

**MATERIAL SAFETY DATA SHEET  
STEEL PRODUCTS**

ORIGINAL ISSUE: 1998  
REVISED:

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<b>I. Identification</b>	Information & Emergency Telephone No. (219) 868-8000 Ext. 177
Product Name: <b>Galvanized Rolled Steel</b>	Manufacturer: <b>Steel Dynamics, Inc.</b> 4500 CR 59 Butler, IN 46721
Common Name(S): Same	
Cas No:	

**II. Ingredients And Recommended Occupational Exposure Limits**

*Note: Steel Products Under Normal Conditions Do Not Present An Inhalation, Ingestion Or Contact Health Hazard (See Section Vi).*

Base Metal Alloying Elements And Metallic Coatings	%Weight	Exposure Limits	
		OSHA PEL	ACGIH TLV
Base Metal: Iron (1309-37-1) Alloying Elements:	Balance	Dust & Fume 10mg/M3	5mg/M3(June)
Carbon 7440-44-0	.01/75	Total Dust-15mg/M3 Respirable 5mg/M3	10mg/M3
*Manganese 7439-96-5	15/1.75	1mg/M3 (Fume) 3mg/M3(Stel)(Fume)	5mg/M3(Dust) 1mg/M3(Fume) 3mg/M3 (Stel) (Fume)
Phosphorus 7723-14-0	0/15	.1mg/M3	.1 MG/M3
Silicon 7440-21-3	0/50	Total Dust 10mg/M3 Respirable Fraction 5mg/M3 Welding Fume 5mg/M3	10mg/M3  (Fume)
Trace Elements: Sulfur 7704-34-9	0/50	Total Dust 15mg/M3 Respirable Fraction 5mg/M3	10mg/M3
*Copper 7440-50-8	0/50	Fume cu) .1mg/M3 Dust/Mist(cu)1mg/M3	10mg/M3 .2mg/M3(Fume) 1mg/M3
*Nickel 7440-02-0	0/20	1mg/M3	1mg/M3
*Chromium 7440-47-3	0/30	Chromium Compound (Ii& Iii As Cu)5mg/M3 Chromium Metal 1mg/M3	.5mg/M3 .05mg/M3(crVI)
Molybdenum 7439-98-7	0/10	5mg/M3	10mg/M3

Base Metal Alloying Elements And Metallic Coatings	%Weight	Exposure Limits	
		OSHA PEL	ACGIH TLV
Zinc 7440-66-6	Balance	5mg/M3	5mg/M3 (Fume)
*Antimony 7440-36-6	<0/02.	5mg/M3	.5mg/M3
Aluminum 7429-90-5	0/20	Total Dust 15mg/M3 Respirable Fraction & Welding Fume 5mg/M3	10mg/M3(Dust) 5mg/M3(Welding Fume)

\*Oil Coatings May Be Used. MSDS's For A Specific Coating Are Available Upon Request.

\*\* Chrome Coatings May Be Used. MSDS's For A Specific Coating Are Available Upon Request

Note: In Its Manufactured And Shipped State This Is Considered Non-Hazardous. Processing, However, May Generate Fumes And Particulate Matter.

\* Designated Toxic Chemicals Contained In This Product Are Subject To The Reporting Requirements Of Section 313 Of The Emergency Planning And Community Right To Know Act Of 1986 (40CFR 372).

\* If This Product Is Re-Distributed Notification Must Be Supplied.

### III. Physical Data:

Melting Point: 2750 Appearance And Odor: Metallic Gray / No Odor

### IV. Fire And Explosion Hazard Data

Steel Products In The Solid State Present No Fire Or Explosion Hazard.

Unusual Fire And Explosion Hazards - At Temperatures Above The Melting Point May Liberate Fumes Of Iron, Nickel, And Zinc Oxide.

### V. 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, May Liberate Fumes Containing Oxides Of Iron And Alloying Elements.

**VI. Health Hazard Data:****Major Exposure Hazard**

- Inhalation       Skin Contact       Eye Contact       Ingestion

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 Oxygen As Indicated. Seek Medical Attention Promptly.

Treat Metal Fume Fever By Bed Rest, And Administer A Pain And Fever Reducing Medication.

**VII. Spill Or Leak Procedures**

Not Applicable To Steel In The Solid State.

Waste Disposal Method: Metals May Be Reclaimed. Dispose Of In A Land Fill In Accordance With All Local, State And Federal Regulations.

**VIII. Special Protection Information**

**Respiratory:** Niosh/Msha-Approved Dust And Fume Respirators Should Be Used To Avoid Excessive 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.

**IX. 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:**

Medical Conditions Aggravated By 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.

Prepared by: Jan Conwell, Safety Director  
For: STEEL DYNAMICS, INC.  
Updated: 8/21/98

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<b>I. Identification</b>	Information & Emergency Telephone No. (219) 868-8000 Ext. 177
Product Name: Hot or Cold Rolled Carbon Steel	Manufacturer:
Common Name(S): Same	Steel Dynamics, Inc.
Cas No:	4500 CR 59 Butler, IN 46721

**II. Ingredients And Recommended Occupational Exposure Limits**

*Note: Steel Products Under Normal Conditions Do Not Present An Inhalation, Ingestion Or Contact Health Hazard (See Section VI).*

Base Metal Alloying Elements And Metallic Coatings	%Weight	Exposure Limits	
		OSHA PELI	ACGIH TLV
<b>Base Metal:</b>			
Iron (1309-37-1)	Balance	Dust & Fume 10mg/M3	5mg/M3(June)
<b>Alloying Elements:</b>			
Carbon 7440-44-0	.01/.75	Total Dust-15mg/M3 Respirable 5mg/M3	10mg/M3
*Manganese 7439-96-5 .	0.15/1.75	1mg/M3 (Fume) 3mg/M3(STEL)(Fume)	5mg/M3(Dust) 1mg/M3(Fume) 3mg/M3 (STEL) (Fume)
Phosphorus 7723-14-0	0/.15	.1mg/M3	.1 MG/M3
Silicon 7440-21-3	0/.50	Total Dust 10mg/M3 Respirable Fraction 5mg/M3 Welding Fume 5mg/M3	10mg/M3  (Fume)
<b>Trace Elements:</b>			
Sulfur 7704-34-9	0/.50	Total Dust 15mg/M3 Respirable Fraction 5mg/M3	10mg/M3  10mg/M3
*Copper 7440-50-8	0/.50	Fume(cu) .1mg/M3 Dust/Mist(cu)1mg/M3	.2mg/M3(Fume) 1mg/M3
*Nickel 7440-02-0	0/.30	1mg/M3	1mg/M3
*Chromium 7440-47-3	0/.50	Chromium Compound (II & III As cu)5mg/M3 Chromium Metal 1mg/M3	.5mg/M3 .05mg/M3(crVI)
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Base Metal Alloying Elements And Metallic Coatings	%Weight	Exposure Limits	
		OSHA PEL	ACGIH TLV
Zinc 7440-66-6	.005/010	5mg/M3	5mg/M3 (Fume)
*Antimony 7440-36-6	<0/02	5mg/M3	.5mg/M3
Aluminum 7429-90-5	0/30	Total Dust 15mg/M3 Respirable Fraction & Welding Fume 5mg/M3	10mg/M3(Dust) 5mg/M3(Welding (Fume)

\*Oil Coatings May Be Used. MSDS's For A Specific Coating Are Available Upon Request.

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Note: In Its Manufactured And Shipped State This Is Considered Non-Hazardous. Processing, However, May Generate Fumes And Particulate Matter.

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