

# SAFETY DATA SHEET

## SECTION 1 : IDENTIFICATION

### Product identifier used on the label:

**Product Name:** MicroGuard II

### Other means of identification:

**Product Description:** See list of approved applications EPA master label

**Synonyms:** MicroGuard

### Recommended use of the chemical and restrictions on use:

### Chemical manufacturer address and telephone number:

**Manufacturer Name:** PMX Industries, Inc.

**Address:** 5300 Willow Creek Drive SW  
Cedar Rapids, Iowa 52404-4303  
USA

**General Phone Number:** 319-368-7700

**General Fax Number:** 319-368-7701

### Emergency phone number:

**Emergency Phone Number:** 319-368-7700

## SECTION 2 : HAZARD(S) IDENTIFICATION

### Classification of the chemical in accordance with CFR 1910.1200(d)(f):

**Signal Word:** Not applicable.

**GHS Class:** Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200..

### Hazards not otherwise classified that have been identified during the classification process:

**Emergency Overview:** Copper alloy products in the natural state do not present a hazard for emergency response personnel.

**Route of Exposure:** Inhalation, Eye Contact, Skin Contact

Potential Exposure Routes: For dust: ingestion, inhalation and eye contact. For fume: inhalation and eye contact. The finished alloy metal is not hazardous.

**Potential Health Effects:** Copper alloy products in the natural state do not present an inhalation, ingestion, or contact hazard. However, operations such as burning, welding, sawing, brazing, or grinding may release fumes and/or dusts which may present health hazards if occupational exposure limits are exceeded.

**Eye:** Short-term exposure to fumes/dust may produce irritation.

**Inhalation:** Short-term exposure to fumes/dust may produce irritation of the respiratory system.

**Ingestion:** Not a likely route of exposure for finished metal components.

**Potential Environmental Effects:** None known. Product has not been tested for environmental properties.

**Signs/Symptoms:** Metal fume fever- metallic taste in mouth, dryness, and irritation of the throat, and influenza-like symptoms. The effects may be delayed.

**Target Organs:** Upper respiratory tract, eyes, skin.

**Aggravation of Pre-Existing Conditions:** Exposure to fumes or dust may aggravate existing respiratory disease or dermatitis.

### Copper

**Skin:** Repeated or prolonged exposure to copper dusts or mists may cause irritant or allergic contact dermatitis.

**Inhalation:** Exposure to high concentrations of oxide fumes of copper may cause metal fume fever.

## Zinc

**Inhalation:** Exposure to high concentrations of oxide fumes of zinc may cause metal fume fever.

### SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

#### Mixtures:

<b>Chemical Name</b>	<b>CAS#</b>	<b>Ingredient Percent</b>	<b>EC Num.</b>
Iron	7439-89-6	0 - 4% %	231-096-4
Titanium	7440-32-6	0 - 0.1% %	231-142-3
Manganese	7439-96-5	0 - 1.5% %	231-105-1
Magnesium	7439-95-4	0 - 0.3% %	231-104-6
Copper	7440-50-8	84.7 - 97.9% %	231-159-6
Zinc	7440-66-6	0 - 13.8% %	231-175-3
Aluminum	7429-90-5	0 - 11% %	
Silicon	7440-21-3	0 - 3.2% %	
Nickel	7440-02-0	0 - 12.5% %	
Tin	7440-31-5	0 - 11% %	

### SECTION 4 : FIRST AID MEASURES

#### Description of necessary measures:

**Eye Contact:** Flush with water for at least 15 minutes.  
**Skin Contact:** Wash with soap and water.  
**Inhalation:** If exposed to excessive levels of metal fumes, remove to fresh air. Seek medical attention.

### SECTION 5 : FIRE FIGHTING MEASURES

#### Suitable and unsuitable extinguishing media:

**Suitable Extinguishing Media:** Use extinguishing media appropriate to the surrounding material.  
**Fire Fighting Instructions:** Copper alloy products in the solid state present no fire or explosion hazard, but may react with strong acids, bases, or oxidizing agents.

### SECTION 6 : ACCIDENTAL RELEASE MEASURES

#### Methods and materials for containment and cleaning up:

**Spill Cleanup Measures:** LEAKS, OR RELEASES: Not applicable

### SECTION 7 : HANDLING and STORAGE

#### Precautions for safe handling:

**Handling:** In welding or melting, precautions should be taken for airborne contaminants that may originate from components of the welding rod.

#### Conditions for safe storage, including any incompatibilities:

**Storage:** No special requirements  
Shelf Life Limitations: None known  
Incompatible Materials for Packaging: None known.

## SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

### EXPOSURE GUIDELINES:

#### **Manganese :**

Guideline ACGIH:	TLV-TWA: 0.2 mg/m3
Guideline OSHA:	PEL-Ceiling/Peak: 5 mg/m3 PEL-Ceiling/Peak: 5 mg/m3

#### **Copper :**

Guideline ACGIH:	TLV-TWA: 1 mg/m3 TLV-TWA: 0.2 mg/m3
Guideline OSHA:	PEL-TWA: 1 mg/m3 PEL-TWA: 0.1 mg/m3

### Appropriate engineering controls:

**Engineering Controls:** Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding, or machining when exposure exceeds occupational exposure limits.

### Individual protection measures:

**Eye/Face Protection:** Safety glasses or goggles should be utilized as required by exposure. Other Protective equipment should be utilized as required by welding standards.

**Skin Protection Description:** Wear appropriate personal protective clothing to prevent skin contact with copper dust.

**Respiratory Protection:** NIOSH-approved dust or fume respirator should be used to avoid excessive inhalation of particulates when exposure exceeds occupational exposure limits.

**Other Protective:** Do not eat, drink, or smoke during work. Wash hands before eating or smoking.

## SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

### PHYSICAL AND CHEMICAL PROPERTIES:

Physical State:	Solid
Physical State Appearance:	Red Metallic
Color:	Red
Odor:	None
Melting Point:	1050 - 1100 deg C
Density:	8.94 g/cc
Specific Gravity:	8.94
Vapor Density:	(Air = 1): Not applicable
Vapor Pressure:	Not Applicable
Percent Volatile:	Not Applicable
Evaporation Rate:	Not Applicable
pH:	Not Applicable
Flash Point:	Not Applicable
Lower Flammable/Explosive Limit:	(%): None
Upper Flammable/Explosive Limit:	(%): None
Auto Ignition Temperature:	Not Applicable

## SECTION 10 : STABILITY and REACTIVITY

### Reactivity:

**Reactivity:** POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur.

### Chemical Stability:

**Chemical Stability:** Stable.

Conditions To Avoid:

**Conditions to Avoid:** Avoid contact with carbon monoxide at temperatures between 50 and 300 deg C to prevent formation of nickel carbonyl which is toxic and a carcinogen.

Incompatible Materials:

**Incompatible Materials:** Mercury, ammonia, acetylene acids. Contact with strong acids, Bases, or oxidizing agents.  
MATERIALS TO AVOID: Acetylene, Chlorine

Hazardous Decomposition Products:

**Special Decomposition Products:** Metallic dust or fumes may be produced during welding, burning, grinding, and machining.

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## SECTION 11 : TOXICOLOGICAL INFORMATION

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TOXICOLOGICAL INFORMATION:

**Iron :**

ACGIH: No

IARC: No

NTP: No

**Titanium :**

ACGIH: No

IARC: No

NTP: No

**Manganese :**

ACGIH: No

IARC: No

NTP: No

**Magnesium :**

ACGIH: No

IARC: No

NTP: No

**Copper :**

ACGIH: No

IARC: No

NTP: No

**Zinc :**

ACGIH: No

IARC: No

NTP: No

**Aluminum :**

ACGIH: No

IARC: No

NTP: No

**Silicon :**

ACGIH: No

IARC: No

NTP: No

**Nickel :**

ACGIH: No

IARC: Yes

NTP: Yes

**Tin :**

ACGIH: No  
IARC: No  
NTP: No  
Skin: Dermal LD50: Believed to be > 2 g/kg  
Inhalation: Inhalation LC50: Believed to be slightly to moderately toxic  
Ingestion: Oral LD50: Believed to be > 5 g/kg

**Iron :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: No data

**Titanium :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: No data

**Manganese :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: 9 g/kg (rat)

**Magnesium :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: No data

**Copper :**

Skin: Dermal LD50: 375 mg/kg (rabbit subcutaneous)  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: 413 mg/kg (mouse)  
Chronic Effects: Repeated or prolonged overexposure to copper fume may cause the skin and hair to change color.

**Zinc :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: No data

**Aluminum :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: No data

**Silicon :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: 3.16 g/kg (rat)

**Nickel :**

Skin: Dermal LD50: > 7.5 g/kg (rabbit subcutaneous)  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: > 5 g/kg (rat)

**Tin :**

Skin: Dermal LD50: No data  
Inhalation: Inhalation LC50: No data  
Ingestion: Oral LD50: No data

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## SECTION 12 : ECOLOGICAL INFORMATION

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Ecotoxicity:

Ecotoxicity: Not applicable.

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## SECTION 13 : DISPOSAL CONSIDERATIONS

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Description of waste:

Waste Disposal: According to local, state, and federal regulations. This product may be a candidate for metal reclamation.

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## SECTION 14 : TRANSPORT INFORMATION

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DOT Shipping Name: Not restricted as a dangerous good.

DOT UN Number: Not restricted as a dangerous good.

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## SECTION 15 : REGULATORY INFORMATION

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Safety, health and environmental regulations specific for the product:

**Iron :**

TSCA Inventory Status: Listed

Canada DSL: Listed

EC Number: 231-096-4

**Titanium :**

TSCA Inventory Status: Listed

Canada DSL: Listed

EC Number: 231-142-3

**Manganese :**

TSCA Inventory Status: Listed

Section 313: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

Canada DSL: Listed

EC Number: 231-105-1

**Magnesium :**

TSCA Inventory Status: Listed

Canada DSL: Listed

EC Number: 231-104-6

**Copper :**

TSCA Inventory Status: Listed

Section 313: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

Canada DSL: Listed

EC Number: 231-159-6

**Zinc :**

TSCA Inventory Status: Listed

Section 313: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

Canada DSL: Listed

EC Number: 231-175-3

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## SECTION 16 : ADDITIONAL INFORMATION

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HMIS Ratings:

SDS Creation Date: March 15, 2009

SDS Revision Date: September 09, 2015

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