



MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Steel Joists, Joist Girders, Bridging & Accessories (Painted, Unpainted, and/or Galvanized)

Manufacturer Name:

New Millennium Building Systems

6115 County Road 42

Butler, IN 46721

Telephone: 260-868-6000

For other manufacturing locations, see Section 16

Emergency Telephone:

1-800-424-9300

Intended Use: Steel Fabricated Parts

Contact Person: Safety Department

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Solid

Color: Gray (painted), metallic gray (unpainted or galvanized)

Odor: None

In its manufactured and shipped state, this product is considered non-hazardous. Processing may generate hazardous fumes and dusts.

Potential Health Effects

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.

Eye Contact: 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 Contact: Under normal conditions of intended use, this material does not pose a risk to health. Dust may irritate skin. May dry the skin leading to discomfort and dermatitis. Skin contact may aggravate an existing dermatitis. Contact with hot material can cause thermal burns which may result in permanent damage.

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.

Chronic Health Effects: 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. Chromium VI compounds are regarded as human carcinogens by IARC, NTP, OSHA and ACGIH. A residual chrome VI compound from the surface coating is water soluble and is carcinogenic. 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.

Target Organ(s): | Skin | Lung | Central nervous system |

Potential Physical / Chemical Effects: The dangerous properties of the product are considered limited.

OSHA Regulatory Status: Under some use conditions, this material may be considered to be hazardous in accordance with OSHA 29 CFR 1910.1200.

Environment: The environmental hazard of the product is considered to be limited.

3	COMPOSITION / INFORMATION ON INGREDIENTS
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General Information: The product is an alloy. At temperatures above the melting point steel products may liberate fumes containing oxides of iron and alloying elements. This product may contain a coating at a concentration below 1.0% by weight. MSDS's for specific coatings are available upon request.

Chemical Name	CAS-No.	Concentration*
Iron	7439-89-6	94 - 99%
†Chromium	7440-47-3	0 - 0.9%
†Manganese	7439-96-5	0.25 - 1.65%
†Carbon	7440-44-0	0.01 - 1.1%
†Coating(s)	-	< 1%
†Copper	7440-50-8	0.1 - 1%
†Iron oxide**	1309-37-1	0%
†Nickel	7440-02-0	0.03 - 0.75%
†Silicon	7440-21-3	0.05 - 0.5%
†Molybdenum	7439-98-7	0.01 - 0.2%
†Aluminum	7429-90-5	0.001 - 0.1%
Sulfur	7704-34-9	0.001 - 0.08%
†Lead (Pb)	7439-92-1	0 - 0.07%
†Phosphorus	7723-14-0	<= 0.06%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

† This chemical is hazardous according to OSHA/WHMIS criteria.

**Iron oxide is formed at temperatures above the melting point.

4	FIRST AID MEASURES
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Inhalation: In case of inhalation of dusts or 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.

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 occur after washing.

Skin Contact: Wash skin with soap and water. In case of burns with hot metal, rinse with plenty of cold water. If burns are severe, consult a physician. If skin irritation or an allergic skin reaction develops, get medical attention.

Ingestion: Solid steel: Not Applicable Dust: Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable Extinguishing Media: Not applicable.

Special Fire Fighting Procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Unusual Fire & Explosion Hazards: No unusual fire or explosion hazards noted.

Hazardous Combustion Products: Acrid fumes, Metal oxides, inorganic compounds

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

Flammability Class: NFPA Rating Fire = 0. Materials that will not burn.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: 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.

Spill Cleanup Methods: Collect for recycling.

Environmental Precautions: No specific precautions.

Notification Procedures: In the event of accidental release, notify relevant authorities in accordance with all applicable regulations.

7 HANDLING AND STORAGE

Handling: 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. The organic material(s) of the coating(s) may generate fumes or gases when heated or melted. Observe safety measures suited to the coating(s) when handling, cutting or melting. Follow the recommendations in ANSI Z49.1, Safety in welding and cutting (ANSI=American National Standard Institute).

Storage: Store in a dry place. Store away from: Acids. Oxidizing agents.

8	EXPOSURE CONTROLS / PERSONAL PROTECTION
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Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
Aluminum (Dust.)	ACGIH	TWA	10 mg/m ³	as metal dust
Aluminum (Total dust.)	US. OSHA Table Z-1	TWA	15 mg/m ³	as Al
Aluminum (Respirable dust.)	US. OSHA Table Z-1	TWA	5 mg/m ³	as Al
Carbon (Inhalable dust.)	ACGIH	TWA	10 mg/m ³	General dust
Carbon (Respirable dust.)	ACGIH	TWA	3 mg/m ³	General dust
Carbon (Respirable fraction.)	US. OSHA Table Z-1	TWA	5 mg/m ³	General dust
Carbon (Total dust.)	US. OSHA Table Z-1	TWA	15 mg/m ³	General dust
Chromium	NIOSH Guide	IDLH	250 mg/m ³	
Chromium	US. OSHA Table Z-1	TWA	1 mg/m ³	as Cr
Copper (Dust and mist.)	ACGIH	TWA	1 mg/m ³	as Cu
Copper (Fume.)	ACGIH	TWA	0.2 mg/m ³	
Copper	NIOSH Guide	IDLH	100 mg/m ³	
Copper (Fume.)	US. OSHA Table Z-1	TWA	0.1 mg/m ³	as Cu
Copper (Dust and mist.)	US. OSHA Table Z-1	TWA	1 mg/m ³	as Cu
Iron oxide** (Respirable fraction.)	ACGIH	TWA	5 mg/m ³	as Fe
Iron oxide**	NIOSH Guide	IDLH	2500 mg/m ³	as Fe
Iron oxide** (Fume.)	US. OSHA Table Z-1	TWA	10 mg/m ³	
Lead (Pb)	ACGIH	TWA	0.05 mg/m ³	as Pb
Lead (Pb)	OSHA Spec. Reg.	OSHA Action level	0.03 mg/m ³	
Lead (Pb)	OSHA Spec. Reg.	TWA	0.05 mg/m ³	
Manganese	ACGIH	TWA	0.2 mg/m ³	as Mn
Manganese	NIOSH Guide	IDLH	500 mg/m ³	as Mn
Manganese (Fume.)	US. OSHA Table Z-1	Ceiling	5 mg/m ³	as Mn
Molybdenum (Respirable fraction.)	ACGIH	TWA	3 mg/m ³	as Mo
Molybdenum	NIOSH Guide	IDLH	5000 mg/m ³	
Molybdenum (Total dust.)	US. OSHA Table Z-1	TWA	15 mg/m ³	as Mo
Nickel (Inhalable fraction.)	ACGIH	TWA	1.5 mg/m ³	as Ni
Nickel	NIOSH Guide	IDLH	10 mg/m ³	as Ni
Nickel	US. OSHA Table Z-1	TWA	1 mg/m ³	as Ni
Phosphorus	ACGIH	TWA	0.1 mg/m ³	
Phosphorus	NIOSH Guide	IDLH	5 mg/m ³	

Phosphorus	US. OSHA Table Z-1	TWA	0.1 mg/m ³	
Silicon	ACGIH	TWA	10 mg/m ³	
Silicon (Respirable fraction.)	US. OSHA Table Z-1	TWA	5 mg/m ³	
Silicon (Total dust.)	US. OSHA Table Z-1	TWA	15 mg/m ³	

Consult Canadian Provincial Regulations and/or Mexican Regulations on exposure limits, if applicable.
**Iron oxide is formed at temperatures above the melting point.

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.

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

Eye Protection: Use of safety glasses or goggles is required for welding, burning, sawing, brazing, grinding or machining operations. In addition to safety glasses or goggles, a welding helmet with appropriate shaded shield is required during welding, burning, or brazing. A face shield is recommended, in addition to safety glasses or goggles, during sawing, grinding, or machining.

Hand Protection: Wear protective gloves. When material is heated, wear gloves to protect against thermal burns. While handling product and/or steel packing material wear cut resistant gloves and sleeves for laceration protection.

Skin Protection: Wear suitable protective clothing. Thermally protective apron or coat with long sleeves are recommended when the volume of hot material is significant.

Hygiene Measures: 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.

Environmental Exposure Controls: Environmental manager must be informed of all major releases.

9	PHYSICAL AND CHEMICAL PROPERTIES
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Color: Gray (painted), metallic gray (unpainted or galvanized)

Odor: None

Odor Threshold: Not applicable.

Physical State: Solid

pH: Not applicable

Melting Point: 1510°C (2750°F)

Freezing Point: Not applicable.

Boiling Point: Not applicable.

Flash Point: Not applicable.

Evaporation Rate: Not applicable.

Flammability Limit - Upper (%): Not applicable.

Flammability Limit - Lower (%): Not applicable.

Vapor Pressure: Not applicable.

Vapor Density (Air=1): Not applicable.

Specific Gravity: 7.9
Solubility in Water: Insoluble
Solubility (Other): No data available.
Partition Coefficient (n-Octanol/water): Not applicable.
Autoignition Temperature: Not applicable.
Decomposition Temperature: No data available.

10	STABILITY AND REACTIVITY
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Stability: This product is stable under expected conditions of use.

Conditions to Avoid: Avoid contact with acids and oxidizing substances.

Incompatible Materials: Strong Acids. Oxidizing agents.

Hazardous Decomposition Products:

At Elevated Temperatures:	Acrid fumes, Metal oxides, inorganic compounds
Strong Acid Contact:	Hydrogen, inorganic compounds

Possibility of Hazardous Reactions: Will not occur.

11	TOXICOLOGICAL INFORMATION
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Specified Substance(s)

Acute Toxicity:

Chemical Name	Test Results
Manganese	Oral LD50 (Rat): 9 g/kg
Silicon	Oral LD50 (Rat): 3160 mg/kg

Other Acute: High concentrations of dust may irritate throat and respiratory system and cause coughing.

Chronic Toxicity: Contains nickel. May cause sensitization by skin contact. Nickel is listed by IARC (Group 2B) and NTP. A residual chrome VI compound from the surface coating is water soluble and is carcinogenic. Chromium VI compounds are regarded as human carcinogens by IARC, NTP, OSHA and ACGIH. Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Exposure to manganese fume/dust can affect the central nervous system (apathy, drowsiness, weakness and other chronic symptoms such as postural tremors).

Listed Carcinogens:

Chemical Name	IARC	NTP	OSHA	ACGIH
Chromium	3	Not Listed	Not Listed	Not Listed
Nickel	2B	Listed	Not Listed	A5
Lead (Pb)	2B	Listed	Not Listed	A3
Iron oxide**	3	Not Listed	Not Listed	A4

IARC: 1 = Carcinogenic to Humans; 2A = Probably Carcinogenic to Humans; 2B = Possibly Carcinogenic to Humans; 3 = Not classifiable as to carcinogenicity to humans; 4 = Probably not carcinogenic to humans; Not listed = Not evaluated by IARC.

ACGIH: A1 = Confirmed Human Carcinogen; A2 = Suspected Human Carcinogen; A3 = Confirmed Animal Carcinogen; A4 = Not classifiable as a human carcinogen; A5 = Not suspected to be a human carcinogen; Not listed = Not evaluated by ACGIH.

Product Information

Acute Toxicity: High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Inhalation of dust (generated at high temperatures only) may cause mild irritation of the upper respiratory tract. Prolonged contact may cause redness, irritation and cracking. Welding, cutting and metalizing can generate ozone. Ozone can cause irritation of eyes, nose and respiratory tract.

Chronic Toxicity: Frequent inhalation of fume/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. Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.

12	ECOLOGICAL INFORMATION
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Ecotoxicity: No data available.

Mobility: Not relevant, due to the form of the product.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available on bioaccumulation.

Other Adverse Effects: None known.

13	DISPOSAL CONSIDERATIONS
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General Information: Dispose waste and residues in accordance with applicable federal, state, and local regulations.

Disposal Methods: 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 reclaim or recycle, if practical.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14	TRANSPORT INFORMATION
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DOT Not regulated.

TDG Not regulated.

IATA Not regulated.

IMDG Not regulated.

15 REGULATORY INFORMATION

Canadian Controlled Products 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 Classification: D2A

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

Inventory Status

This product or all components are listed on the following inventory: DSL, TSCA

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): For metals, the stated Reportable Quantity (RQ) applies to particles smaller than 100 micrometers.

Chemical Name	RQ
Lead (Pb)	10 lbs
Manganese	-
Nickel	100 lbs
Phosphorus	1 lbs
Copper	5000 lbs
Chromium	5000 lbs

- : No reportable quantity.

SARA Title III

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Not regulated.

Section 311/312 (40 CFR 370):

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372):

Chemical Name	CAS-No.	Concentration
Chromium	7440-47-3	0 - 0.9%
Copper	7440-50-8	0.1 - 1%
Nickel	7440-02-0	0.03 - 0.75%
Manganese	7439-96-5	0.25 - 1.65%

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
Not regulated.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): Not regulated.

Drug Enforcement Act:

Drug Enforcement Administration (DEA). List 1(i), Precursor Chemicals (21 CFR 1310.02(a) and 1310.04(f)(1)): Phosphorus

TSCA:

TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.

TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated.

TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated.

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Lead (Pb); Nickel

Massachusetts Right-To-Know List: Chromium; Copper; Iron oxide**; Manganese; Nickel; Phosphorus

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated.

Minnesota Hazardous Substances List: Chromium; Copper; Iron oxide**; Manganese; Nickel

New Jersey Right-To-Know List: Chromium; Copper; Iron oxide**; Manganese; Nickel

Pennsylvania Right-To-Know List: Carbon; Chromium; Copper; Iron oxide**; Manganese; Nickel

Rhode Island Right-To-Know List: Chromium; Copper; Iron oxide**; Manganese; Nickel

16	OTHER INFORMATION
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HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	0	0	0	0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	2*	0	0	X

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe * - Chronic Health Effect

Personal Protection codes: X - Specialized Handling

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

General Information: Other manufacturing locations of New Millennium Building Systems are at 3565 US Highway 32N, Hope, AR 71801, Telephone: 870-777-8777; 1992 NW Bascom Norris Drive, Lake City, FL 32055, Telephone: 386-466-1300; 8200 Woolery Way, Fallon, NV, 89406, Telephone: 775-867-2130; 100 Diuguids Lane, Salem, VA 24153, Telephone: 540-389-0211; Carr. Panamericana

9920, Col. Puente Alto C.P. 32695, Ciudad Juarez Chihuahua, Mexico, Telephone: 915-298-5050.

Issue Date: 22-June-2011

Supersedes Date: 12-Sep-2007

SDS No.: 1007310

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.