

# Material Safety Data Sheet

Material Name: Galvanized Sheet-Low C and HSLA Steel (Hot Dipped)

ID: TECHS-001

## \*\*\* Section 1 - Chemical Product and Company Identification \*\*\*

### Manufacturer Information

The Techs  
2400 Second Avenue  
Pittsburgh, PA 15219

Phone: 412-464-5000  
Fax: 412-464-2019  
Emergency # 412-464-5000

## \*\*\* Section 2 - Composition / Information on Ingredients \*\*\*

CAS #	Component	Percent
7439-89-6	Iron	80.0-99.5
7440-66-6	Zinc	0.5-19.0
7489-96-5	Manganese	0.0-1.35
7440-02-0	Nickel	0.0-0.2

### Component Information/Information on Non-Hazardous Components

This material is considered an "article" under 29 CFR 1910.1200 (Hazard Communication). The information in this MSDS is provided for situations where this article may be deformed creating dusts or fumes which may be potentially hazardous.

Product contains less than 0.004% cadmium and **less than 0.01% lead**, mercury, hexavalent chromium, antimony, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE). Some of these components are specifically regulated by OSHA.

## \*\*\* Section 3 - Hazards Identification \*\*\*

### Emergency Overview

This is a non-combustible, non-reactive solid material. The metallic elements contained in the galvanized steel may be biologically available if ingested or inhaled.

### Potential Health Effects: Eyes

Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea. Symptoms can include irritation, redness, scratching of the cornea, and tearing.

### Potential Health Effects: Skin

Dust or powder may irritate the skin. Mechanical rubbing may increase skin irritation.

### Potential Health Effects: Ingestion

Harmful if swallowed. Dusts of this product contain lead. Exposure to lead above the regulated levels can have effects on the brain and reproductive system.

### Potential Health Effects: Inhalation

Dusts of this product may cause irritation of the nose, throat, and respiratory tract. Heating this product may release harmful vapors. This product may cause metal fume fever with resulting flu-like symptoms. Chronic inhalation of fumes from this product may cause benign pneumoconiosis and lung cancer.

### HMIS Ratings: Health: 1\* Fire: 0 Physical Hazard: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe \* = Chronic hazard

## \*\*\* Section 4 - First Aid Measures \*\*\*

### First Aid: Eyes

Eye injuries from steel particles should be treated by a physician immediately.

### First Aid: Skin

Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

### First Aid: Ingestion

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

### First Aid: Inhalation

Move person to non-contaminated air. Call a physician if symptoms develop or persist.

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## \*\*\* Section 5 - Fire Fighting Measures \*\*\*

**Flash Point:** Not Applicable

**Upper Flammable Limit (UFL):** Not Applicable

**Auto Ignition:** Not Applicable

**Rate of Burning:** Not Applicable

### General Fire Hazards

This material will not burn.

### Hazardous Combustion Products

Metallic coating will begin to melt around 427°C (800°F) and the metal will begin to melt around 1510°C (2750°F). This product will proceed to a liquid and will form irritating and toxic gaseous metallic oxides at extremely high temperatures.

### Extinguishing Media

Use methods for the surrounding fire.

### Fire Fighting Equipment/Instructions

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Fire fighters should avoid inhaling any combustion products.

**NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Containment Procedures

Avoid creating dusts and fumes.

### Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Collect spill using a vacuum cleaner with a HEPA filter. Put material in suitable, covered, labeled containers.

### Evacuation Procedures

Evacuate the area promptly. Keep upwind of the spilled material and isolate exposure.

### Special Procedures

Regulations vary. Consult local authorities before disposal. Steel products may be recycled.

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Do not inhale dusts or fumes. Avoid the generation of airborne dusts. Avoid contact with skin and eyes. Wash thoroughly after handling.

### Storage Procedures

Keep this material in a dry area.

## \*\*\* Section 8 - Exposure Controls / Personal Protection \*\*\*

### Exposure Guidelines

#### A: General Product Information

Use local exhaust ventilation. Inorganic lead and cadmium are specifically regulated materials. Consult 29 CFR 1910 for other requirements if action level is attained.

#### B: Component Exposure Limits

##### Nickel (7440-02-0)

ACGIH: 1.5 mg/m<sup>3</sup> TWA (inhalable fraction)

OSHA: 1 mg/m<sup>3</sup> TWA

NIOSH: 0.015 mg/m<sup>3</sup> TWA

### Engineering Controls

Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

### PERSONAL PROTECTIVE EQUIPMENT

#### Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields or goggles.

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## Personal Protective Equipment: Skin

Wear leather or other appropriate work gloves, if necessary for type of operation. The use of coveralls is recommended.

## Personal Protective Equipment: Respiratory

Not normally needed. If permissible levels are exceeded, use NIOSH approved dust respirator.

## Personal Protective Equipment: General

Eye wash fountains are required.

### \*\*\* Section 9 - Physical & Chemical Properties \*\*\*

**Appearance:** Metallic Gray  
**Physical State:** Solid  
**Vapor Pressure:** Not applicable  
**Boiling Point:** Not applicable

**Odor:** None  
**pH:** Not applicable  
**Vapor Density:** Not applicable  
**Melting Point:** Base metal: 1511°C (2750°F);  
Metallic Coating: 426 - 482°C  
(800 - 900°F)

**Solubility (H2O):** Not applicable

**Specific Gravity:**

### \*\*\* Section 10 - Chemical Stability & Reactivity Information \*\*\*

#### Chemical Stability

Stable.

#### Chemical Stability: Conditions to Avoid

Will react with strong acids to liberate hydrogen.

#### Incompatibility

None known.

#### Hazardous Decomposition

The melting of this product may release metal oxide fumes.

#### Hazardous Polymerization

Will not occur.

### \*\*\* Section 11 - Toxicological Information \*\*\*

#### Acute and Chronic Toxicity

##### A: General Product Information

Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. Higher exposures may cause difficulty breathing, congestion, and chest tightness. Symptoms of lead toxicity include behavioral disturbances including irritability, restlessness, insomnia, and other sleep disturbances, fatigue, vertigo, headache, poor memory, tremor, depression, and apathy. Acute antimony poisoning in animals is characterized by marked weight loss, hair loss, skin dryness, eosinophilia and myocardial failure. In humans, vomiting is a consistent symptom of antimony poisoning, regardless of route of entry. Zinc poisoning can cause anemia, lethargy and dizziness. Repeated exposure of nickel dusts may produce allergic skin and respiratory sensitization reactions. Effects of overexposure to cobalt include lung effects (irritation, fibrosis, asthma), cardiovascular effects (cardiomyopathy), liver and kidney congestion.

##### B: Component Analysis - LD50/LC50

###### Iron (7439-89-6)

Oral LD50 Rat: 30 g/kg

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## Carcinogenicity

### A: General Product Information

Although some lead salts have produced tumors in animals, the evidence is insufficient to determine the carcinogenicity of lead in humans. Inorganic arsenic (includes the metallic form) has been shown to cause skin and lung cancer, lymphatic cancer and dermatitis in humans on long term occupational exposure. Inorganic arsenic can produce lung, skin and lymphatic cancer with long term occupational exposure above the established limits. Inhalation of antimony trioxide has resulted in tumors of the lungs and liver in rats. The carcinogenic effect of nickel has been well documented in occupationally exposed nickel refinery workers. Lung and nasal cancers were the predominant forms of cancer in the exposed workers.

### B: Component Carcinogenicity

#### Nickel (7440-02-0)

ACGIH: A5 - Not Suspected as a Human Carcinogen  
NIOSH: potential occupational carcinogen  
NTP: Reasonably Anticipated To Be A Carcinogen (Possible Select Carcinogen)  
IARC: Monograph 49, 1990 (Group 2B (possibly carcinogenic to humans))

## Epidemiology

There is extensive literature on human exposure to lead, both by the oral route (the common exposure for the general population) and the inhalation route (the common exposure for the workplace). An excellent review is provided in the "Toxicological Profile for Lead" written by the Agency for Toxic Substances and Disease Registry (ATSDR) and available from the National Technical Information Services (NTIS). No epidemiological data is available for this product. Asthma induced by occupational exposure to nickel has been documented. The asthma can result from either primary irritation or from an allergic response.

## Neurotoxicity

Inorganic lead has been found to have toxic effects on both the central and peripheral nervous systems. Symptoms of lead toxicity include behavioral disturbances such as irritability, restlessness, insomnia, and other sleep disturbances, fatigue, vertigo, headache, poor memory, tremor, depression, and apathy. With more severe exposure, symptoms can progress to drowsiness, stupor, hallucinations, delirium, convulsions, and coma

## Mutagenicity

Exposure to antimony has been reported to induce chromosomal aberrations in bacteria. No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Exposure to lead has been reported to cause chromosome aberrations in humans. Exposure to antimony has been reported to induce chromosomal aberrations in bacteria.

## Teratogenicity

Lead has a wide variety of reproductive effects in humans. It can affect both the male and female reproductive organs as well as egg and sperm production and development. Lead can also cause neurodevelopmental debilitations in children from both prenatal and postnatal exposures.

## Other Toxicological Information

Under normal conditions of use for steel products, the likelihood of inhaling or ingesting amounts necessary for these effects to occur is very small.

## \*\*\* Section 12 - Ecological Information \*\*\*

## Ecotoxicity

### A: General Product Information

No information available.

### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

#### Zinc (7440-66-6)

Test & Species	Conditions
96 Hr LC50 fathead minnow	6.4 mg/L
96 Hr EC50 freshwater algae (Selenastrum capricornutum)	30 µg/L
72 Hr LC50 water flea	5 µg/L

#### Nickel (7440-02-0)

Test & Species	Conditions
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96 Hr LC50 rainbow trout (adults)	31.7 mg/L
96 Hr LC50 fathead minnow	3.1 mg/L
72 Hr EC50 freshwater algae (4 species)	0.1 mg/L
96 Hr LC50 water flea	510 µg/L

## Environmental Fate

No information available.

### \*\*\* Section 13 - Disposal Considerations \*\*\*

## US EPA Waste Number & Descriptions

### A: General Product Information

This product contains a component or components identified as hazardous under 40 CFR 261.24. You must test your waste using methods describes in 40 CFR 261 to determine if it meets these or other applicable definitions of hazardous wastes.

### B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

## Disposal Instructions

Consult authorities before disposal. Purchaser is advised to review regulations referenced for applicability as determined by purchaser's use of the product. Steel products may be recycled.

### \*\*\* Section 14 - Transportation Information \*\*\*

## US DOT Information

**Shipping Name:** Not regulated as a hazardous material for transportation.

## TDG Information

**Shipping Name:** Not regulated as a dangerous good for transportation.

### \*\*\* Section 15 - Regulatory Information \*\*\*

## US Federal Regulations

### A: General Product Information

This product contains metals, which as as dusts, fumes or particulates, are subject to the reporting requirements of Section 313 of SARA and its associated regulations. If the physical form and usage meets the defintion of an article, no reporting is ncessary.

### B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

#### Zinc (7440-66-6)

SARA 313: 1.0 % de minimis concentration (only fume or dust)

CERCLA: 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the solid metal released is equal to or exceeds 0.004 inches)

#### Nickel (7440-02-0)

SARA 313: 0.1 % de minimis concentration

CERCLA: 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)

## State Regulations

### A: General Product Information

Other state regulations may apply. Check individual state requirements.

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## B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Iron	7439-89-6	Yes	No	No	No	No	No
Zinc	7440-66-6	Yes	Yes	No	Yes	Yes	Yes
Nickel	7440-02-0	Yes	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.  
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

## Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Nickel	7440-02-0	0.1 % (English Item 1126, French Item 1193)

## Additional Regulatory Information

### A: General Product Information

This product is listed on the U.S. EPA TSCA Inventory.

### B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Iron	7439-89-6	Yes	DSL	EINECS
Zinc	7440-66-6	Yes	DSL	EINECS
Manganese	7489-96-5	No	No	No
Nickel	7440-02-0	Yes	DSL	EINECS

## \*\*\* Section 16 - Other Information \*\*\*

### Other Information

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

### Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. CFR = Code of Federal Regulations. DSL = Canadian Domestic Substance List. EINECS = European Inventory of New and Existing Chemical Substances. EPA = Environmental Protection Agency. HEPA = High Efficiency Particulate Air. HMIS = Hazardous Material Identification System. IARC = International Agency for Research on Cancer. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NJTSR = New Jersey Trade Secret Registry. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NA = Not available or Not Applicable. SARA = Superfund Amendments and Reauthorization Act. TLV = Threshold Limit Value. TSCA = Toxic Substance Control Act. WHMIS = Workplace Hazardous Materials Information System.

This is the end of MSDS # TECHS-001