



Including Wheatland Tube, Atlas Tube, Sharon Tube, Energex Tube and Picoma Divisions

JMC Steel Group Corporate Office

227 West Monroe Street
26th Floor
Chicago, IL 60606
Phone: (312) 275-1601

JMC Steel Group Business Units (include):

1. Pipe – Wheatland, PA and Sharon, PA
2. DOM – Wheatland, PA and Niles, OH
3. EnergeX Tube – Warren OH; Blytheville, AR; Thomasville, AL; Welland, ONT, CAN
4. HSS & Piling – Chicago, IL; Harrow, ONT, CAN; Plymouth, MI; Winnipeg, ONT, CAN
5. Electrical, Fence & Mechanical – Chicago, IL and Cambridge, OH

Dear Customer:

Enclosed is a JMC Steel Group Safety Data Sheet for the products that you purchase. It is the continuing policy of JMC Steel Group to provide to our customers, health, safety and environmental protection information that is appropriate for handling and utilizing our products.

These Safety Data Sheets contain information that is valuable to your employee health and safety program and may be required to be in your possession by the Federal Hazard Communication Standard or other right-to-know legislation. It is important that your facility hazard communication coordinator, industrial hygiene or safety personnel receives this information so that it can be communicated to those employees having contact with these products.

Addendum 2 lists the rust preventative or protective coatings that are applied to products requiring such treatment. This addendum is available upon request.

Hazard Communication Programs are of the utmost importance to JMC Steel Group. We believe this information will be very beneficial to your Hazard Communication Program and we welcome any inquiries regarding additional information that you may require.

Contact:
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Original Issue Date: 11/01/85

Revision Date:

6/05/90 Rev 2 2/05/99 Rev 5 9/26/03 Rev 8 12/19/05 Rev 11 11/21/14 Rev 14
8/24/92 Rev 3 6/28/99 Rev 6 4/13/05 Rev 9 10/05/07 Rev 12 02/06/15 Rev 15
6/15/95 Rev 4 11/08/01 Rev 7 9/21/05 Rev 10 3/11/11 Rev 13

EMERGENCY TELEPHONE NUMBER - Council Ave Plant - (724) 342-6851
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PRODUCT IDENTIFICATION

Product Name(s): CBW Pipe, ERW Pipe, Carbon Steel pipe, MLT, Mega-Flow, Mega-Thread, Schedule 10, Schedule 40, WLS, WST, GL, WT-40, WT-30, WT-20, Tubing, Casing, Line Pipe, Hollow Structural Sections (HSS), Pipe Piles, Mechanical Tubing

ASTM Standard(s): A53, A106, A135, A252, A795, A500, A501, A513, A589, A733, A795, A618, A865, A1085, F1043, F1083,
API Standard(s) 5L & 5CT;
UL Standard(s): 6, 6A, 797 & 1242; ANSI Standard(s) C80.1, C80.3, C80.5 & C.80.6

Common Names: Standard Pipe, Schedule 40, SureThread, Fence Pipe, Mechanical Tubing and Pipe, Schedule 10, Plumbing Pipe, Sprinkler Pipe, Water Pipe, Line Pipe, Gas Pipe, Steam Pipe, Extra Heavy Pipe, Schedule 80, R&D, Rigid Conduit, Dura Guard RMC, EMT, FasTrack Plus EMT, Color Check EMT, IMC, Aluminum Rigid Conduit, Electrical Fittings, Nipples & Couplings, Coupling Stock, Tubing, Casing, Line Pipe, Hollow Structural Sections (HSS), Pipe Piles, DOM, Seamless Pipe

1. COMPANY IDENTIFICATION

Manufacturer:
JMC Steel Group
227 west Monroe Street, 26th Floor
Chicago, IL 60606

Emergency Contact
Mike Ryan
724-342-6851 x 1587
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Base Metal, Alloying Elements & Metal Coatings

Ingredient Name	CAS Number	Percentage by wt.	OSHA PEL 1	ACGIH TLV 2
Base Metal (Steel):				
Iron	7439-89-6	>95	10 mg/m ³ - Iron oxide fume	5 mg/m ³ - Iron oxide dust and fume
Steel Alloying Elements:				
Aluminum	7429-90-5	< 0.070	15 mg/m ³ - as total dust 5 mg/m ³ - as respirable fraction	10 mg/m ³ - Metal Dust 5 mg/m ³ - Welding fume
Carbon	7440-44-0	< 0.46	15 mg/m ³ - as total dust (PNOR) 3 5 mg/m ³ - as respirable fraction (PNOR)	10 mg/m ³ - as inhalable fraction 4 (PNOS) 5 3 mg/m ³ - as respirable fraction 6 (PNOS)
Chromium	7440-47-3	< 1.10	1 mg/m ³ - Chromium metal	0.5 mg/m ³ - Chromium metal & Cr III compounds
Copper	7440-50-8	< 0.21	0.1 mg/m ³ - Fume (as Cu) 1 mg/m ³ - Dusts & mists (as Cu)	0.1 mg/m ³ - Fume 1 mg/m ³ - Dusts & mists (as Cu)
Manganese	7439-96-5	< 1.66	5 mg/m ³ (C) - Fume & Mn compounds	0.2 mg/m ³
Molybdenum	7439-98-7	< 0.25	15 mg/m ³ - as total Dust 5 mg/m ³ - as respirable fraction	10 mg/m ³ - Insoluble Compounds 5 mg/m ³ - Soluble Compounds
Nickel	7440-02-0	< 0.10	1 mg/m ³ - Metal & insoluble compounds (as Ni)	1.5 mg/m ³ - Elemental nickel (as Ni) 0.2 mg/m ³ - Insoluble compounds
Silicon	7440-21-3	< 0.35	15 mg/m ³ - as total dust 5 mg/m ³ - as respirable fraction	10 mg/m ³
Vanadium	7440-62-2	< .15	0.5 mg/m ³ - as respirable Dust 0.1 mg/m ³ - Fume	0.05 mg/m ³
Base Metal (Aluminum):				
Aluminum as Metal	7429-90-5	>90	15 mg/m ³ - as total dust 5 mg/m ³ - as respirable fraction	10 mg/m ³ - Metal Dust 5 mg/m ³ - Welding fume
Aluminum Alloying Elements:				
Zinc, Manganese & Silicon (Limits shown above and below)				
Metallic Coating – (Galvanized Product Only)				
Zinc	1314-13-2	<6.0	5 mg/m ³ - Dust – As Zinc Oxide 15 mg/m ³ - Fume - As Zinc Oxide	5 mg/m ³ 5 mg/m ³

* Varnish, Paint or Oil coating may be used: Listing of coatings used is available upon request (Addendum 2).

Notes:

- All commercial steel products contain small amounts of various elements in addition to those listed in the attached

Safety Data Sheet

SDS. These small quantities are frequently referred to as “trace” or “residual” elements that generally originate in the raw materials used. Steel products may contain the following trace or residual elements including typical percentages for the elements identified: boron (≤ 0.0005 max, typically 0.0001%), calcium (≤ 0.005 max, typically 0.0003%), columbium (≤ 0.15 max, typically 0.002%), molybdenum (≤ 0.6 max, typically 0.006%), phosphorous (≤ 0.1 max, typically 0.01%), sulfur (≤ 0.04 max, typically 0.007%), tin ($\leq .03$ max, typically 0.002%), titanium (≤ 0.15 max, typically 0.002%), and vanadium (≤ 0.15 max, typically 0.001%). Other trace elements not frequently identified, may include antimony, arsenic, cadmium, cobalt, lead, and zirconium.

- Percentages are expressed as typical ranges or maximum concentrations of the ingredients for the purpose of communicating the potential hazards of the product. Consult product specifications for specific composition information.
- OSHA (Occupational Health and Safety Administration) PELs (Permissible Exposure Limits) are 8-hour TWA (Time Weighted Average) concentrations unless otherwise noted. A (“C”) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted.
- TLV (Threshold Limit Values) established by ACGIH (the American Conference of Governmental Industrial Hygienists) are 8-hour TWA concentrations unless otherwise noted.
- PNOR (Particulates Not Otherwise Regulated) - All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by a limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction.
- Inhalable fraction - The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2009 TLVs® and BEIs® (Biological Exposure Indices) Appendix D, paragraph A
- PNOS (Particulates Not Otherwise Specified) - Particulates identified under the PNOS heading are “nuisance dusts” containing no asbestos and <1% crystalline silica. A TWA-TLV of 10 mg/m³ for inhalable particulate and 3 mg/m³ for respirable particulate has been recommended.
- Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2009 TLVs® and BEIs® Appendix D, paragraph C.

3. HAZARDS IDENTIFICATION

This formed solid metal product poses little or no immediate health or fire hazard. When product is subjected to welding, burning, melting, sawing, brazing, grinding or other similar processes, potentially hazardous airborne particulate and fumes may be generated. These operations should be performed in well-ventilated areas. Avoid inhalation of metal dusts and fumes. Iron or steel foreign bodies imbedded in the cornea of the eye will produce rust stains unless removed promptly. If appropriate, respiratory protection and other personal protective equipment should be used.

Primary Entry Routes: Semi-finished Alloy steel products in their usual physical form do not present an inhalation, ingestion or contact hazard; however, operations such as burning, welding, sawing, brazing, machining and grinding may result in the following effects if exposures exceed recommended limits as listed in Section 2. Steel surfaces may be treated with small amounts of corrosion resistant paints, epoxies, laminates, etc., generally applied at the customer’s request. Refer to the coating manufacturer’s MSDS for hazards associated with coatings.

Acute Effects:

Inhalation: Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as “metal fume fever”. Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. After excessive exposures, onset of symptoms present after a few hours and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese and copper have been associated with causing metal fume fever. Inhalation of chromium compounds may cause upper respiratory tract irritation. Molybdenum, nickel, and vanadium compounds, especially vanadium pentoxide, are respiratory tract irritants.

Eye: Particles of iron or iron compounds could become imbedded in the eye.

Skin: Skin contact with metallic fumes and dusts may cause physical abrasion. Chromium, molybdenum and vanadium compounds, especially vanadium pentoxide, are skin irritants. Exposure to nickel may cause contact and atopic dermatitis and allergic sensitization. Repeated or prolonged contact with chemical surface treatments or oil residue may cause skin irritation, dermatitis, ulceration or allergic reactions in sensitized individuals

Ingestion: Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of dust may cause nausea or vomiting.

Chronic Effects: Chronic inhalation of metallic fumes and dusts are associated with the following conditions:

IRON OXIDE: Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC (The International Agency for Research on Cancer).

ALUMINUM: Aluminum dusts/fines are a low health risk by inhalation and should be treated as a nuisance dust. Aluminum dust is a respiratory and eye irritant.

CARBON: Chronic inhalation of high concentrations to carbon may cause pulmonary disorders.

CHROMIUM: The health hazards associated with exposure to chromium are dependent upon its oxidation state. The metal form (chromium as it exists in this product) is of very low toxicity. The hexavalent form is very toxic. Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation, nosebleed, ulceration and perforation of the nasal septum. Industrial exposure to certain forms of hexavalent chromium has been related to an increased incidence of cancer. The National Toxicology Program (NTP) Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen.

COPPER: Inhalation of high concentrations of freshly formed oxide fumes and dusts of copper can cause metal fume fever. Chronic inhalation of copper dust has caused, in animals, hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, injury to lung cells and gastrointestinal symptoms.

MANGANESE: Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections.

MOLYBDENUM: Certain handling operations, such as burning and welding, may generate both insoluble molybdenum compounds (metal and molybdenum dioxide) and soluble molybdenum compounds (molybdenum trioxide). Molybdenum compounds generally exhibit a low order of toxicity with the trioxide the more toxic. However, some reports indicate that the dust of the molybdenum metal, molybdenum dioxide and molybdenum trioxide may cause eye, skin, nose and throat irritation in animals.

NICKEL: Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema and may cause nasal or lung cancer in humans. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2009 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens.

SILICON: Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.

VANADIUM: Excessive long term or repeated exposures to vanadium compounds, especially the pentoxide, may result in chronic pulmonary changes such as emphysema or bronchitis.

Long-term inhalation exposure to high concentrations (over-exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.

Carcinogenicity: IARC, NTP, and OSHA do not list steel products as carcinogens. IARC identifies nickel and certain nickel compounds and welding fumes as Group 2B carcinogens that are possibly carcinogenic to humans. ACGIH lists insoluble nickel compounds as confirmed human carcinogens. IARC lists chromium metal and trivalent chromium compounds as Group 3 carcinogens, not classifiable as to their human carcinogenicity. Hexavalent chromium compounds are listed by IARC as Group 1 carcinogens that are carcinogenic to humans. NTP Fourth Annual report on Carcinogens cites "certain Chromium compounds" as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

SARA Potential Hazard Categories: Delayed Chronic Health Hazard

4. FIRST AID MEASURES

Emergency First Aid Procedures:

Inhalation: For over-exposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Eye Contact: Flush with large amounts of clean water to remove particles. Seek medical attention if irritation persists.

Skin Contact: Not anticipated to pose a significant skin hazard. However, should dermatitis develop, wash affected area thoroughly with mild soap and water. If irritation or other symptoms develop, seek medical attention. If thermal burn has occurred, flush area with cold water and seek medical attention. If mechanical abrasion has occurred, seek medical attention.

Ingestion: Not a probable route of industrial exposure; however, if ingested, seek medical attention immediately.

5. FIRE AND EXPLOSION HAZARD DATA

Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other products.

6. ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Steel products in the solid state present no release hazard. No special [reactions are required for spills of bulk material. If large quantities of dust are spilled, remove by vacuuming or wet sweeping to prevent heavy concentrations of airborne dust.

Hazardous Materials Released: N/A

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and Federal requirements.

Disposal: Follow applicable Federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling Precautions: Operations with the potential for generating high concentrations of airborne particles should be evaluated and controlled as needed. Minimize generation of airborne dust and fume. Avoid breathing metal dust or fumes. Practice good housekeeping. Non-metallic coatings, i.e. oils, paints, epoxies, laminates, etc. may be applied (generally at the customer's request) to the surface of these products. Burning or welding on steel products with non-metallic coatings may produce emissions which may cause eye and respiratory tract irritation or other respiratory system effects. The possible presence of these coatings should be recognized and considered when evaluating potential employee health hazards and exposures during handling and welding or other dust/fume generating activities. Prolonged contact with non-metallic coating oils may cause skin irritation and should be avoided.

Storage Requirements: Store away from acids and incompatible materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations. When airborne emissions may occur due to further processing: (1) avoid breathing dust and fume, (2) evaluate potential employee exposure, (3) minimize generation of airborne emissions, (4) maintain surfaces free as practical of accumulated material, (5) use protective clothing as specified by an industrial hygienist or safety professional where exposure levels may be excessive, (6) do not smoke in work area, (7) wash hands before eating, drinking or smoking and after handling, (8) change contaminated clothing before leaving work premises.

Removal of surface coatings should be considered prior to welding or other fume generating activities.

Ventilation: Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: Do not use compressed air to clean-up accumulated material or dust. Minimize generation of airborne emissions.

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen.

Protective Clothing/Equipment: For operations, which result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, gloves and safety glasses to prevent skin and eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations. Protective gloves should be worn as required for welding, burning or handling operations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Appearance and Odor: Metallic Gray, Odorless

Odor Threshold: Not Applicable

Vapor Pressure: Not Applicable

Vapor Density (Air = 1): Not Applicable

Formula Weight: Not Applicable

Density: 7.85

Specific Gravity (H₂O = 1, at 4 °C): 7.6-7.8

pH: Not Applicable

Water Solubility: Insoluble

Other Solubilities: Not Applicable

Boiling Point: Not Applicable

Viscosity: Not Applicable

Refractive Index: Not Applicable

Surface Tension: Not Applicable

% Volatile: Not Applicable

Evaporation Rate: Not Applicable

Melting Point: Base Metal 1537.8°C, (2800 °F)

10. STABILITY AND REACTIVITY

Stability: Steel products are stable under normal storage and handling conditions.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

Conditions to Avoid: Avoid storage with strong acids or calcium hypochlorite. Molten metal may react violently with water.

Hazardous Decomposition Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other elements. If present, surface treatments such as corrosion-inhibiting oils, resin, or coatings on the product may yield noxious gases such as the oxides of carbon upon thermal oxidative decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicity Data:* No information is available for the product as a mixture. The possible presence of chemical surface treatments and oil coatings should be considered when evaluating potential employee health hazards and exposures during handling and welding or other fume generating activities.

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Eye Effects: Eye contact with the individual components may cause particulate irritation. Implantation of iron particles in guinea pig corneas have resulted in rust rings with corneal softening about rust ring.

Skin Effects: Not anticipated to pose significant skin hazards. Skin contact with the individual components may cause physical abrasion, irritation, dermatitis, ulcerations and sensitizations.

Chronic Effects: Refer to Section 3

Acute Inhalation Effects: Inhalation of the individual alloy components has been shown to cause various respiratory effects.

Acute Oral Effects: No Information Found (NIF)

Other: No LC50 or LD50 has been established for the mixture as a whole. Iron LD50: 30 g/kg oral (rat), Aluminum LD50: NIF, Carbon LD50: NIF, Chromium LDLo: 71 mg/kg GIT orl (human), Copper LDLo: 120 µg/kg GIT ipl (rat), Manganese LD50: 9 g/kg oral (rat), Molybdenum LDLo: 114 mg/kg ipr (rat), Nickel LDLo: 5 mg/kg orl (guinea pig), Silicon LD50: NIF, Vanadium LD50: 59 mg/kg scu (rabbit)

Carcinogenicity: Chromium and Nickel, Refer to Section 3

Mutagenicity: NIF

Teratogenicity: NIF

- See NIOSH, RTECS (NO7400000), for additional toxicity data on iron oxide, (BD1200000) for aluminum oxide, (FF5250000) for carbon, GB5425000) for chromium, (GL5325000) for copper, (OO9275000) for manganese, (QA4680000) for molybdenum, (QR5950000) for nickel, (WM0400000) for silicon, (YW2460000) for vanadium pentoxide

12. ECOLOGICAL INFORMATION

Ecotoxicity: No information found for the product as a whole. However, individual components of the product have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Environmental Fate: No Information Found (NIF)

Environmental Degradation: NIF

Soil Absorption/Mobility: No information found for the product as a whole. However, individual components of the product have been found to be absorbed by plants from soil.

13. DISPOSAL CONSIDERATION

Disposal: This material is considered to be a solid waste, not a hazardous waste. Follow applicable Federal, state, and local regulations for disposal of solid waste and airborne particulates accumulated during handling operations of the product. Waste steel products can be recycled for further use.

Disposal Regulatory Requirements: No Information Found (NIF)

Container Cleaning and Disposal: Follow applicable Federal, state and local regulations. Observe safe handling precautions.

14. TRANSPORT INFORMATION

DOT Transportation Data (49 CFR 172.101):

Carbon and Alloy Steels are not listed as hazardous substances under 49 CFR 172.101.

Shipping Name: Not Applicable

Shipping Symbols: Not

Applicable

Hazard Class: Not Applicable

ID No.: Not Applicable

Packing Group: Not Applicable

Label: Not Applicable

Special Provisions (172.102):

None

Packaging Authorizations

a) **Exceptions:** None

b) **Non-bulk Packaging:** Not Applicable

c) **Bulk Packaging:** Not Applicable

Quantity Limitations

a) **Passenger, Aircraft, or Railcar:** Not Applicable

b) **Cargo Aircraft Only:** Not Applicable

Vessel Stowage Requirements

a) **Vessel Stowage:** Not Applicable

b) **Other:** Not Applicable

15. REGULATORY INFORMATION

Regulatory Information: *The following listing of regulations relating to an ArcelorMittal USA Inc. product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Tables Z-1, Z-2 & Z-3): Steel products as a whole is not listed; however, individual components of the product are listed.

EPA Regulations:

RCRA: Chromium and Nickel are regulated under this act.

CERCLA Hazardous Substance (40 CFR 302.4): The product as a whole is not listed; however, individual components of the product are listed: Chromium, Copper, Manganese compounds, and Nickel are listed under SARA 302.

SARA 311/312 Codes: Delayed (chronic) health hazard.

SARA 313: Aluminum (fume or dust), Chromium, Copper, Manganese, and Nickel are subject to SARA 313 reporting requirements. Please also note that if you prepackage or otherwise redistribute this product to industrial customers, SARA 313 requires that a notice be sent to those customers.

Clean Water Act: Chromium, Copper and Nickel are Section 307 Priority Pollutants.

Safe Drinking Water Act: Aluminum, Chromium, Copper, Molybdenum, Nickel and Vanadium are regulated under this act.

State Regulations: The product as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations.

Pennsylvania Right to Know: Contains regulated material in the following categories:

- Hazardous Substances: Calcium, Molybdenum, and Silicon.
- Environmental Hazards: Aluminum, Chromium, Copper, Manganese, Nickel, and Vanadium.
- Special Hazard Substances: Chromium and Nickel

New Jersey Right to Know: Contains regulated material in the following categories:

- Environmental Hazardous Substance: Aluminum (fume or dust), Chromium, Copper, Manganese, Nickel, and Vanadium (fume or dust)
- Special Health Hazard Substances: Not regulated.

California Prop. 65: Nickel is a material known to cause cancer or reproductive toxicity.

Other Regulations: The product as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations.

WHMIS (Canadian): D2B Product Classification

16. OTHER INFORMATION

Prepared By: JMC Steel Group.

Hazard Rating Systems:

NFPA Code: 0-0-0 HMIS Code: 0-0-0 PPE: See Section 8

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	NIF	No Information Found
BEIs	Biological Exposure Indices	NIOSH	National Institute for Occupational Safety and Health
CAS	Chemical Abstracts Service	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	ORC	Organization Resources Counselors
CFR	Code of Federal Regulations	OSHA	Occupational Safety and Health Administration
CNS	Central Nervous System	PEL	Permissible Exposure Limit
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	PNOR	Particulate Not Otherwise Regulated
HMIS	Hazardous Materials Identification System	PNOC	Particulate Not Otherwise Classified
IARC	International Agency for Research on Cancer	PPE	Personal Protective Equipment
LC50	Median Lethal Concentration	ppm	parts per million



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LD50	Median Lethal Dose	RCRA	Resource Conservation and Recovery Act
LD Lo	Lowest Dose to have killed animals or humans	RTECS	Registry of Toxic Effects of Chemical Substances
LEL	Lower Explosive Limit	SARA	Superfund Amendment and Reauthorization Act
µg/m3	microgram per cubic meter of air	SCBA	Self-contained Breathing Apparatus
mg/m3	milligram per cubic meter of air	STEL	Short-term Exposure Limit
mppcf	million particles per cubic foot	TLV	Threshold Limit Value
MSDS	Material Safety Data Sheet	TWA	Time-weighted Average
MSHA	Mine Safety and Health Administration	UEL	Upper Explosive Limit
NFPA	National Fire Protection Association		

Disclaimer: This information is taken from sources or based upon data believed to be reliable. Our objective in sending this information is to help you protect the health and safety of your personnel and to comply with the OSHA Hazard Communication Standard and Title III of the Superfund Amendment and Reauthorization Act of 1986. JMC Steel Group. makes no warranty as to the absolute correctness, completeness, or sufficiency of any of the foregoing, or any additional, or other measures that may not be required under particular conditions. JMC STEEL GROUP. MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE.

LABEL

Carbon and Alloy

GENERAL HAZARD STATEMENT: This formed solid product poses little or no immediate health or fire hazard. When product is subjected to welding, burning, melting, sawing, brazing, grinding or other similar processes, potentially hazardous airborne particulate and fumes may be generated; these operations should be performed in well-ventilated areas. Avoid inhalation of metal dusts and fumes. Iron or steel foreign bodies imbedded in the cornea of the eye will produce rust stains unless removed promptly.

If appropriate, respiratory protection and other personal protective equipment should be used.

CAUTION

DUST OR FUME GENERATED DURING WELDING OR OTHER PROCESSING MAY CAUSE:

RESPIRATORY TRACT, SKIN, AND EYE IRRITATION AND/OR SENSITIZATION, AND MAY CAUSE METAL FUME FEVER.

CANCER HAZARD (CONTAINS NICKEL AND CHROMIUM*). RISKS WILL DEPEND UPON TYPE OF PROCESSING. EFFECTS WILL DEPEND ON DURATION AND LEVEL OF EXPOSURE.

Consult MSDS for more information

** The chromium metal in these alloys is in the zero valence state. As such, chromium metal does not present any unusual health hazard. However, welding, torch cutting, brazing or perhaps grinding on this product may generate airborne concentrations of hexavalent chromium (Cr+6), metallic nickel and nickel alloys. The International Agency for Research on Cancer classified hexavalent chromium as a category 1 confirmed human carcinogen and metallic nickel and alloys as a category 2B possibly carcinogenic to humans.*

PRECAUTIONS: Avoid breathing or contact with dust or fume. Adequate ventilation is required while welding burning, melting, cutting, brazing, grinding, and machining. Wear appropriate personal protective equipment.



FIRST AID:

INHALATION - For over-exposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

EYE CONTACT - Flush with large amounts of clean water to remove particles. Seek medical attention if irritation persists.

SKIN CONTACT - Not anticipated to pose a significant skin hazard. If irritation or other symptoms develop, seek medical attention. Wash affected areas with soap or mild detergent and water. If thermal burn has occurred, flush area with cold water and seek medical attention.

INGESTION - Not a probable route of industrial exposure; however, if ingested, obtain medical advice.

JMC Steel Group

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General Information: 724-342-6851

Original Issue Date: 11/01/1985

Revised: 02/06/2015