

# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Material name** Steel Castellated Beams (Painted, Unpainted and/or Galvanized)  
**Revision date** 09-23-2011  
**Version #** 01  
**Product use** Structural steel  
**Synonym(s)** Steel  
**Manufacturer/Supplier** New Millennium Building Systems  
 21739 Road E-16  
 Continental, OH 45831  
 Telephone 260-868-6000  
 Contact Person: Safety Department  
**Emergency** Emergency Telephone 1-800-424-9300

## 2. Hazards Identification

**Physical state** Solid.  
**Appearance** Massive, solid metal with circular or octagon shaped holes  
**Emergency overview** In its manufactured and shipped state, this product is considered non-hazardous. Processing may generate hazardous fumes and dusts. Welding, cutting and metalizing can generate ozone. Ozone can cause irritation of eyes, nose and respiratory tract.  
**OSHA regulatory status** Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.  
**Potential health effects**  
**Routes of exposure** Skin. Eyes. Inhalation. Ingestion.  
**Eyes** Under normal conditions of intended use, this material does not pose a risk to health. Contact with hot material can cause thermal burns which may result in permanent damage. Grinding and sanding this product may generate dust. Dust may irritate the eyes. Exposed individuals may experience eye tearing, redness, and discomfort.  
**Skin** Under normal conditions of intended use, this material does not pose a risk to health. Dust may irritate skin. Contact with hot material can cause thermal burns which may result in permanent damage.  
**Inhalation** No inhalation hazard under normal conditions. Welding, burning, sawing, brazing, grinding or machining operations may generate fumes and dusts of metal oxides. High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness, and irritation of the throat, followed by weakness, muscle pain, fever, and chills.  
**Ingestion** Solid steel: Not relevant, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting.  
**Target organs** Skin. Central nervous system. Lungs.  
**Chronic effects** Danger of adverse health effects by prolonged exposure. Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases. Contains nickel. May cause sensitization by skin contact. Nickel is listed by IARC (Group 2B) and NTP. Vanadium pentoxide is classified as possibly carcinogenic to humans (Group 2B) by IARC, may cause adverse reproductive effects and may adversely affect the developing fetus. Exposure to manganese fume/dust can affect the central nervous system (apathy, drowsiness, weakness and other chronic symptoms such as postural tremors). These ingredients are bound within the product and release is not expected under normal conditions.  
**Potential environmental effects** The environmental hazard of the product is considered to be limited.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
Iron	7439-89-6	>90
Manganese	7439-96-5	0.5-1.5
Silicon	7440-21-3	0.1-0.8

Carbon	7440-44-0	0.01-0.85
Chromium	7440-47-3	0-0.7
Copper	7440-50-8	0-0.6
Nickel	7440-02-0	0-0.5
Molybdenum	7439-98-7	0-0.15
Phosphorus	7723-14-0	0-0.15
Vanadium	7440-62-2	0-0.1
Niobium	7440-03-1	0-0.05
Sulphur	7704-34-9	0-0.05
Titanium dioxide (TiO2)	13463-67-7	<0.05
Antimony	7440-36-0	<0.02
Lead	7439-92-1	<0.015
Limestone	1317-65-3	<0.015
Aluminum	7429-90-5	<0.01
Tin	7440-31-5	<0.01
Zinc	7440-66-6	<0.01
Iron oxide	1309-37-1	0
Vanadium pentoxide	1314-62-1	0

**Composition comments**

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. \*\*Iron oxide and vanadium pentoxide are formed at temperatures above the melting point.

**4. First Aid Measures**

**First aid procedures**

**Eye contact**

Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention promptly if symptoms persist or occur after washing.

**Skin contact**

Wash skin with soap and water. Contact with dust: In case of burns with hot metal, rinse with plenty of cold water. If burns are severe, consult a physician.

**Inhalation**

In case of inhalation of fumes from heated product: Move into fresh air and keep at rest. Get medical attention if symptoms persist. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration.

**5. Fire Fighting Measures**

**Flammable properties**

No unusual fire or explosion hazards noted.

**Extinguishing media**

**Suitable extinguishing media**

Use fire-extinguishing media appropriate for surrounding materials.

**Protection of firefighters**

**Protective equipment and precautions for firefighters**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**

Use standard firefighting procedures and consider the hazards of other involved materials.

**Hazardous combustion products**

Metal oxides.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Cold solid metal: No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the MSDS for additional personal protection advice when handling this product. Hot metal: Avoid contact with hot material. Wear protective clothing as described in Section 8 of this safety data sheet.
<b>Environmental precautions</b>	No specific precautions.
<b>Methods for containment</b>	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
<b>Methods for cleaning up</b>	In the event of accidental release, notify relevant authorities in accordance with all applicable regulations.  Collect for recycling.

## 7. Handling and Storage

<b>Handling</b>	Avoid contact with sharp edges and hot surfaces. Use appropriate gloves and tools to ensure safe handling. Use work methods which minimize dust/fume production. Do not breathe fumes and dusts. Follow the recommendations in ANSI Z49.1, Safety in welding and cutting (ANSI=American National Standard Institute).
<b>Storage</b>	Store in a dry place. Store away from: Strong oxidizing agents. Acids.

## 8. Exposure Controls / Personal Protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Antimony (7440-36-0)	TWA	0.5 mg/m3	
Carbon (7440-44-0)	TWA	2 mg/m3	Respirable fraction.
Chromium (7440-47-3)	TWA	0.5 mg/m3	
Copper (7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Iron oxide (1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Lead (7439-92-1)	TWA	0.05 mg/m3	
Manganese (7439-96-5)	TWA	0.2 mg/m3	
Molybdenum (7439-98-7)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.
Nickel (7440-02-0)	TWA	1.5 mg/m3	
Tin (7440-31-5)	TWA	2 mg/m3	
Titanium dioxide (TiO2) (13463-67-7)	TWA	10 mg/m3	
Vanadium pentoxide (1314-62-1)	TWA	0.05 mg/m3	Inhalable fraction.

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Lead (7439-92-1)	TWA	0.05 mg/m3

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum (7429-90-5)	PEL	5 mg/m3	Respirable dust.
		15 mg/m3	Total dust.
Antimony (7440-36-0)	PEL	0.5 mg/m3	
Carbon (7440-44-0)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Chromium (7440-47-3)	PEL	1 mg/m3	
Copper (7440-50-8)	PEL	1 mg/m3	Dust and mist.
		0.1 mg/m3	Fume.
Iron oxide (1309-37-1)	PEL	10 mg/m3	Fume.
Limestone (1317-65-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Manganese (7439-96-5)	Ceiling	5 mg/m3	Fume.
Molybdenum (7439-98-7)	PEL	15 mg/m3	Total dust.
Nickel (7440-02-0)	PEL	1 mg/m3	
Silicon (7440-21-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Tin (7440-31-5)	PEL	2 mg/m3	
Titanium dioxide (TiO2) (13463-67-7)	PEL	15 mg/m3	Total dust.
Vanadium pentoxide (1314-62-1)	Ceiling	0.5 mg/m3	Respirable dust.
		0.1 mg/m3	Fume.

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

Components	Type	Value	Form
Carbon (7440-44-0)	TWA	15 mppcf	

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components	Type	Value	Form
Aluminum (7429-90-5)	TWA	5 mg/m3	Pyrophoric powder.
		10 mg/m3	Dust.
Antimony (7440-36-0)	TWA	0.5 mg/m3	
Carbon (7440-44-0)	TWA	2 mg/m3	Respirable.
Chromium (7440-47-3)	TWA	0.5 mg/m3	
Copper (7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Iron oxide (1309-37-1)	TWA	5 mg/m3	Respirable.
Lead (7439-92-1)	TWA	0.05 mg/m3	
Limestone (1317-65-3)	TWA	10 mg/m3	
Manganese (7439-96-5)	TWA	0.2 mg/m3	
Nickel (7440-02-0)	TWA	1.5 mg/m3	
Sulphur (7704-34-9)	TWA	10 mg/m3	
Tin (7440-31-5)	TWA	2 mg/m3	
Titanium dioxide (TiO2) (13463-67-7)	TWA	10 mg/m3	
Vanadium pentoxide (1314-62-1)	TWA	0.05 mg/m3	Respirable particulate or fume.

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Components	Type	Value	Form
Aluminum (7429-90-5)	TWA	1 mg/m3	Respirable.
Antimony (7440-36-0)	TWA	0.5 mg/m3	
Carbon (7440-44-0)	TWA	2 mg/m3	Respirable.
Chromium (7440-47-3)	TWA	0.5 mg/m3	
Copper (7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Iron oxide (1309-37-1)	STEL	10 mg/m3	Fume.
	TWA	5 mg/m3	Fume.
		5 mg/m3	Dust.
		3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Lead (7439-92-1)	TWA	0.05 mg/m3	
Limestone (1317-65-3)	STEL	20 mg/m3	Total dust.
	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Manganese (7439-96-5)	TWA	0.2 mg/m3	
Molybdenum (7439-98-7)	TWA	3 mg/m3	Respirable.
		10 mg/m3	Inhalable
Nickel (7440-02-0)	TWA	0.05 mg/m3	
Tin (7440-31-5)	TWA	2 mg/m3	
Titanium dioxide (TiO2) (13463-67-7)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Vanadium pentoxide (1314-62-1)	Ceiling	0.05 mg/m3	Respirable dust and/or fume.
	TWA	0.2 mg/m3	Total dust.

**Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
Aluminum (7429-90-5)	TWA	5 mg/m3	Welding fume.

**Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
		10 mg/m3	Dust.
Antimony (7440-36-0)	TWA	0.5 mg/m3	
Carbon (7440-44-0)	TWA	2 mg/m3	Respirable.
Chromium (7440-47-3)	TWA	0.5 mg/m3	
Copper (7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Iron (7439-89-6)	TWA	5 mg/m3	Welding fume.
Iron oxide (1309-37-1)	TWA	5 mg/m3	Respirable.
Lead (7439-92-1)	TWA	0.05 mg/m3	
Manganese (7439-96-5)	TWA	0.2 mg/m3	
Molybdenum (7439-98-7)	TWA	3 mg/m3	Respirable.
		10 mg/m3	Inhalable
Nickel (7440-02-0)	TWA	1 mg/m3	Inhalable
Silicon (7440-21-3)	TWA	10 mg/m3	Total dust.
Tin (7440-31-5)	TWA	2 mg/m3	
Titanium dioxide (TiO <sub>2</sub> ) (13463-67-7)	TWA	10 mg/m3	Total dust.
Vanadium (7440-62-2)	TWA	0.05 mg/m3	Respirable dust and/or fume.
Vanadium pentoxide (1314-62-1)	TWA	0.05 mg/m3	Respirable dust and/or fume.

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

Components	Type	Value	Form
Aluminum (7429-90-5)	TWA	5 mg/m3	Welding fume.
		10 mg/m3	
Antimony (7440-36-0)	TWA	0.5 mg/m3	
Carbon (7440-44-0)	TWA	2 mg/m3	Respirable dust.
Chromium (7440-47-3)	TWA	0.5 mg/m3	
Copper (7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Iron oxide (1309-37-1)	TWA	5 mg/m3	Dust and fume.
		10 mg/m3	Total dust.
Lead (7439-92-1)	TWA	0.05 mg/m3	
Limestone (1317-65-3)	TWA	10 mg/m3	Total dust.
Manganese (7439-96-5)	STEL	3 mg/m3	Fume.
	TWA	5 mg/m3	Dust.
		1 mg/m3	Fume.
Molybdenum (7439-98-7)	TWA	10 mg/m3	
Nickel (7440-02-0)	TWA	1 mg/m3	
Silicon (7440-21-3)	TWA	10 mg/m3	Total dust.
Tin (7440-31-5)	TWA	2 mg/m3	
Titanium dioxide (TiO <sub>2</sub> ) (13463-67-7)	TWA	10 mg/m3	Total dust.
Vanadium pentoxide (1314-62-1)	TWA	0.05 mg/m3	Respirable dust and/or fume.

**Mexico. Occupational Exposure Limit Values**

Components	Type	Value	Form
Aluminum (7429-90-5)	TWA	5 mg/m3	Pyrophoric powder.
		5 mg/m3	Welding fume.
		10 mg/m3	Dust.
Antimony (7440-36-0)	TWA	0.5 mg/m3	
Carbon (7440-44-0)	TWA	10 mg/m3	
Chromium (7440-47-3)	TWA	0.5 mg/m3	
Copper (7440-50-8)	STEL	2 mg/m3	Fume.
		2 mg/m3	Dust and mist.
	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Iron oxide (1309-37-1)	STEL	10 mg/m3	
	TWA	5 mg/m3	
Lead (7439-92-1)	TWA	0.15 mg/m3	Dust and fume.
Limestone (1317-65-3)	STEL	20 mg/m3	
	TWA	10 mg/m3	

**Mexico. Occupational Exposure Limit Values**

<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Manganese (7439-96-5)	STEL	3 mg/m <sup>3</sup>	Fume.
	TWA	1 mg/m <sup>3</sup>	Fume.
		0.2 mg/m <sup>3</sup>	
Molybdenum (7439-98-7)	STEL	20 mg/m <sup>3</sup>	
	TWA	10 mg/m <sup>3</sup>	
Nickel (7440-02-0)	TWA	1 mg/m <sup>3</sup>	
Silicon (7440-21-3)	STEL	20 mg/m <sup>3</sup>	
	TWA	10 mg/m <sup>3</sup>	
Tin (7440-31-5)	STEL	4 mg/m <sup>3</sup>	
	TWA	2 mg/m <sup>3</sup>	
Titanium dioxide (TiO <sub>2</sub> ) (13463-67-7)	STEL	20 mg/m <sup>3</sup>	
	TWA	10 mg/m <sup>3</sup>	
Vanadium pentoxide (1314-62-1)	TWA	0.5 mg/m <sup>3</sup>	Respirable dust and/or fume.
	TWA	0.5 mg/m <sup>3</sup>	

**Engineering controls**

Adequate ventilation should be provided so that exposure limits are not exceeded. Use local exhaust when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

**Personal protective equipment****Eye / face protection**

Risk of contact: Wear approved safety goggles. Use of safety glasses or goggles is required for welding, burning, sawing, brazing, grinding or machining operations.

**Skin protection**

Wear protective gloves. When material is heated, wear gloves to protect against thermal burns. Risk of contact: Wear suitable protective clothing. Thermally protective apron and long sleeves are recommended when volume of hot material is significant.

**Respiratory protection**

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

**General hygiene considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

**9. Physical & Chemical Properties**

<b>Appearance</b>	Massive, solid metal with circular or octagon shaped holes
<b>Color</b>	Metallic gray.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>pH</b>	Not applicable.
<b>Melting point</b>	2750 °F (1510 °C)
<b>Freezing point</b>	Not applicable.
<b>Boiling point</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability limits in air, upper, % by volume</b>	Not applicable.
<b>Flammability limits in air, lower, % by volume</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Specific gravity</b>	Not available.
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not available.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	This product is stable under expected conditions of use.
<b>Conditions to avoid</b>	Contact with incompatible materials. Contact with acids will release flammable hydrogen gas.
<b>Incompatible materials</b>	Strong acids. Oxidizing agents.
<b>Hazardous decomposition products</b>	Not available.
<b>Possibility of hazardous reactions</b>	Will not occur.

## 11. Toxicological Information

### Toxicological data

Components	Test Results
Iron (7439-89-6)	Acute Inhalation LC50 Rat: 250 mg/m3 6 Hours (Carbonyl iron) Acute Oral LD50 Rat: 7500 mg/kg
<b>Acute effects</b>	High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness, and irritation of the throat, followed by weakness, muscle pain, fever, and chills. Welding, cutting and metalizing can generate ozone. Ozone can cause irritation of eyes, nose and respiratory tract.
<b>Chronic effects</b>	Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. The product contains a small amount of sensitizing substance which may provoke an allergic reaction among sensitive individuals in contact with skin. The ingredients of the alloy are bound within the product and release is not expected under normal conditions.  Contains nickel. Nickel is listed by IARC (Group 2B) and NTP. Vanadium pentoxide is classified as possibly carcinogenic to humans (Group 2B) by IARC, may cause adverse reproductive effects and may adversely affect the developing fetus. Exposure to manganese fume/dust can affect the central nervous system (apathy, drowsiness, weakness and other chronic symptoms such as postural tremors).

### Carcinogenicity

#### ACGIH Carcinogens

Aluminum (CAS 7429-90-5)	A4 Not classifiable as a human carcinogen.
Chromium (CAS 7440-47-3)	A4 Not classifiable as a human carcinogen.
Iron oxide (CAS 1309-37-1)	A4 Not classifiable as a human carcinogen.
Lead (CAS 7439-92-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Molybdenum (CAS 7439-98-7)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Nickel (CAS 7440-02-0)	A5 Not suspected as a human carcinogen.
Titanium dioxide (TiO2) (CAS 13463-67-7)	A4 Not classifiable as a human carcinogen.
Vanadium pentoxide (CAS 1314-62-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)	3 Not classifiable as to carcinogenicity to humans.
Iron oxide (CAS 1309-37-1)	3 Not classifiable as to carcinogenicity to humans.
Lead (CAS 7439-92-1)	2B Possibly carcinogenic to humans.
Nickel (CAS 7440-02-0)	2B Possibly carcinogenic to humans.
Titanium dioxide (TiO2) (CAS 13463-67-7)	2B Possibly carcinogenic to humans.
Vanadium pentoxide (CAS 1314-62-1)	2B Possibly carcinogenic to humans.

#### US NTP Report on Carcinogens: Anticipated carcinogen

Lead (CAS 7439-92-1)	Anticipated carcinogen.
Nickel (CAS 7440-02-0)	Anticipated carcinogen.

#### US NTP Report on Carcinogens: Known carcinogen

Nickel (CAS 7440-02-0)	Known carcinogen.
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## 12. Ecological Information

<b>Ecotoxicity</b>	Not expected to be harmful to aquatic organisms.
<b>Persistence and degradability</b>	No data available.

<b>Bioaccumulation / Accumulation</b>	No data available on bioaccumulation.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Mobility in environmental media</b>	Not relevant, due to the form of the product.

### 13. Disposal Considerations

<b>Disposal instructions</b>	Dispose waste and residues in accordance with applicable federal, state, and local regulations.
<b>Waste from residues / unused products</b>	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and recycle, if practical.
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

### 14. Transport Information

#### DOT

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

#### TDG

Not regulated as dangerous goods.

### 15. Regulatory Information

<b>US federal regulations</b>	Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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#### TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

Not regulated.

#### US CAA Section 112 Hazardous Air Pollutants (HAPs) List

Antimony (CAS 7440-36-0)  
Chromium (CAS 7440-47-3)  
Lead (CAS 7439-92-1)  
Manganese (CAS 7439-96-5)  
Nickel (CAS 7440-02-0)  
Phosphorus (CAS 7723-14-0)

#### US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

Phosphorus (CAS 7723-14-0) 1 LBS  
Vanadium pentoxide (CAS 1314-62-1) 1000 LBS

#### US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

Phosphorus (CAS 7723-14-0) 100 LBS

#### US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, lower value

Vanadium pentoxide (CAS 1314-62-1) 100 LBS

#### US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, upper value

Vanadium pentoxide (CAS 1314-62-1) 10000 LBS

#### US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Aluminum (CAS 7429-90-5) 1.0 %  
Antimony (CAS 7440-36-0) 1.0 %  
Chromium (CAS 7440-47-3) 1.0 %  
Copper (CAS 7440-50-8) 1.0 %  
Lead (CAS 7439-92-1) 0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.  
Manganese (CAS 7439-96-5) 1.0 %  
Nickel (CAS 7440-02-0) 0.1 %  
Phosphorus (CAS 7723-14-0) 1.0 %  
Vanadium (CAS 7440-62-2) 1.0 %  
Vanadium pentoxide (CAS 1314-62-1) 1.0 % N770

Zinc (CAS 7440-66-6) 1.0 %

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Reportable threshold**

Lead (CAS 7439-92-1) 100 LBS

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

Aluminum (CAS 7429-90-5)	Listed.
Antimony (CAS 7440-36-0)	Listed.
Chromium (CAS 7440-47-3)	Listed.
Copper (CAS 7440-50-8)	Listed.
Lead (CAS 7439-92-1)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Nickel (CAS 7440-02-0)	Listed.
Phosphorus (CAS 7723-14-0)	Listed.
Vanadium (CAS 7440-62-2)	Listed.
Vanadium pentoxide (CAS 1314-62-1)	N770 Listed.
Zinc (CAS 7440-66-6)	Listed.

**CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)**

Chromium: 5000  
 Copper: 5000  
 Nickel: 100  
 Phosphorus: 1  
 Antimony: 5000  
 Lead: 10  
 Zinc: 1000  
 Vanadium pentoxide: 1000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - No  
 Delayed Hazard - Yes  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 302 extremely hazardous substance (40 CFR 355, Appendix A)** No

**Section 311/312 (40 CFR 370)** No

**Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)** Not controlled

**Canadian regulations** This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

**WHMIS status** Controlled

**WHMIS classification** D2A - Other Toxic Effects-VERY TOXIC

**WHMIS labeling**



**Inventory status**

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** WARNING: This product contains chemical(s) known to the State of California to cause cancer.

**US - California Hazardous Substances (Director's): Listed substance**

Aluminum (CAS 7429-90-5)	Listed.
Antimony (CAS 7440-36-0)	Listed.
Carbon (CAS 7440-44-0)	Listed.
Chromium (CAS 7440-47-3)	Listed.
Copper (CAS 7440-50-8)	Listed.
Iron (CAS 7439-89-6)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Lead (CAS 7439-92-1)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Molybdenum (CAS 7439-98-7)	Listed.
Nickel (CAS 7440-02-0)	Listed.
Phosphorus (CAS 7723-14-0)	Listed.
Sulphur (CAS 7704-34-9)	Listed.
Tin (CAS 7440-31-5)	Listed.
Vanadium (CAS 7440-62-2)	Listed.
Vanadium pentoxide (CAS 1314-62-1)	Listed.
Zinc (CAS 7440-66-6)	Listed.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Lead (CAS 7439-92-1)	Listed.
Nickel (CAS 7440-02-0)	Listed.
Vanadium pentoxide (CAS 1314-62-1)	Listed.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Lead (CAS 7439-92-1)	Listed: October 1, 1992 Carcinogenic.
Nickel (CAS 7440-02-0)	Listed: October 1, 1989 Carcinogenic.
Titanium dioxide (TiO2) (CAS 13463-67-7)	Listed: September 2, 2011 Carcinogenic.
Vanadium pentoxide (CAS 1314-62-1)	Listed: February 11, 2005 Carcinogenic.

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

Lead (CAS 7439-92-1)	Listed: February 27, 1987 Developmental toxin.
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**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

Lead (CAS 7439-92-1)	Listed: February 27, 1987 Female reproductive toxin.
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**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

Lead (CAS 7439-92-1)	Listed: February 27, 1987 Male reproductive toxin.
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**US - Massachusetts RTK - Substance: Listed substance**

Aluminum (CAS 7429-90-5)	Listed.
Antimony (CAS 7440-36-0)	Listed.
Chromium (CAS 7440-47-3)	Listed.
Copper (CAS 7440-50-8)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Lead (CAS 7439-92-1)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Molybdenum (CAS 7439-98-7)	Listed.
Nickel (CAS 7440-02-0)	Listed.
Phosphorus (CAS 7723-14-0)	Listed.
Silicon (CAS 7440-21-3)	Listed.
Sulphur (CAS 7704-34-9)	Listed.
Tin (CAS 7440-31-5)	Listed.
Titanium dioxide (TiO2) (CAS 13463-67-7)	Listed.
Vanadium (CAS 7440-62-2)	Listed.
Vanadium pentoxide (CAS 1314-62-1)	Listed.
Zinc (CAS 7440-66-6)	Listed.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

Aluminum (CAS 7429-90-5)	500 LBS
Antimony (CAS 7440-36-0)	500 LBS

Chromium (CAS 7440-47-3)	500 LBS
Copper (CAS 7440-50-8)	500 LBS
Lead (CAS 7439-92-1)	500 LBS
Manganese (CAS 7439-96-5)	500 LBS
Nickel (CAS 7440-02-0)	500 LBS
Phosphorus (CAS 7723-14-0)	100 LBS
Vanadium (CAS 7440-62-2)	500 LBS
Vanadium pentoxide (CAS 1314-62-1)	100 LBS
Zinc (CAS 7440-66-6)	500 LBS

**US - New Jersey RTK - Substances: Listed substance**

Aluminum (CAS 7429-90-5)	Listed.
Antimony (CAS 7440-36-0)	Listed.
Carbon (CAS 7440-44-0)	Listed.
Chromium (CAS 7440-47-3)	Listed.
Copper (CAS 7440-50-8)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Lead (CAS 7439-92-1)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Molybdenum (CAS 7439-98-7)	Listed.
Nickel (CAS 7440-02-0)	Listed.
Phosphorus (CAS 7723-14-0)	Listed.
Silicon (CAS 7440-21-3)	Listed.
Sulphur (CAS 7704-34-9)	Listed.
Tin (CAS 7440-31-5)	Listed.
Titanium dioxide (TiO2) (CAS 13463-67-7)	Listed.
Vanadium (CAS 7440-62-2)	Listed.
Vanadium pentoxide (CAS 1314-62-1)	Listed.
Zinc (CAS 7440-66-6)	Listed.

**US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards**

Antimony (CAS 7440-36-0)	LISTED
Chromium (CAS 7440-47-3)	LISTED
Copper (CAS 7440-50-8)	LISTED
Lead (CAS 7439-92-1)	LISTED
Manganese (CAS 7439-96-5)	LISTED
Nickel (CAS 7440-02-0)	LISTED
Zinc (CAS 7440-66-6)	LISTED

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

Aluminum (CAS 7429-90-5)	Listed.
Antimony (CAS 7440-36-0)	Listed.
Chromium (CAS 7440-47-3)	Listed.
Copper (CAS 7440-50-8)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Lead (CAS 7439-92-1)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Molybdenum (CAS 7439-98-7)	Listed.
Nickel (CAS 7440-02-0)	Listed.
Phosphorus (CAS 7723-14-0)	Listed.
Silicon (CAS 7440-21-3)	Listed.
Sulphur (CAS 7704-34-9)	Listed.
Tin (CAS 7440-31-5)	Listed.
Titanium dioxide (TiO2) (CAS 13463-67-7)	Listed.
Vanadium (CAS 7440-62-2)	Listed.
Vanadium pentoxide (CAS 1314-62-1)	Listed.
Zinc (CAS 7440-66-6)	Listed.

**US - Pennsylvania RTK - Hazardous Substances: Special hazard**

Chromium (CAS 7440-47-3)	Special hazard.
Nickel (CAS 7440-02-0)	Special hazard.

**Mexico regulations**

Under some use conditions, this material may be considered to be hazardous in accordance with Mexican regulations.

## 16. Other Information

### HMIS® ratings

Health: 2\*  
Flammability: 0  
Physical hazard: 0

### NFPA ratings

Health: 0  
Flammability: 0  
Instability: 0

### Disclaimer

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. MSDS's for specific coatings are available upon request.

### Issue date

09-23-2011