

# Material Safety Data Sheet

Steel Structural Systems  
150 Rochester Drive  
Louisville, KY 40214

## Section 1 – Chemical Product and Company Identification

Product/Chemical Name: Galvanize and Galvanneal Steel Sheet/Strip

Chemical Family: Steel

## Section 2 – Ingredients

Ingredient Name	CAS Number	Percentage by wt.	OSHA PEL	ACGIH TLV
Base Metal				
Iron	7439-89-6	97-99.9	10 mg/m3 - Iron oxide fume	5 mg/m3 - Iron oxide dust and fume
Aluminum	7429-90-5	0.01-0.5	15 mg/m3 - Total dust	10 mg/m3 - Metal Dust
			5 mg/m3 - Respirable fraction	5 mg/m3 - Welding fume
Boron	7440-42-8	≤0.003 max.	15 mg/m3 - Calcium oxide	10 mg/m3 - Boron oxide
Calcium	7440-70-2	≤0.005 max.	5 mg/m3 - Calcium Oxide	2 mg/m3 - Calcium oxide
Carbon	7440-44-0	≤0.6 max.	15 mg/m3 - Total dust	10 mg/m3 - Inhalable fraction
			5 mg/m3 - Respirable fraction	3mg/m3 - Respirable fraction
Chromium	7440-47-3	≤0.5 max	1 mg/m3 - Chromium metal	0.5 mg/m3 - Chromium metal & Cr III compounds
Columbium	7440-03-1	≤0.15 max	15 mg/m3 - Total dust	10 mg/m3 - Inhalable fraction
			5 mg/m3 - Respirable fraction	3 mg/m3 - Respirable fraction
Copper	7440-50-8	≤0.4 max	0.1 mg/m3 - Fume (as Cu)	0.1 mg/m3 - Fume
			1 mg/m3 - Dusts & mists (as Cu)	1 mg/m3 - Dusts & mists (as Cu)
Manganese	7439-96-5	0.05-2.0	5 mg/m3 ( C ) - Fume & Mn compounds	0.2 mg/m3
Molybdenum	7439-98-7	≤0.25 max.	15mg/m3 - Total dust (as Mo)	10 mg/m3 -Metal & insoluble compounds (Inhalable fraction)
				3 mg/m3 - Metal & insoluble fraction (Respirable fraction)
Nickel	7440-02-0	≤0.3 max.	1 mg/m3 -Metal & insoluble compounds (as Ni)	1.5 mg/m3 - Elemental nickel (as Ni) 0.2 mg/m3 - Insoluble compounds (NOS)
Phosphorus	7723-14-0	≤0.1 max.	0.1 mg/m3	0.1 mg/m3
Silicon	7440-21-3	≤1.00 max.	15 mg/m3 - Total dust	10 mg/m3 - Inhalable fraction
			5 mg/m3 - Respirable fraction	3 mg/m3 - Respirable fraction
Sulfur	7704-34-9	≤0.04 max.	15 mg/m3 - Total dust	10 mg/m3 - Inhalable fraction
			5 mg/m3 - Respirable fraction	3 mg/m3 - Respirable fraction
Tin	7440-31-5	≤0.01 max.	2 mg/m3 - Tin metal (as Sn)	2 mg/m3 - Inorganic compounds (except oxides)(as Sn)
Titanium	7440-32-6	≤0.15 max.	15mg/m3 - Total dust	10mg/m3 (Titanium dioxide)
			5 mg/m3 - Respirable fraction	
Vanadium	7440-62-2	≤0.15 max.	0.5 mg/m3 ( C ) - Respirable fraction as V2O5	0.05 mg/m3 - Dust of fume (as V2O5)
			0.1 mg/m3 ( C ) - Fume (as V2O5)	
Metallic Coating				
Zinc Galvanize (GI) Galvanneal (GA)	7440-66-6		5 mg/m3 - Fume	5 mg/m3 - Fume
		GI 99 min.	15 mg/m3 - Total dust	10 mg/m3 - Fume (STEL)
		GA 85 min.	5 mg/m3 - Respirable fraction	10 mg/m3 - Dust

### **Section 3 – Physical Data**

MELTING POINT

BASE METAL: 2750° F

APPEARANCE AND ODOR: Gray -black with metallic luster. Odorless.

### **Section 4 – Fire and Explosion Hazard Data**

STEEL PRODUCTS IN THE SOLID STATE PRESENT NO FIRE OR EXPLOSION HAZARD.

### **Section 5 –Health Hazard Data**

Stable under normal conditions of use, storage and transport. Will react with strong acid to liberate hydrogen.

At temperatures above the melting point of the coating, may liberate zinc fumes.

NOTE: Steel products, under normal conditions, do not present an inhalation, ingestion or contact health hazard. However, operations such as burning, welding, sawing, brazing grinding, and possibly machining, etc., which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates, may present health hazards.

#### **EFFECTS OF OVEREXPOSURE:**

Chronic inhalation of high concentrations of iron oxide fumes or dusts may lead to a 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.

The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, Lead, and/or Zinc in the respirable particle size range can cause an influenza-like illness termed 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.

EMERGENCY AND FIRST AID PROCEDURES for overexposure to airborne fumes and particulates:

Remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxy gen as indicated. Seek medical attention promptly.

Treat metal fume fever by bed rest, and administer a pain and fever reducing medication.

### **Section 6 – Reactivity Data**

Stable under normal conditions of use, storage and transport. Will react with strong acid to liberate hydrogen.

At temperatures above the melting point of the coating, may liberate zinc fumes.

### **Section 7 – Spill or Leak Procedures**

NOT APPLICABLE TO STEEL IN THE SOLID STATE.

### **Section 8 - Special Protection Information**

RESPIRATORY: NIOSH/MSHA - approved dust and fume respirators should be used to avoid excess inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

SKIN: Protective gloves should be worn as required for welding, burning, or handling operations.

EYE: Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding, or machining operations.

VENTILATION: Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding, or machining to prevent excessive dust or fume exposure.

#### OTHER PROTECTIVE EQUIPMENT

Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

### **Section 9 – Special Precautions**

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

#### OTHER COMMENTS:

No additional comments are believed to be necessary for this product.

THIS INFORMATION IS TAKEN FROM SOURCES OR BASED UPON DATA BELIEVED TO BE RELIABLE. HOWEVER, STEEL STRUCTURAL SYSTEMS MAKES NO WARRANTY AS TO THE ABSOLUTE CORRECTNESS OR SUFFICIENCY OF ANY OF THE FOREGOING OR THAT ADDITIONAL OR OTHER MEASURES MAY NOT BE REQUIRED UNDER PARTICULAR CONDITIONS.