

SAFETY DATA SHEET

Galvanized carbon steel wire St-Patrick



Section 1. Identification

GHS product identifier : Galvanized carbon steel wire St-Patrick
Product code : Not available.
Other means of identification : Not available.
Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Not available.

Supplier's details : ArcelorMittal Long Products Canada
3900, Aciéries Street
Contrecoeur (Québec) Canada
J0L 1C0

Emergency telephone number (with hours of operation) : (450) 587-5555
24/7

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Hazards not otherwise classified : None known.



Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

Ingredient name	%	CAS number
Zinc powder - zinc dust (stabilized)	5 - 10	7440-66-6
Manganese	1 - 5	7439-96-5
Chromium	0.1 - 1	7440-47-3
Nickel	0.1 - 1	7440-02-0

United States: The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

Canada: The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with the amended HPR as of April 2018.

Zinc. Chemically passivated with a water or mineral base wax. Trace quantity of lead can be present in the zinc coating.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Not applicable.
Inhalation : Not applicable.
Skin contact : Not applicable.
Ingestion : Not applicable.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Welding or burning of material will generate metal fumes. Overexposure to fumes may cause a flu-like condition (chills, nausea) called metal fume fever. Eye irritation may result from contact with coating.

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Not applicable.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Not applicable.

Methods and materials for containment and cleaning up

- Small spill** : Not applicable.
- Large spill** : Not applicable.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Do not store in unlabeled containers.

Section 8. Exposure controls/personal protection

Above OEL values are only applicable when the product becomes dusty in a given process.

Control parameters

United States

Occupational exposure limits

Ingredient name	Exposure limits
Zinc powder - zinc dust (stabilized) Manganese	None. NIOSH REL (United States, 10/2016). TWA: 1 mg/m ³ , (as Mn) 10 hours. Form: Fertilizer and/or industrial use. STEL: 3 mg/m ³ , (as Mn) 15 minutes. Form: Fertilizer and/or industrial use.
Chromium	OSHA PEL (United States, 6/2016). CEIL: 5 mg/m ³ , (as Mn) Form: Fertilizer and/or industrial use. ACGIH TLV (United States, 3/2017). TWA: 0.1 mg/m ³ , (as Mn) 8 hours. Form: Inhalable fraction TWA: 0.02 mg/m ³ , (as Mn) 8 hours. Form: Respirable fraction
Nickel	ACGIH TLV (United States, 3/2017). TWA: 0.5 mg/m ³ , (measured as Cr) 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.5 mg/m ³ 8 hours. OSHA PEL (United States, 6/2016). TWA: 1 mg/m ³ , (as Cr) 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.015 mg/m ³ , (as Ni) 10 hours. ACGIH TLV (United States, 3/2017). TWA: 1.5 mg/m ³ 8 hours. Form: Inhalable fraction OSHA PEL (United States, 6/2016). TWA: 1 mg/m ³ , (as Ni) 8 hours.

Canada

Occupational exposure limits

Ingredient name	Exposure limits
Manganese	CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 0.2 mg/m ³ , (as Mn) 8 hours. CA British Columbia Provincial (Canada, 7/2016). TWA: 0.2 mg/m ³ , (as Mn) 8 hours. CA Ontario Provincial (Canada, 7/2015). TWA: 0.2 mg/m ³ , (as Mn) 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 0.6 mg/m ³ , (measured as Mn) 15 minutes. TWA: 0.2 mg/m ³ , (measured as Mn) 8 hours.
Chromium	CA Quebec Provincial (Canada, 1/2014). TWAEV: 0.2 mg/m ³ , (as Mn) 8 hours. Form: Total dust CA Ontario Provincial (Canada, 7/2015). TWA: 0.5 mg/m ³ , (Cr) 8 hours. Form: Inorganic CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 0.5 mg/m ³ , (Cr) 8 hours. CA British Columbia Provincial (Canada, 7/2016). TWA: 0.5 mg/m ³ 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 0.5 mg/m ³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1.5 mg/m ³ , (Cr) 15 minutes. TWA: 0.5 mg/m ³ , (Cr) 8 hours.
Nickel	CA Ontario Provincial (Canada, 7/2015). TWA: 1 mg/m ³ 8 hours. Form: Inhalable fraction CA Alberta Provincial (Canada, 4/2009). 8 hrs OEL: 1.5 mg/m ³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 3 mg/m ³ 15 minutes. Form: Inhalable fraction TWA: 1.5 mg/m ³ 8 hours. Form: Inhalable fraction CA British Columbia Provincial (Canada, 7/2016). TWA: 0.05 mg/m ³ , (Ni) 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 1 mg/m ³ 8 hours.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Solid.
- Color** : Silver/Grey metallic.
- Odor** : Odorless.
- Odor threshold** : Not applicable.
- pH** : Not applicable.
- Melting point** : 1530°C (2786°F)
- Boiling point** : 2860°C (5180°F)
- Flash point** : Not applicable.
- Evaporation rate** : Not applicable.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not applicable.
- Vapor pressure** : Not available.
- Vapor density** : Not applicable.
- Relative density** : 7.6 to 7.8
- Solubility** : Insoluble in water.

Section 9. Physical and chemical properties

- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : Not applicable.
- Viscosity** : Not applicable.
- Flow time (ISO 2431)** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials and acids.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Manganese	LD50 Oral	Rat	9 g/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Manganese	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

Classification

Product/ingredient name	OSHA	IARC	NTP
Chromium	-	3	-
Nickel	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

There is no data available.

Specific target organ toxicity (repeated exposure)

Name	Category	Target organs
Nickel	Category 1	Not determined

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Fumes inhaled during welding, burning or cutting, repetitive contact with skin or eyes.

Potential acute health effects

Welding or burning of material will generate metal fumes. Overexposure to fumes may cause a flu-like condition (chills, nausea) called metal fume fever. Eye irritation may result from contact with coating.

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

Welding, burning or grinding of metal will generate metal fume or dust. Prolonged inhalation overexposure to dust or fume may result in the accumulation of iron oxide in the lung, a condition (siderosis) with few or no symptoms. Coating materials may cause skin irritation and/or dermatitis upon prolonged contact.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure	
Zinc powder - zinc dust (stabilized)	Acute EC50 106 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours	
	Acute EC50 10000 µg/L Fresh water	Aquatic plants - Lemna minor	4 days	
	Acute IC50 65 µg/L Marine water	Algae - Nitzschia closterium - Exponential growth phase	4 days	
	Acute LC50 65 µg/L Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours	
	Acute LC50 68 µg/L Fresh water	Daphnia - Daphnia magna	48 hours	
	Acute LC50 12.21 µg/L Marine water	Fish - Periophthalmus waltoni - Adult	96 hours	
	Chronic EC10 27.3 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours	
	Chronic EC10 59.2 µg/L Fresh water	Daphnia - Daphnia magna	21 days	
	Chronic NOEC 9 mg/L Fresh water	Aquatic plants - Ceratophyllum demersum	3 days	
	Chronic NOEC 178 µg/L Marine water	Crustaceans - Palaemon elegans	21 days	
	Chronic NOEC 2.6 µg/L Fresh water	Fish - Cyprinus carpio	4 weeks	
	Manganese	Acute LC50 354 mg/L Fresh water	Fish - Poecilia reticulata	96 hours
		Acute EC50 0.2 ppm Marine water	Algae - Bacillariophyta	72 hours
	Chromium	Acute EC50 5 ppm Marine water	Algae - Macrocystis pyrifera - Young	4 days
Acute EC50 35000 µg/L Fresh water		Aquatic plants - Lemna minor	4 days	
Acute LC50 45 µg/L Fresh water		Crustaceans - Ceriodaphnia reticulata	48 hours	
Acute LC50 22 µg/L Fresh water		Daphnia - Daphnia magna	48 hours	
Acute LC50 13.9 ppm Fresh water		Fish - Anguilla rostrata	96 hours	
Chronic NOEC 50 mg/L Marine water		Algae - Glenodinium halli	72 hours	
Chronic NOEC 0.19 µg/L Fresh water		Fish - Cyprinus carpio	4 weeks	
Nickel		Chronic NOEC 100 mg/L Marine water	Algae - Glenodinium halli	72 hours
		Chronic NOEC 13 µg/L Fresh water	Fish - Cyprinus carpio	4 weeks

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil



Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Incineration or landfill should only be considered when recycling is not feasible.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN3077	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc powder - zinc dust (stabilized), Nickel)	-	-	-
Transport hazard class(es)	9  	-	-	-
Packing group	III	-	-	-
Environmental hazards	Yes.	No.	No.	No.

AERG : 171

DOT-RQ Details : Zinc powder - zinc dust (stabilized) 1000 lbs / 454 kg
 Nickel 100 lbs / 45.4 kg

Special precautions for user : Not applicable.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
 United States inventory (TSCA 8b): All components are listed or exempted.
 Clean Water Act (CWA) 307: Zinc powder - zinc dust (stabilized); Chromium; Nickel

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Section 15. Regulatory information

Name	Classification
Manganese	SUBSTANCES AND MIXTURES, WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Nickel	

SARA 313

	Product name	CAS number
Form R - Reporting requirements	Zinc powder - zinc dust (stabilized) Manganese Nickel	7440-66-6 7439-96-5 7440-02-0
Supplier notification	Zinc powder - zinc dust (stabilized) Manganese Nickel	7440-66-6 7439-96-5 7440-02-0

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: Zinc powder - zinc dust (stabilized); Manganese
- New York** : The following components are listed: Zinc powder - zinc dust (stabilized); Nickel
- New Jersey** : The following components are listed: Zinc powder - zinc dust (stabilized); Manganese; Nickel
- Pennsylvania** : The following components are listed: Zinc powder - zinc dust (stabilized); Manganese; Nickel

California Prop. 65

⚠ WARNING: This product can expose you to Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Canada

Canadian lists

- Canadian NPRI** : The following components are listed: Zinc powder - zinc dust (stabilized); Manganese
- CEPA Toxic substances** : None of the components are listed.
- Canada inventory (DSL NDSL)** : All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

- Date of issue mm/dd/yyyy** : 11/30/2018
- Date of previous issue** : 05/30/2018
- Version** : 2.1
- Prepared by** : KMK Regulatory Services Inc.

Notice to reader

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