids-Recycle as scrap

Dusts-Dispose of dusts according to local, state and federal regulations.

## **SPECIAL PROTECTION INFORMATION**

No toxic effects are expected from the alloy in the inert solid form. Excessive inhalation of fumes or dusts from burning, welding, grinding and cutting can produce an acute reaction known as metal fume fever. Nickel and chromium must be considered possible carcinogens under OSHA (29CFR1910.1200); however, recent studies of workers melting or working alloys containing these elements have been found to have no increased risk of cancer.

## **ADDITIONAL INFORMATION AND PRECAUTIONS**

Maintain exposure levels below PEL/TLV using the proper ventilation and safety equipment.

Coated material must be evaluated with the proper safety practice for the coating involved.

Information herein was obtained from sources which are believed to be authoritative and valid. However, no warranty, expressed or implied, can be made.