

R-342-51 (Rev. 12-89)

# GALVANIZED STEEL

Label No. 5139

**WARNING:** This product is not a physical or health hazard in bulk form. Welding or machining galvanized steel may generate dusts and fumes which may cause eye, nose, and throat irritation. Inhalation of excessive zinc fumes may cause metal fume fever. Ozone may be emitted as a by-product during welding or plasma arc cutting. Prolonged exposure to ozone may result in nausea, headache, and lung damage. If remelted, make certain no water or moisture is present in cavities or on external surfaces.

For further information, refer to Reynolds Material Safety Data Sheet.

Ingredients	CAS Number
Aluminum	7429905
Iron	7439896
Manganese	7439965
Zinc	7440666



REYNOLDS METALS COMPANY  
P. O. Box 27003  
Richmond, Virginia 23261-7003

*This label is required by the OSHA Hazard Communication Standard.*



# MATERIAL SAFETY DATA SHEET

("Essentially Similar" to Form OSHA-174)

REYNOLDS METALS COMPANY R-1087-19

DATE PREPARED 12/21/89	REVISION DATE 9/24/93	MSDS # 5140
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## SECTION 1 - MATERIAL IDENTIFICATION

MANUFACTURER: Reynolds Metals Company  
P. O. Box 27003  
Richmond, Virginia 23261-7003

EMERGENCY TELEPHONE NUMBER:  
(804) 281-2265

PRODUCT CLASS: Copper  
TRADE NAME: SHEET, PLATE, ROD, BAR,  
BUILDING PRODUCTS

MANUFACTURER'S CODE IDENTIFICATION  
SHEET, PLATE, ROD, BAR,  
BUILDING PRODUCTS

## SECTION 2 - HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Typical Percent	OSHA PEL			ACGIH TLV			CAS Numbers
		Gas ppm	Respirable Dust/Mist mg/m <sup>3</sup>	Total Dust mg/m <sup>3</sup>	Gas ppm	Respirable Dust/Mist mg/m <sup>3</sup>	Total Dust mg/m <sup>3</sup>	
Copper *	min 68.0		0.1	1		0.2	1	7440-50-8
Nickel *	max 18.0			1			0.05	7440-02-0
Zinc *	max 9.0		5	15		5	10	7429-90-5
Chromium *	max 5.0		5	15		5	10	7440-66-6

On SARA Section 313 list.

## SECTION 3 - PHYSICAL DATA OF MATERIAL

MELTING POINT: 2567C (Copper)	FREEZING POINT: 1083C (Copper)
DENSITY: 8.9 (Copper)	SOLUBILITY IN WATER: Insoluble
VAPOR PRESSURE: N/A	PHYSICAL STATE: Solid
VAPOR DENSITY: N/A	pH: N/A
COEFFICIENT OF WATER/OIL DIST: N/A	EVAPORATION RATE: N/A
FLASH POINT: N/A	APPEARANCE/ODOR: Odorless, rust color

## SECTION 4 - FIRE AND EXPLOSION HAZARD OF MATERIAL

FLAMMABILITY: YES? NO?  WHAT CONDITIONS? N/A

FLASH POINT (Method Used): N/A  
UEL: N/A  
LEL: N/A

MEANS OF EXTINCTION:  
This product is not combustible. For fires involving metal dust, use dry powdered dolomite, dry sand, or dry graphite. Do not use water.

SPECIAL PROCEDURES:  
Make certain any material that is to be remelted is free of moisture. For fire fighting, use self-contained breathing apparatus in pressure demand mode.

AUTOIGNITION TEMPERATURE: N/A HAZARDOUS COMBUSTION PRODUCTS: None known

SENSITIVITY TO IMPACT: None known SENSITIVITY TO STATIC DISCHARGE: None known

ND = NOT DETERMINED N/A = NOT APPLICABLE

## SECTION 5 - REACTIVITY DATA

CHEMICAL STABILITY: Stable

REACTIVITY AND UNDER WHAT CONDITIONS: Make certain any material that is to be remelted is free of moisture.

INCOMPATIBILITY TO OTHER SUBSTANCES: YES

Acetylene, chlorine, hydrogen peroxide

HAZARDOUS DECOMPOSITION PRODUCTS: None known

## SECTION 6 - TOXICOLOGICAL PROPERTIES OF PRODUCT

ROUTE(S) OF ENTRY:

INHALATION? YES  
EYE CONTACT? YES

INGESTION? NO  
SKIN ABSORPTION? NO

EFFECTS OF ACUTE EXPOSURE:

Acute overexposure to copper and zinc fume may cause irritation of the eyes, nose, throat, and metal fume fever. Symptoms of metal fume fever include chills, fever, nausea, chest tightness, or metallic taste. Ozone may be emitted as a by-product during welding or plasma arc cutting. Exposure to ozone may produce irritation to eyes, nose, and throat. Welding and/or plasma arc cutting generates ultraviolet radiation which can cause skin burns or welders flash to unprotected skin and eyes.

EFFECTS OF CHRONIC EXPOSURE:

Prolonged exposure to ozone may result in nausea, headache, and pulmonary damage. Nickel and certain of its compounds are classified as carcinogens in the latest Annual Report on Carcinogens as published by the National Toxicology Program (NTP) and by the International Agency for Research on Cancer (IARC).

LD50 OF PRODUCT:

Copper - ipr-mus 3.5mg/kg  
Nickel - Not known  
Aluminum - Not known  
Zinc - Not known

LC50 OF PRODUCT:

Copper - Not known  
Nickel - Not known  
Aluminum - Not known  
Zinc - Not known

IRRITANCY OF PRODUCT: Mild

EXPOSURE LIMITS OF PRODUCT:

Use levels for specific ingredients shown in Section 2.

SENSITIZATION TO PRODUCT: Skin - Nickel

SYNERGISTIC MATERIALS: None known

CARCINOGENICITY: IARC, NTP, ACGIH

REPRODUCTIVE EFFECTS: None known

TERATOGENICITY: None known

MUTAGENICITY: None known

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Pre-existing upper respiratory and lung diseases such as, but not limited to, Bronchitis, Emphysema, Asthma, and Wilson's Disease.

**SECTION 7 - PREVENTIVE MEASURES****PERSONAL PROTECTIVE EQUIPMENT:**

**GLASSES:** As needed.

**APPAREL:** Safety glasses, goggles, face shield, or welding helmet, etc., as needed.

**RESPIRATORY:** Use NIOSH/MSHA-approved respirator for dusts/fume/mist, if TLVs or PELs are exceeded.

**FOOTWEAR:** Safety shoes, as needed.

**HEARING PROTECTION:** As needed.

**ENGINEERING CONTROLS:** Local exhaust if TLVs or PELs are exceeded.

**LEAK AND SPILL PROCEDURE:** None known

**WASTE DISPOSAL:**

For disposal of this material as a waste, act in accordance with all applicable federal, state, and local waste management regulations.

**HANDLING PROCEDURES AND EQUIPMENT:** None known

**STORAGE REQUIREMENTS:** If remelted, make certain no water or moisture is present in cavities or on external surfaces.

**HAZARDOUS MATERIAL SHIPPING INFORMATION:** None known

**SECTION 8 - FIRST AID MEASURES**

**SKIN:** For minor burns, apply cold water. For severe burns, seek immediate medical attention.

**EYES:** Immediately flush with water for 15 minutes. Seek medical attention if irritation persists.

**INHALATION:** Remove to fresh air.

**INGESTION:** Does not represent a hazard.

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**SECTION 9 - SPECIAL PRECAUTIONS AND COMMENTS**

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product contains a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

**HMIS RATINGS**

Health: 1  
Flammability: 1  
Reactivity: 1

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