

Thomas Steel Strip Corporation
Corus Special Strip

Post-it® Fax Note	7671	Date	7/2/02	# of pages	4
To	C. ZEEBAND	From	C. DEJENNA		
Co./Dept.		Co.	TSC		
Phone #		Phone #	1-800-321-7778		
Fax #	330-250-9723	Fax #	330-841-2100		

MATERIAL SAFETY DATA SHEET

To the Purchaser: This MSDS contains important environmental, health and toxicological information for your employees who have ordered this product. Please ensure that this information is given to them. If you resell this product, a copy of the MSDS should be given to the buyer.

IDENTITY: COLD ROLLED, LOW CARBON, NICKEL/ZINC PLATED STEEL STRIP

Section I

MANUFACTURER	EMERGENCY TELEPHONE NUMBER	330-841-6111
THOMAS STEEL STRIP	TELEPHONE # FOR INFORMATION:	330-841-6118
DELAWARE AVENUE, NW	DATE PREPARED:	JANUARY, 1989
WARREN, OHIO 44485	DATE REVISED:	OCTOBER, 2003

Section II—Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity)	CAS #	% (weight)	Exposure (PEL as)	Exposure Limits		
				OSHA PEL mg/M ³	ACGIH TLV mg/M ³	ACGIH STEL mg/M ³
Iron	7439-89-6	balance	Iron Oxide Fume	10	5	
¹ Zinc	7440-66-6	5.4 max.	Zinc Oxide Fume	5	1	
¹ Nickel	7440-02-0	1.0 max.	Nickel	1	1.5	
¹ & ² Chromium	7440-47-3	< 1.0 max.	Trivalent Chrome	1	0.5	
Carbon	7440-44-0	0.001-1.03	Nuisance Dust	15	10	
Manganese	7439-96-5	0.15-0.99	Manganese Dust	5 [Ⓞ]	0.2	
			Manganese Fume	5 [Ⓞ]	1	3
Phosphorus	8049-19-2	0.001-0.04	Nuisance Dust	15	10	
Sulfur	7704-34-9	0.001-0.05	Nuisance Dust	15	10	
Silicon	7440-21-3	0.01-0.40	Nuisance Dust	15	10	
Aluminum	7429-90-5	0.02-0.09	Nuisance Dust *total **respirable dust	15*5**	10	
Antimony	7440-36-0	0.005-0.04	Antimony	0.5	0.5	
Columbium	7440-03-1	0.01-0.15	Nuisance Dust	15	10	
Titanium	7440-32-6	0.01-0.15	Nuisance Dust	15	10	
Boron	7440-42-8	0.005-0.01	Nuisance Dust	15	10	
Copper	7440-50-8	0.01-0.20	Copper Fume	0.1	0.2	

TSS: NICKEL/ZINC PLATED STEEL STRIP**Section II—Hazardous Ingredients/Identity Information (continued from page 1)**

¹ - SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

² - THIS PRODUCT MAY BE TREATED WITH CHROMATE AT CUSTOMER'S REQUEST.

This product may contain trace elements such as: aluminum, arsenic, antimony, boron, cadmium, calcium, chromium, cobalt, columbium, copper, lead, molybdenum, nickel, phosphorus, silicon, sulfur, tin, tantalum, titanium, vanadium, and zirconium may be present in trace amounts. *Note - A coating of petroleum oil may be added for corrosion protection. © - Denotes Ceiling Limit

Section III—Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H ₂ O = 1)	7.5 to 8.5
Vapor Pressure (mm Hg)	N/A	Melting Point	2400 to 2800 °F
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	INSOLUBLE		
Appearance and Odor	SILVER/GRAY - ODORLESS		

Section IV—Fire and Explosion Hazard Data

Flash Point (Method Used)	N/A	Flammable Limits	LEL N/A	UEL N/A
Extinguishing Media	N/A			
Special Fire Fighting Procedures	N/A			
Unusual Fire and Explosion Hazards	N/A			

Section V—Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	N/A
Incompatibility (Materials to Avoid)	ACIDS, STRONG OXIDIZERS		
Hazardous Decomposition or Byproducts	METAL OXIDES OF LISTED INGREDIENTS		
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	N/A

TSS: NICKEL/ZINC PLATED STEEL STRIP

Section VI—Health Hazard Data			
Route(s) of Entry SEE BELOW**	Inhalation? YES	Skin? YES	Ingestion? LIMITED
Health Hazards (<i>Acute and Chronic</i>)			
**STEEL PRODUCTS IN THEIR NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, CUTTING, WELDING, SAWING, BRAZING AND/OR GRINDING MAY RESULT IN THE FOLLOWING EFFECTS IF THE PEL AS LISTED IN SECTION II ARE EXCEEDED.			
SEE PAGE 4			
Signs and Symptoms of Exposure			
IRRITATION OF EYES, NOSE AND THROAT. ALLERGIC SKIN RASHES. POSSIBLE METALLIC TASTE.			
Medical Conditions Generally Aggravated by Exposure			
SENSITIZED INDIVIDUALS MAY EXPERIENCE AN ALLERGIC SKIN RASH OR ASTHMA			
Emergency and First Aid Procedures			
FOR SKIN RASHES SEEK MEDICAL ATTENTION. CLEANSE WOUNDS THOROUGHLY TO REMOVE ANY PARTICLES. REMOVE TO FRESH AIR & SEEK MEDICAL ATTENTION			
Section VII—Precautions for Safe Handling and Use			
Steps to Be Taken in Case Material is Released or Spilled			
N/A			
Waste Disposal Method			
CONSULT FEDERAL, STATE AND LOCAL REGULATIONS			
Precautions to Be Taken in Handling and Storing			
AVOID REPEATED SKIN CONTACT. WEAR SUITABLE GLOVES. SAFETY GLASSES AND LONG SLEEVED SHIRTS ARE RECOMMENDED.			
Other Precautions			
N/A			
Section VIII—Control Measures			
Respiratory Protection (<i>Specify Type</i>)			
NIOSH APPROVED RESPIRATOR SELECTED ACCORDING TO OSHA 29 CFR 1910.134 IF PEL IS EXCEEDED			
Ventilation	Local Exhaust		
	AS REQUIRED TO MAINTAIN EXPOSURE BELOW PEL.		
Protective Gloves	HEAVY DUTY CLOTH OR LEATHER		Eye Protection
			SAFETY GLASSES/GOGGLES
Other Protective Clothing or Equipment, LONG SLEEVES AND WRISTLETS			
Work/Hygienic Practices			
WASH THOROUGHLY AFTER HANDLING, LAUNDRER CLOTHING AND GLOVES			
JUDGEMENTS AS TO THE SUITABILITY OF INFORMATION HEREIN OR THE PURCHASER'S PURPOSES ARE NECESSARILY THE PURCHASER'S RESPONSIBILITY. REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF THIS INFORMATION, BUT TSS EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF THIS INFORMATION FOR ANY PURCHASER'S USE OR FOR ANY CONSEQUENCE OF ITS USE.			

TSS: NICKEL/ZINC PLATED STEEL STRIP**SECTION VI - HEALTH HAZARD DATA (Continued from Page 3)****HEALTH HAZARDS & SIGNS & SYMPTOMS OF OVEREXPOSURE****ACUTE:****Iron Oxide**

- Irritation of eyes, nose and throat. Metallic taste or metal fume fever.

Nickel

- Irritation of eyes, nose and lungs. Sensitized individuals may experience allergic skin rash.
- Inhalation of nickel powder at concentrations 15 times the PEL irritated the respiratory tract of rodents.
- LD₅₀ - Oral Rat: > 9000 mg/kg

Zinc

- Irritating to skin on contact; dust may irritate respiratory tract.
- Inhalation may cause sweet taste, dry throat, cough, weakness, aching, chills, fever, nausea and vomiting.
- Fumes may cause metal fume fever.
- Ingestion may cause severe gastroenteritis.

Chromium

- Harmful if inhaled or swallowed.
- Contact with eyes may cause irritation

CHRONIC:**Iron Oxide**

- Pulmonary effects, siderosis.

Nickel

- Repeated skin contact with metallic nickel can cause nickel sensitivity and allergic skin rashes. Nickel metal powder has caused tumors at the site of injection in rodents, however, studies do not suggest a significant risk for humans from nickel containing prostheses.
- The National Toxicological Program has listed nickel as reasonably anticipated to be a carcinogen based on the production of injection-site tumors. The IARC found there was inadequate evidence that metallic nickel is carcinogenic to humans, but since there was sufficient evidence that it is carcinogenic to animals, IARC concluded that metallic nickel is possibly carcinogenic to humans. Epidemiological studies of workers exposed to nickel powder and to dust and fume generated in the production of nickel alloys and of stainless steel have not indicated the presence of a significant respiratory cancer hazard.
- The inhalation of nickel powder has not resulted in an increased incidence of malignant lung tumors in rodents.
- Repeated intratracheal instillation of nickel powder produced an increased incidence of malignant lung tumors in rats. Repeated intratracheal instillation of nickel powder did not produce an increased incidence of malignant lung tumors in hamsters when administered at the maximum tolerated dose. Single intratracheal installations of nickel powder in hamsters at doses near the LD₅₀ produced an increased incidence of fibrosarcomas, mesotheliomas and rhabdomyosarcomas.

Zinc

- Zinc is not listed as (IARC, NTP, OSHA) as a cancer causing agent.
- Respiratory conditions may be aggravated by exposure.

Chromium

- Recognized carcinogen per NTP and IARC
- Causes lung, kidney and liver damage (chronic or massive acute exposure)