

Firestone Metal Products Company

Material Safety Data Sheet

March 16, 2009

Page: 1

SECTION 1: PRODUCT IDENTIFICATION

Product Name:	Flat Lock, ES-1, 2, 3, 4; sheet and coil stock, UNA-Edge DE, GS, CO; Brake metal, Other special orders roofing
Chemical Name / Synonym:	Stainless Steel Products, All Grades
Chemical Family:	None
24-Hour Emergency Phone:	(800) 424-9300 CHEMTREC
Manufacturer's Name:	Firestone Metal Products Company
Manufacturer's Address:	250 West 96 th Street, Indianapolis, IN 46260
NFPA Hazard Rating:	Health 1, Flammability 0, Reactivity 0
HMSI Hazard Rating:	Health 0, Flammability 0, Reactivity 0

SECTION 2: CHEMICAL COMPOSITION

Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:
Iron	Carbonyl Iron	7439-89-6	45-90	5 mg/m ³ (respirable) TLV (FeO ₂) 10 mg/m ³ PEL (FeO ₂)
Nickel	Nickel	7440-02-0	0-40	1.5 mg/m ³ (inhalable) TLV 1 mg/m ³ PEL - (total Ni or NiO) 0.2 mg/m ³ (inhalable) TLV – (NiO)
Chromium	Chromium	7440-47-3	10.5-30	0.5 mg/m ³ TLV
Manganese	Manganese	7439-96-5	0-15	0.2 mg/m ³ TLV 5 mg/m ³ PEL - Ceiling
Molybdenum	Molybdenum	7439-98-7	0-5	10 mg/m ³ (inhalable) TLV 3 mg/m ³ (respirable) TLV
Copper	Copper	7440-50-8	0-5	1 mg/m ³ (dust) TLV 1 mg/m ³ (dust) PEL 0.2 mg/m ³ (fume) TLV 0.1 mg/m ³ (fume) PEL
Silicon	Silicon	7440-21-3	0-3	5 mg/m ³ (respirable) PEL 15 mg/m ³ (total) PEL
Aluminum	Aluminum Metal	7429-90-5	0-1	10 mg/m ³ (total) TLV 5 mg/m ³ (respirable) PEL 15 mg/m ³ (total) PEL
Cobalt	Cobalt	7440-48-4	0-1	None Established

Firestone Metal Products Company

Material Safety Data Sheet

March 16, 2009

Page: 2

SECTION 3: HAZARD IDENTIFICATION

Primary Route of Exposure:	Inhalation and skin.
Signs and Symptoms of Exposure:	<p>General handling of metal products typically do not present a health hazard. Sharp metal edges may cause skin cuts. Repeated contact with coating may lead to skin irritation and dermatitis.</p> <p>Upon welding, cutting, or welding on materials the following signs and symptoms of exposure:</p> <p>Dusts and fumes generated during welding, cutting or welding activities can cause irritation to the eyes, respiratory tract and mucous membranes. Accumulation of zinc oxide dust can cause skin eruptions, typically in warm and moist areas of the body. Inhalation of the zinc oxide fume and magnesium oxide fume (and some other metals found in this compound in very low concentrations) can cause metal fume fever, symptoms including muscular pain, chills, nausea and vomiting. Symptoms typically last for 24-48 hours, and are not life-threatening nor cause any permanent damage. Exposures to high concentrations of nickel may cause pulmonary inflammation.</p> <p>Effects from high exposures to copper include a metallic or sweet taste sensation, discoloration of the skin and hair, gastrointestinal distress and conditions similar to metal fume fever.</p>
Medical Conditions Aggravated by Exposure:	As a fume or dust, chronic respiratory disorders, including (but not limited to) asthma, chronic bronchitis and emphysema. Among people with chronic kidney disease; neurological, neuromuscular and cardiovascular ailments can be enhanced/aggravated due to retained magnesium.
Chronic Effects:	<p>No chronic effects are expected due to general handling of metal products.</p> <p>Upon heating of this material (e.g., welding, cutting, or welding), the following chronic effects may occur:</p> <p>The inhalation of large amounts of iron dust may result in iron pneumoconiosis, termed siderosis, a benign condition identified via x-rays to appear as deposition of iron oxide on the lungs; however, little or no adverse health effects are typically reported with workers diagnosed with siderosis.</p> <p>The repeated inhalation of large amounts of manganese dust and fume can cause fibrotic changes in the lung, including some resembling those of silicosis. Additionally, repeated exposures to large amounts of manganese can lead to central nervous system (CNS) effects.</p> <p>Studies have demonstrated increase risk of lung, nasal sinus and larynx cancers from elevated airborne exposures to nickel.</p> <p>Repeated inhalation of high concentrations of cobalt have been contributed to cause changes to the pulmonary system, including asthma, interstitial pneumonitis and lung fibrosis</p>
Carcinogenicity:	Elemental nickel is characterized by IARC as a 2B carcinogen, <i>Possibly Carcinogenic to Humans</i> , and by NTP as a

Firestone Metal Products Company

Material Safety Data Sheet

March 16, 2009

Page: 3

Reasonably Anticipated To Be A Human Carcinogen. Nickel oxide is characterized by IARC as a class 1 carcinogen, *Carcinogenic to Humans*, and by NTP as a *Known To Be A Human Carcinogen*. It should be noted that the quantity (by weight) of elemental nickel found in this product is no greater than 0.1%.

Cobalt is characterized by IARC as a 2B carcinogen, *Possibly Carcinogenic to Humans*.

SECTION 4: FIRST AID MEASURES

First Aid Procedures:	Treat skin cuts via washing wound with soap and clean water, and apply antibiotic. If particles from this material contact the eyes, hold eyelids open and flush immediately with a gentle stream of water for at least 15 minutes, preferably at an eyewash fountain. If particles become imbedded, or irritation continues, get medical attention. Following skin contact, clean immediately by washing affected area with soap and water. In case of inhalation of fumes or dusts, remove to fresh uncontaminated air. Administer oxygen if breathing is labored. Give artificial respiration if breathing has stopped. Get medical attention immediately if oxygen or artificial respiration are administered. While an unlikely means of exposure, in case of accidental ingestion, do not induce vomiting. Get medical attention and advise the physician of the nature of the material.
-----------------------	---

SECTION 5: FIRE FIGHTING PROCEDURES

Suitable Extinguishing Media:	Not applicable. Material will not burn unless involved in an intense fire supported by surrounding materials. In this case, extinguish using suitable media for surrounding materials.
Hazardous Combustion Products:	Various metal oxides and carbon oxides.
Recommended Fire Fighting Procedures:	No special procedures recommended for solid material. Do not permit water to come in contact with molten metal.
Unusual Fire and Explosion Hazards:	None for solid material. Small chips, dust or other fines may be readily ignitable, generating considerable heat. Molten metal will splatter when it comes in contact with water.

SECTION 6: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled:	Not Applicable for solid material. When cleaning up fine dusts, avoid creating airborne dust. Use non-sparking tools, and avoid water.
Precautions to Be Taken in Handling and Storing:	Keep dry.

SECTION 7: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation:	Activities involving the generation of high amounts of fine dusts and/or fumes should be evaluated to determine if additional local exhaust is necessary. If a local exhaust system is used, explosion-proof equipment may be warranted.
Respiratory Protection:	Activities involving the generation of high amounts of fine dusts and/or fumes should be evaluated to determine if a NIOSH

Firestone Metal Products Company

Material Safety Data Sheet

March 16, 2009

Page: 4

approved air purifying respirator may be appropriate based on employer-determined exposure levels. Air supplied or SCBA respirators may be required when the measured chemical concentration exceeds the capacity of the air purifying respirator or when personal exposure levels are unknown.

Eye Protection: Safety glasses with side shields may be warranted when cutting or grinding on this product. Employer-determined protective eye ware for welding, torching or other hot-work activities is required.

Skin Protection: Cut-resistant gloves may be warranted while handling solid material. Welding or other hot-work gloves may be warranted when carrying out welding, cutting or other hot-work activities involving this material.

Other: Other protective clothing may be warranted depending upon the activities involving this material. The employer must make this determination.

Work / Hygienic Practices: Wash exposed skin prior to eating, drinking or smoking and at the end of each shift.

SECTION 8: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Solid silvery metallic with no odor.		
Flash Point:	Not Applicable	Lower Explosive Limit:	Not Applicable
Method Used:	Not Applicable	Upper Explosive Limit:	Not Applicable
Evaporation Rate:	Not Applicable	Boiling Point:	Not Applicable
pH (undiluted product):	Not Applicable	Melting Point:	Unknown
Solubility in Water:	Insoluble	Specific Gravity:	7.65-7.94
Vapor Density:	Not Applicable	Percent Volatile:	Not Applicable
Vapor Pressure:	Not Applicable		

SECTION 9: STABILITY AND REACTIVITY

Thermal Stability:	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	None when material is in solid form. When dusts, chips or other fines are present, avoid water, strong oxidizers, acids, alkalis, and halogenated compounds.

SECTION 10: TRANSPORTATION

Regulatory Agency:	Not Regulated
Proper Shipping Name:	Not Applicable
Hazard Classification:	Not Applicable
Identification Number:	Not Applicable
Labels Required:	Not Applicable

Firestone Metal Products Company Material Safety Data Sheet

March 16, 2009

Page: 5

Other Requirements:

Not Applicable

SECTION 11: MISCELLANEOUS INFORMATION

Additional Comments: Hexavalent chromium, a suspect carcinogen, may result from the pickling of stainless, and could be released during welding, cutting, or other fume-generating activities.

Date of Previous MSDS: January 15, 2008

Changes Since Previous MSDS: Company name change

Telephone Number for Additional Information: (317) 575-7190

DISCLAIMER

The information contained herein is based on data considered accurate which has been obtained from other companies and organizations. However, no warranty or representation is expressed or implied that the information, is accurate, complete or representative. Firestone Metal Products Company, a subsidiary of Firestone Diversified Products, LLC, assumes no responsibility for injury to the buyer, the buyer's employees, or any third persons, if reasonable safety procedures are not followed. Additionally, Firestone Metal Products Company assumes no responsibility for injury to buyer, the buyer's employees, or any third persons caused by abnormal use of this material, even if reasonable safety procedures are followed.