

MATERIAL SAFETY DATA SHEET

Manufacturer / Supplier: U. S. Steel Canada – Hamilton Works 530 Gage Avenue North P.O. Box 450 Hamilton, Ontario, Canada L8L 7W9 Telephone: (905) 577-8335 Ext. 3119 (for updates & copies) Emergency: (905) 527-8335 Ext. 2268	
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SECTION I – MATERIAL IDENTIFICATION AND USE

Material:	Galvanized Carbon Steel and Galvanized High-Strength Low Alloy (HSLA) Steel
WHMIS Class:	D2A
Chemical Name:	Not applicable
Chemical Family:	Steel
Chemical Formula Mixture:	Not applicable
Molecular Weight:	Not applicable
Trade Name and Synonyms:	Not applicable
Material Use:	Production of steel products

SECTION II – HAZARDOUS INGREDIENTS OF MATERIAL

INGREDIENT	% WEIGHT	CAS NO.	TLV (ACGIH)	OEL (ONT)	LD ₅₀ (oral rat)	LC ₅₀ (rat)
Iron	>89	7439-89-6	5 mg/m ³	10 mg/m ³	30 g/kg	
Manganese	1.81	7439-96-5	0.2 mg/m ³	5 mg/m ³ (C)	9 g/kg	
Nickel	0.5	7440-02-0	1.5 mg/m ³	1 mg/m ³	Not available	
Chromium	0.6	7440-47-3	0.5 mg/m ³	1 mg/m ³	Not available	
Zinc	10	7440-66-6	5 mg/m ³	5 mg/m ³	Not available	

NOTE: The above ingredient list identifies those components which meet the regulated reporting criteria. Concentrations represent a maximum for all the grades within a category of steel products, and must NOT be interpreted as a specification for a particular grade. All ingredients are preregistered on the CEPA domestic substances list. Galvanized steel with an oil coating meets the CONEG requirements.

COATING: Zinc coating may be chemically passivated with a hexavalent chromium compound (maximum 0.022 g/m² per side) or have oil coating (maximum. 2.2 g/m² per side) or mill-applied lubricant (maximum 4.3 g/m² per side).

SECTION III – PHYSICAL DATA

Physical State:	Solid
Odour and Appearance:	Silver/grey metallic (steel)
Odour Threshold:	Not applicable
Specific Gravity:	7.6 - 7.8
Vapour Pressure (mm) :	Not applicable
Vapour Density (Air = 1):	Not applicable
Evaporation Rate:	Not applicable
Boiling Point (°C):	Not applicable
Freezing / Melting Point (°C):	1530°C (steel)
Solubility in Water (20°C):	Not applicable
% Volatile (by volume):	Not applicable
pH:	Not applicable
Coefficient of Water / Oil Distribution:	Not applicable

PRODUCT:**GALVANIZED CARBON STEEL
& GALVANIZED HSLA STEEL****SECTION IV – FIRE AND EXPLOSION HAZARD OF MATERIAL**

Flammability:	Not flammable
Means of Extinction:	Not applicable
Special Procedures:	Not applicable
Flashpoint (°C) and Method:	Not applicable
Upper Explosion Limit (% by volume):	Not applicable
Lower Explosion Limit (% by volume):	Not applicable
Auto Ignition Temperature (°C):	Not applicable
Hazardous Combustion Products:	Not applicable
Explosion Data – Sensitivity to Mechanical Impact:	Not applicable
Sensitivity to Static Discharge:	Not applicable

SECTION V – REACTIVITY DATA

Chemical Stability:	Yes
Incompatibility to Other Substances:	Not applicable
Conditions to Avoid:	Contact with mineral acids will release hydrogen gas.
Hazardous Decomposition Products:	Thermal degradation of coating material (if any) may produce irritating hydrocarbons.

SECTION VI – TOXICOLOGICAL PROPERTIES OF PRODUCT

Effects of Acute Exposure to Product:	Steel in its natural state has no acute effect from exposure. Eye irritation may result from contact with coating. Welding or burning of material will generate metal fumes. Inhalation overexposure to fumes may cause a flu-like condition (e.g. chills, nausea) called metal fume fever.
Effects of Chronic Exposure to Product:	Steel in its natural state has no chronic exposure effect. Coating materials may cause skin irritation and/or dermatitis upon prolonged contact. Welding, burning or grinding 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.
Sensitization to Product:	No known effect
Synergistic Materials:	No known effect
Carcinogenicity:	Certain nickel and chromium compounds have been listed by IARC as nasal and lung carcinogens
Reproductive Effects:	No known effect
Teratogenicity:	No known effect
Mutagenicity:	No known effect

SECTION VII – PREVENTATIVE MEASURES

Personal Protective Equipment:	Personal protective equipment required is dependent upon the process or operation being performed on the material (e.g. burning, welding). Each operation must be addressed for suitable protective equipment required.
Gloves:	Leather-faced or equivalent
Eye (specify):	Safety glasses or faceshield as appropriate
Footwear (specify):	Safety shoes or boots where required
Other (specify):	Barrier cream may be used when handling
Respiratory:	NIOSH-approved respiratory protection where applicable
Storage:	Not available
Engineering Controls, e.g. ventilation, enclosed process (specify):	General or local ventilation during welding, burning or grinding.
Leak and Spill Procedure:	Not applicable
Waste Disposal:	Not applicable
TDG Classification:	Not regulated

PRODUCT:**GALVANIZED CARBON STEEL
& GALVANIZED HSLA STEEL****SECTION VIII – FIRST-AID MEASURES**

Skin:	Wash affected area with soap and water. Seek medical attention if irritation persists.
Eye:	For irritation from any coating material, flush eyes with plenty of water while holding eyelids open. Seek medical attention if irritation persists.
Inhalation:	For overexposure to metal fumes, remove to fresh air. Seek medical attention for adverse symptoms.
Ingestion:	Not applicable

SECTION IX – PREPARATION DATE OF MSDS

Prepared by: C. D. Cummins Safety & Industrial Hygiene Department	Phone Number: (905) 527-8335 Ext. 3783	Date: 2008-05-08	Revision No.: 11
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