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**Signal Word – Danger**

**Hazard Statements**

- The mixture does not meet the criteria for classification when in alloy form.
- May cause cancer
- May cause allergy or asthma or breathing difficulties if inhaled
- Causes damage to organs through prolonged or repeated exposure
- Suspected of damaging the unborn child
- Harmful if swallowed
- May cause allergic skin reaction
- May cause respiratory irritation
- Causes eye irritations

**Precautionary Statements**

**Prevention**

- Under normal use and handling of the solid form of this material there are few preventive or precautionary measures required. Cutting, welding, melting, grinding etc. of these materials will produce dust, fume or particulate containing the component elements of these materials. Exposure to the dust, fume or particulate of these materials may present significant health hazards.
- Do not breathe dust/fume/gas/vapor/spray
- Do not eat, drink or smoke when handling this product.
- Wash thoroughly after handling
- Contaminated work clothing should not be allowed out of the workplace

**Response**

In general no treatment is necessary when handling in compound form. See first aid.

**Storage**

Store away from incompatible materials such as mineral acids

**Disposal**

Reuse or recycle material whenever possible

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**\*\*\* Section 3 – Composition / Information on Ingredients \*\*\***

**Substance/mixture**

Mixture

**Other means of identification**

300, 400 Series and pH Stainless

CAS #	Component	Percent
7439-89-6	Iron	80%
7440-02-0	Nickel	35%
7440-47-3	Chromium	30%
7439-98-7	Molybdenum	6%
7440-50-8	Copper	5%
7439-96-5	Manganese	2.5%
7440484	Cobalt	<0.3%
1314-62-1	Vanadium	< 0.25%
7440-03-1	Columbium	<1.00%

**\*\*\* Section 4 – First Aid Measures \*\*\***

**First Aid: Eyes**

Flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical attention if eye irritation persists.

**First Aid: Skin**

For irritation from coating material wash affected area with soap and water. Seek medical attention if skin irritation persists.

**First Aid: Ingestion**

Dust may irritate mouth and gastrointestinal tract. If ingested seek medical attention promptly.

**First Aid: Inhalation**

For overexposure to metal fumes, remove to fresh air, Seek medical attention promptly

**\*\*\* Section 5 – Fire Fighting Measures \*\*\***

**General Fire Hazards**

None

**Hazardous Combustion Products**

N/A

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**Extinguishing Media**

N/A

**Unsuitable Extinguishing Media**

N/A

**Fire Fighting Equipment/Instructions**

N/A

**\*\*\* Section 6 – Accidental Release Measures \*\*\***

**Recovery and Neutralization**

N/A

**Materials and Methods for Clean-Up**

N/A

**Emergency Measures**

N/A

**Personal Precautions and Protective Equipment**

See Section 8

**Environmental Precautions**

N/A

**Prevention of Secondary Hazards**

N/A

**\*\*\* Section 7 – Handling and Storage \*\*\***

**Handling Procedures**

Put on appropriate personal protective equipment (see section 8). Avoid generation and spreading of dust. Do not breathe fumes or dust. Avoid contact with sharp edges.

**Storage Procedures**

Store in dry area

**Incompatibilities**

Contact with mineral acids will release hydrogen gas

**\*\*\* Section 8 – Exposure Controls / Personal Protection \*\*\***

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### Component Exposure Limits

CAS #	Name	OSHA – PEL	ACGIH - TLV
7439-89-6	Iron	10 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
7440-02-0	Nickel	1 mg/m <sup>3</sup>	1.5 mg/m <sup>3</sup>
7440-47-3	Chromium	1 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
7439-98-7	Molybdenum	10 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>
7440-50-8	Copper	0.1 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
7439-96-5	Manganese	5 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
7440484	Cobalt	0.02 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
1314-62-1	Vanadium	0.5 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
7440-03-1	Columbium	5 mg/m <sup>3</sup>	NA

Note: Concentrations represent a maximum for all grades within a category of steel products and must not be interpreted as a specification for a particular grade.

### Engineering Measures

Have adequate ventilation during welding, burning, or grinding.

### Hygienic Practices

Wash hands before eating, smoking, or drinking. Food or beverages should not be consumed anywhere this product is handled or stored. Wash thoroughly after handling.

### Personal Protective Equipment: Respiratory

In areas where insufficient ventilation is provided wear dust mask or appropriate respiratory protection when dust is present.

### Personal Protective Equipment: Hands, Skin and Body

Some of the steel grades may have an oil coating or lime coating. Use chemical resistant gloves when handling to prevent skin irritation.

### Personal Protective Equipment: Eyes

Wear safety glasses, face shield or goggles when cutting or grinding.

* * * Section 9 – Physical & Chemical Properties * * *			
<b>Appearance:</b>	Metallic	<b>Odor:</b>	Odorless
<b>Physical State:</b>	Solid	<b>pH:</b>	N/A
<b>Vapor Pressure:</b>	N/A	<b>Vapor Density:</b>	N/A
<b>Boiling Point:</b>	N/A	<b>Melting Point:</b>	N/A
<b>Solubility (H2O):</b>	Insoluble in water	<b>Specific Gravity:</b>	7.6-7.8
<b>Evaporation Rate:</b>	N/A	<b>VOC:</b>	N/A

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<b>Octanol/H2O Coeff:</b>	N/A	<b>Flash Point:</b>	N/A
<b>Flash Point Method:</b>	N/A	<b>Upper Flammability Limit (UFL):</b>	N/A
<b>Lower Flammability Limit (LFL):</b>	N/A	<b>Burning Rate:</b>	N/A
<b>Auto Ignition Temperature</b>	N/A		

**\*\*\* Section 10 – Chemical Stability & Reactivity Information \*\*\***

**Chemical Stability**

Stable under normal conditions of use, storage, and transportation.

**Hazardous Reaction Potential**

Hazardous reactions will not occur under normal conditions

**Conditions to Avoid**

Avoid creating for spreading dust. Sparks, heat, open flame and other sources of ignition.

**Incompatible Products**

Mineral acids

**Hazardous Decomposition Products**

N/A

**\*\*\* Section 11 – Toxicological Information \*\*\***

**Acute Toxicity**

**A: General Product Information**

Under normal use and handling of the solid form of this material there are few health hazards. Cutting, welding, melting, grinding etc. of these materials will produce dust, Hexavalent Chromium fume or particulate containing the component elements of these materials. Exposure to the dust, fume or particulate of these materials may present significant health hazards.

**B: Component Analysis - LD50/LC50**

**Iron:** Oral-LD50- Rat 30 g/kg

**Nickel:** Oral-LD50- Rat 5 g/kg

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**Chromium:** Oral-LD50- Rat 0.0275 g/kg

**Molybdenum:** Intratracheal-LD50- Rabbit 70 mg/kg

**Manganese:** Oral-LD50- Rat 9 g/kg

**Cobalt:** Oral-LD50- Rat 9 g/kg

**Potential Health Effects**

**Skin Contact**

May cause skin irritation.

**Eye Contact**

Welding or burning will generate Hexavalent Chromium fumes which can cause irritation to eyes.

**Ingestion**

No known effects.

**Inhalation**

Welding or burning will generate Hexavalent Chromium fumes which can cause irritation to nose and throat.

**Generative Cell Mutagenicity**

This product is not reported to have mutagenic effects.

**Carcinogenicity**

Certain nickel and chromium compounds have been listed by IARC as nasal lung carcinogens

**Reproductive Toxicity**

This product is not reported to have any reproductive toxicity effects.

**Specified Target Organ General Toxicity: Single Exposure**

N/A

**Specified Target Organ General Toxicity: Repeated Exposure**

N/A.

**Aspiration Respiratory Organs Hazard**

Not classified based on available information.

**Effects of Acute Exposure**

None to shipped product. Welding or burning will generate metal fumes which can cause irritation to eyes, nose and throat.

**Effects of Chronic Exposure**

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None to shipped product. Chronic inhalation overexposure to Hexavalent Chromium fume may cause cancer

**\*\*\* Section 12 – Ecological Information \*\*\***

**Ecotoxicity**

**Toxicity to Fish**

Iron LC<sub>50</sub> Common Carp 96 hour 0.56 mg/l  
 Chromium LC<sub>50</sub> Fathead minnow 96 hour 10-100 mg/l  
 Nickel LC<sub>50</sub> Common Carp 96 hour 1.3 mg/l

**Toxicity to Algae**

Nickel EC<sub>50</sub> Freshwater algae 72 hour 0.18 mg/l

**Toxicity to Microorganisms**

Nickel EC<sub>50</sub> Water flea 48 hour 1.0 mg/l

**Persistence/Degradability**

No product information available.

**Bioaccumulation**

No product information available.

**Mobility in Soil**

No product information available.

**\*\*\* Section 13 – Disposal Considerations \*\*\***

**Waste Disposal Instructions**

Dispose of in accordance with Federal, State, or Provincial requirements.

**Disposal of Contaminated Containers or Packaging**

N/A

**\*\*\* Section 14 – Transportation Information \*\*\***

**DOT/TDG Information:** Not classified as a DOT Hazardous Material or Dangerous Good



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**\*\*\* Section 15 – Regulatory Information \*\*\***

**Component Analysis**

This material does contain chemicals subject to reporting requirements of CERCLA/SARA 313.

**TSCA Inventory**

All ingredients are on the TSCA Chemical Substance inventory.

**SARA SECTION 313 - SUPPLIER NOTIFICATION**

This product contains Iron, Chromium, Manganese, Copper, and Cobalt which are chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

**U.S. -Massachusetts-Right to Know List**

The Following chemicals: Nickel, Copper, Chromium, Manganese, Molybdenum, and Cobalt are on the U.S. Massachusetts right to know list

**U.S. -New Jersey Right to know -Hazardous Substance List**

The Following chemicals: Nickel, Chromium, Copper Manganese, Molybdenum, and Cobalt are on the U.S. Pennsylvania Right to know hazardous substance list.

**U.S. -Pennsylvania-Right to know- Environmental Hazard List**

The Following chemicals: Nickel, Chromium, Copper, and Cobalt are on the U.S. Pennsylvania Right to know environmental substance list.

**U.S. -Pennsylvania-Right to know -Special Hazardous Substance List**

The Following chemicals: Nickel, Chromium, and Cobalt are on the U.S. Pennsylvania Right to know hazardous substance list.

**U.S. -Pennsylvania-Right to know List**

The Following chemicals: Nickel, Chromium, Copper, Manganese, Molybdenum, and Cobalt are on the U.S. Pennsylvania Right to know list.

**U.S. -California - Proposition 65 - Carcinogens List**

The Substances Nickel and Cobalt are on the California Carcinogens list

**DSL Inventory**

All ingredients are listed on the DSL Chemical substance inventory

**IDL Inventory**

The following ingredients: Nickel, Chromium, Manganese, Molybdenum, Copper, and Cobalt are listed on the IDL Chemical substance inventory.

**WHMIS Inventory**

Class B division 4: **Iron**-Flammable solid

Class D division 2 subdivision A: **Cobalt**-Very toxic material causing other toxic effects

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Class D division 2 subdivision B: **Nickel** -Toxic material causing other toxic effects  
 Uncontrolled Product: **Chromium, Manganese, Molybdenum, Copper**

**\*\*\* Section 16 – Other Information \*\*\***

**Disclaimers**

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

**Language for consideration:**

Information presented in this Safety Data Sheet for the product(s) described in Section 1 (“Product”) has been compiled from sources considered to be dependable, accurate, and reliable, but manufacturer/importer does not guarantee the accuracy of any information presented. Except as expressly provided otherwise in a written contract executed by manufacturer/importer, to the fullest extent permitted by applicable law, manufacturer/importer disclaims, and the recipient or user of this safety data sheet (“recipient”) hereby expressly waives, any and all warranties, whether express, implied or statutory, with respect to the product or this safety data sheet, and any results or effect obtained from their use by recipient and/or other users, including, without limitation, any statutory or implied warranties of merchantability or fitness for a particular purpose. Manufacturer/importer specifically, but not by way of limitation, disclaims any and all liability.