

MATERIAL SAFETY DATA SHEET

GENERAL INFORMATION

MANUFACTURER: Various Manufacturers

DATE: 02/17/09

SECTION I – PRODUCT IDENTIFICATION

PRODUCT NAME: STEEL WIRE NAILS

SYNONYMS:

CHEMICAL NAME: N.A.

FORMULA: N.A.

SECTION II – HAZARDOUS INGREDIENTS

STEEL WIRE COMPOSITION:

<u>INGREDIENT</u>	<u>CAS NUMBER</u>	<u>WT%</u>	<u>PERMISSABLE AIR LEVEL</u>	
			<u>OSHA PEL</u>	<u>ACGIH TLV</u>
IRON	7439-89-6	BALANCE	10 MG/M3	5MG/M3
CARBON	7440-44-0	0-0.37	NA	3.5 (AS CARBON BLACK)
CHROMIUM	7440-47-3	0-0.10	0.1	0.05
COPPER	7440-50-8	0-.022	0.1	0.2
MANGANESE	7439-96-5	0-1.0	5	1
NICKEL	7440-02-0	0-0.10	1	1
SILICON	7440-21-3	0-0.30	10	10 (AS DUST)
ZINC	7440-66-6	1-4.5		
TRACE ELEMENTS (P, Mo, B, Sn, S)		0-1.10	NA	NA

GALVANIZING COATING IS 99% ZINC. ABOVE WT% IS TOTAL % ZINC OF ALL WIRE COMPONENTS.

SECTION III – PHYSICAL DATA

PHYSICAL STATE: SOLID

VAPOR PRESSURE: NA

BOILING POINT: NA

MELTING POINT: 2800 DEG F

% VOLATILE BY VOLUME: NA

APPEARANCE AND ODOR: GRAY-SILVER METAL, ODORLESS

SPECIFIC GRAVITY: 7.6-7.8

VAPOR DENSITY: NA

EVAPORATIVE RATE: NA

SOLUBILITY IN WATER: NA

PH: NA

SECTION IV – FIRE AND EXPLOSION HAZARDS

FLASH POINT: NA

AUTO-IGNITION TEMP: NA

SPECIAL FIRE PRECAUTIONS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

FLAMMABLE LIMITS: NA (IN AIR)

AVOID BREATHING METAL OXIDE FUMES WHICH MAY CAUSE METAL FUME FEVER (SEE SECTION V)
DO NOT USE WATER ON MOLTEN METALS

SECTION V- HEALTH HAZARD DATA

USUAL ROUTES OF ENTRY: INHALATION OR SKIN CONTACT

EFFECTS OF OVEREXPOSURE

IN THE INERT FORM, STEEL WIRE SHOULD NOT PRESENT ANY TOXIC EFFECTS, HOWEVER, HAZARDOUS FUMES OR DUSTS MAY RESULT DURING HEATING, GRINDING, CUTTING, WELDING, BRAZING, OR RELATED OPERATIONS. THE EFFECT OF OVEREXPOSURE TO STEEL WIRE FUMES OR DUSTS WOULD HAVE THE FOLLOWING ADVERSE HEALTH EFFECTS.

IRON:

A BENIGN LUNG CONDITION KNOWN AS SIDEROSIS CAN RESULT DURING LONG-TERM EXPOSURE TO IRON OXIDE FUMES OR DUSTS. IRON OXIDE IS THE RESULT OF SUBJECTING IRON AND ALLOYS TO HIGH TEMPERATURE IN THE PRESENCE OF OXYGEN AS IN A WELDING OPERATION.

MANGANESE (MN):

MANGANESE INTOXICATION IS USUALLY DUE TO THE OXIDE OR SALTS OF MN. ELEMENTAL MANGANESE EXHIBITS VERY LITTLE TOXICITY. THE DUSTS AND FUMES CAN ACT AS MINOR IRRITANTS TO THE EYES AND RESPIRATORY TRACTS. BOTH ACUTE AND CHRONIC EXPOSURES MAY ADVERSELY AFFECT THE CENTRAL NERVOUS SYSTEM, BUT SYMPTOMS ARE MORE LIKELY TO OCCUR AFTER AT LEAST 1 OR 2 YEARS OF PROLONGED OR REPEATED EXPOSURES. EARLY SYMPTOMS MAY INCLUDE WEAKNESS IN LOWER EXTREMITIES, SLEEPINESS, SALIVATION, NERVOUSNESS, AND APATHY. IN MORE ADVANCED STAGES, SEVERE MUSCULATORY INCOORDINATION, IMPAIRED SPEECH, SPASTIC WALKING, MASK-LIKE FACIAL EXPRESSION AND UNCONTROLLABLE LAUGHTER MAY OCCUR. MANGANESE FUMES HAVE ALSO BEEN REPORTED TO RESULT IN METAL FUME FEVER, A FLU-LIKE SYNDROME WITH INCIDENCE OF PNEUMONIA, BRONCHITIS, AND PNEUMONITIS HAS BEEN REPORTED IN SOME WORKER POPULATIONS EXPOSED TO MANGANESE. ANIMAL STUDIES INDICATE THAT MANGANESE EXPOSURE MAY INCREASE SUSCEPTIBILITY TO BACTERIAL AND VIRAL INFECTIONS.

COPPER (CU):

INHALATION OF CU FUME MAY CAUSE IRRITATION OF THE EYES, NOSE, AND THROAT AND A FLU-LIKE ILLNESS CALLED METAL FUME FEVER, SIGNS AND SYMPTOMS OF METAL FUME FEVER INCLUDE AND FEVER, MUSCLE ACHES, NAUSEA, CHILLS, DRY THROAT, COUGH AND WEAKNESS, CU FUME MAY ALSO PRODUCE A METALLIC OR SWEET TASTE, REPEATED OR PROLONGED EXPOSURE TO CU FUME MAY CAUSE DISCOLORATION OF THE SKIN AND HAIR.

CHROMIUM (CR):

THE TOXICITY AND HEALTH HAZARDS OF CHROMIUM ARE HEAVILY DEPENDENT UPON ITS OXIDATION STATE. THE ELEMENTAL (AS IN METAL), DIVALENT, AND TRIVALENT FORMS ARE OF VERY LOW TOXICITY. THE HEXAVALENT FORM (SUCH AS OCCURS IN CHROMATES AND CHROMIC ACID) IS VERY TOXIC AND CAN PRODUCE BOTH ACUTE AND CHRONIC EFFECTS. ADVERSE EFFECTS ON THE SKIN MAY INCLUDE ULCERATIONS, IRRITATIVE DERMATITIS AND ALLERGIC SKIN REACTIONS, ADVERSE EFFECTS ON THE RESPIRATORY SYSTEM MAY INCLUDE BRONCHOSPASMS, EDEMA, HYPERSECRETION, BRONCHITIS, IRRITATION, ALLERGIC ASTHMATIC REACTIONS AND PERFORATION OF THE NASAL SEPTUM. RESPIRATORY SYMPTOMS MAY INCLUDE COUGHING AND WHEEZING, SHORTNESS OF BREATH, AND NASAL ITCH. EYE IRRITATION OR INFLAMATION CAN ALSO BE PRODUCED. EXPOSURE TO SOME HEXAVALENT CHROMIUM COMPOUNDS HAS ALSO BEEN SHOWN TO BE ASSOCIATED WITH AN INCREASED RISK OF LUNG CANCER.

NICKEL (NI):

NI FUMES AND DUSTS ARE RESPIRATORY IRRITANTS AND MAY CAUSE A SEVERE PNEUMONITIS. SKIN CONTACT WITH NICKEL AND ITS COMPOUNDS MAY CAUSE AN ALLERGIC DERMATITIS. THE RESULTING SKIN RASH IS OFTEN REFERRED TO AS "NICKEL ITCH". NI AND ITS COMPOUNDS MAY ALSO PRODUCE EYE IRRITATION, PARTICULARLY ON THE INNER SURFACES OF THE EYELIDS (I.E., THE CONJUNCTIVE). ANIMAL AND/OR EPIDEMIOLOGY STUDIES HAVE LINKED NICKEL AND CERTAIN NICKEL COMPOUNDS TO AN INCREASED INCIDENCE OF CANCER IN THE LUNGS AND NASAL PASSAGES.

ZINC (ZN):

SUBJECTING ZINC OR ALLOYS CONTAINING ZINC TO HIGH TEMPERATURES IN THE PRESENCE OF OXYGEN (SUCH AS OCCURS DURING WELDING) WILL CAUSE THE FORMATION OF ZINC OXIDE, EXPOSURE TO ZINC OXIDE FUMES OR DUSTS CAN RESULT IN A FLU-LIKE ILLNESS CALLED METAL FUME FEVER. EARLY SYMPTOMS MAY INCLUDE A SWEET OR METALLIC TASTE IN THE MOUTH, DRYNESS AND IRRITATION OF THE THROAT, AND COUGHING. THESE SYMPTOMS MAY PROGRESS TO SHORTENING OF THE BREATH, HEADACHES, FEVER, CHILLS, MUSCLE ACHES, NAUSEA, VOMITING, WEAKNESS, FATIGUE, AND PROFUSE SWEATING. THE ATTACK MAY LAST 6-48 HOURS AND IS MORE LIKELY TO OCCUR AFTER A PERIOD AWAY FROM THE JOB.

SILICON – MAY PRODUCE X-RAY CHANGES IN THE LUNGS WITHOUT DISABILITY.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED: CHRONIC DISEASES OR DISORDERS OF THE RESPIRATORY SYSTEM.

CARCINOGENIC INFORMATION: NTP AND IARC CONSIDER CHROMIUM AND CERTAIN CHROMIUM COMPOUNDS TO BE KNOWN HUMAN CARCINOGENS.

EYE CONTACT: FLUSH WELL WITH RUNNING WATER TO REMOVE PARTICULATES.

SKIN CONTACT: WASH WELL WITH SOAP AND WATER.

INGESTION: MAY CAUSE IRRITATION OF MOUTH AND THROAT. CONSULT PHYSICIAN.

INHALATION: REMOVE TO FRESH AIR UNLESS PROPPER RESPIRATORY PROTECTION PROVIDED.

SECTION VI – REACTIVITY DATA

STABILITY: STABLE

POLYMERIZATION HAZARD: WILL NOT OCCUR

INCOMPATIBILITY: ACIDS. WATER REACTS VIOLENTLY WITH MOLTEN METALS.

HAZARDOUS DECOMPOSITION PRODUCTS: FUMES AND CERTAIN NOXIOUS GASES, SUCH AS CO, MAY BE PRODUCED FROM WELDING OR BURNING OPERATIONS. METAL OXIDE FUMES CAN RESULT IF TEMPERATURES EXCEED THE MELTING POINT FOR THE METAL.

SECTION VII – SPILLS, LEAKS, AND DISPOSAL

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED: SWEEP UP

WASTE DISPOSAL METHOD: ANY EXCESS WASTE PRODUCT CAN BE RECYCLED TO FURTHER USE, DISPOSED IN HAZARDOUS WASTE LANDFILL, OR DISPOSED BY OTHER METHODS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII – SPECIAL PROTECTION INFORMATION

VENTILATION: VENTILATION SHOULD BE SUFFICIENT TO MAINTAIN EXPOSURE LEVELS BELOW THE APPLICABLE EXPOSURE LIMIT. NIOSH APPROVED FUME AND DUST RESPIRATOR APPLICABLE LIMITS MAY BE EXCEEDED.

EYE PROTECTION: USE FACE SHIELD (8" MINIMUM) AND/OR GOGGLES WHEN WELDING, BURNING, CUTTING, OR GRINDING.

SKIN PROTECTION: USE APPROPRIATE PROTECTIVE CLOTHING SUCH AS WELDER'S APRONS, HATS AND GLOVES, WHEN WELDING OR BURNING.

SECTION IX – SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

ARC OR SPARK GENERATED WHEN WELDING OR BURNING ON THESE PRODUCTS COULD BE A SOURCE OF IGNITION FOR COMBUSTIBLE OR FLAMMABLE MATERIALS.

CUT ENDS MAY RESULT IN A LACERATION OR PUNCTURE HAZARD.

PACKAGED COILS MAY BE UNDER EXTREME INTERNAL STRESSES, USE STANDARD INDUSTRY PRACTICES FOR PROPER PROCEDURES FOR HANDLING, OPENING AND CUTTING, USE PROPER PERSONAL PROTECTIVE EQUIPMENT SUCH AS SAFETY GLASSES, GLOVES AND PROTECTIVE CLOTHING.

SECTION X – ADDITIONAL INFORMATION

MAINTAINING SUFFICIENT AIR LEVELS OF IRON OXIDE FUME AND DUSTS BELOW ITS TLV SHOULD BE SUFFICIENT TO CONTROL FOR AIRBORNE CONCENTRATIONS OF OTHER CONSTITUENTS.

NONMETALLIC COATINGS ARE APPLIED TO THE SURFACE OF STEEL WIRE. THESE ARE USUALLY CLASSIFIED AS PROTECTIVE COATINGS OR LUBRICANTS WHICH INCLUDE RUST PREVENTATIVE MINERAL OILS AND SODIUM SOAPS. THE PRESCENCE OF TRACE LEVELS OF THESE COATINGS SHOULD BE CONSIDERED WHEN EVALUATING POSSIBLE EMPLOYEE HEALTH HAZARDS DURING WELDING OR OTHER DUST AND FUME-GENERATING ACTIVITIES.

ABBREVIATIONS

DEGF – DEGREES FARENHEIT
NA – NOT APLLICABLE

MG/M3 – MILIGRAMS PER CUBIC METER
TLV – THRESHOLD LIMIT VALUE

SECTION XI – REGULATORY INFORMATION

RCRA – DEPENDING ON WASTE FORM, TOXICITY CHARACTERISTIC LIMITS FOR CERTAIN METALS MAY BE EXCEEDED, COMPLIANCE WITH LOCAL/STATE/FEDERAL REGULATIONS COVERING WASTE DISPOSAL IS REQUIRED.

EPCRA/SARA – THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF EPCRA SECTION 313 (40 CFR 372):

<u>CAS NUMBER</u>	<u>CHEMICAL NAME</u>	<u>MAX. WT. %</u>
7740-47-3	CHROMIUM	0.10
7439-96-5	MANGANESE	1.0
7440-02-0	NICKEL	0.10
7440-66-6	ZINC (FUME OR DUST)	4.5

THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR THE INTENT OF COMPLIANCE WITH THE PROVISIONS OF SUBPART Z OF PART 1910 OF TITLE 29 OF THE CODE OF FEDERAL REGULATIONS, SECTION 1910.1200.

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