



34 Barnhart Drive  
Hanover, PA 17331  
Telephone: 800- 232-3332

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## INSULATION & WIRE PRODUCTS DIVISION

MATERIAL SAFETY DATA SHEET- (PAGE 1 OF 4) Dated 01/01/12

PRODUCT NAME: STAINLESS STEEL WIRE

### SECTION 1 - HAZARDOUS INGREDIENTS (1)

THIS SECTION COVERS THE MATERIALS CONTAINED IN THE PRODUCT AS SHIPPED AND IS APPLICABLE TO MECHANICAL CUTTING OR GRINDING. THE FUMES AND GASES PRODUCED DURING WELDING ARE COVERED IN SECTION 4.

<u>CHEMICAL COMPONENT</u>	<u>CAS NUMBER</u>	<u>WT. %</u>	<u>OSHA PEL (2)</u>	<u>ACGIG TLV (3)</u>	<u>NTP LISTED</u>	<u>IARC LISTED (5)</u>
CHROMIUM	7440-47-3	20	NONE	0.5	YES	YES
NICKEL	7440-02-0	35	1.0	1.0	NO	YES
MOLYBDENUM	7439-98-7	10	15.0	10.0	NO	NO
COBALT	7440-48-7	35	0.1	.05	NO	NO

COATINGS: CERTAIN MATERIALS SUCH AS LIME, ALKALINE SALTS OR OILS AND CERTAIN RESIDUALS (<1% TOTAL WEIGHT OF PRODUCT) MAY REMAIN ON THE PRODUCT SURFACE.

### SECTION 2 - PHYSICAL DATA

ALLOY PRODUCTS ARE SOLID METALS IN WIRE FORM

### SECTION 3 - FIRE AND EXPLOSION HAZARD DATE

NONFLAMMABLE: HOWEVER, WELDING ARCS AND SPARKS CAN IGNITE FLAMMABLE LIQUIDS, VAPORS, AND COMBUSTIBLE SOLIDS.

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- NOTES:
1. AS DEFINED BY OSHA (29CFR1910.1200) OR CERTAIN STATE REGULATIONS.
  2. PERMISSIBLE EXPOSURE LIMIT - (MG/M) - OSHA (29CFR1910).
  3. THRESHOLD LIMIT VALUE - (MG/M) - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS.
  4. NATIONAL TOXICOLOGY PROGRAM - ANNUAL REPORT ON CARCINOGENS.
  5. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
  6. C VALUES ARE MAXIMUM (CEILING) LIMITS

SECTION 4 - REACTIVITY DATA

HAZARDOUS REACTION PRODUCTS:

WELDING

FUMES AND GASES FROM WELDING CANNOT BE CLASSIFIED SIMPLY. THE COMPOSITION AND QUANTITY OF BOTH DEPEND ON THE METAL BEING PROCESSED, PROCEDURES AND THE ELECTRODS USED. THE COSTITUENTS OF THE FUME ARE GENERALLY DIFFERENT FROM THE INGREDIENTS LISTED IN SECTION 1 AND MAY INCLUDE OXIDES OF THE MEALS, CHROMATES, FLUORIDES AND COMPLEX METALLICS. THE GASES MAY INCLUDE CARBON MONOXIDE, OXIDES OF NITROGEN AND OZONE. THE FOLLOWING EXPOSURE LIMITS APPLY TO THOSE FUMES AND GASES WHICH MAY BE FOUND IN THE WELDING ENVIRONMENT.

<u>CHEMICAL COMPONENT</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>NTP LISTED</u>	<u>IRAC LISTED</u>
CHROMIUM (CHROMATES)	0.1	0.05	YES	YES
COBALT FUME	0.1	0.05	NO	NO
MOLYBDENUM (SOLUBLE)	5.0	5.0	NO	NO
NICKEL (SOLUBLE)	1.0	0.1	NO	YES
NITROGEN DIOXIDES (NO)	C5.0PPM (6)	3.0PPM	NO	NO
OZONE (O)	0.1PPM	0.1PPM	NO	NO

(PEL/TLV VALUES ARE MG/M EXCEPT WHERE INDICATED AS PPM)

ACID PICKLING - THE REACTION BY-PRODUCTS MAY CONTAIN HEXAVALENT CHROMIUM WHICH IS A HAZARDOUS WASTE AND A SUSPECTED CARCINOGEN.

SECTION 5 - HEALTH HAZARD DATA

NO TOXIC EFFECTS WOULD BE EXPECTED FROM ITS INERT SOLID FORM. PROLONGED EXPOSURE TO DUSTS, FUMES AND GASES GENERATED DURING MECHANICAL CUTTING, GRINDING OR WELDING MAY CAUSE ADVERSE HEALTH EFFECTS SUCH AS RESPIRATORY, IRRITATION, IRRITABILITY, COUGHING, HEADACHES, NAUSEA, DIZZINESS OR FEVER. THESE EFFECTS ARE ASSOCIATED WITH THE FOLLOWING CHEMICAL COMPONENTS:

INHALATION:

CHROMIUM: THE DUSTS OF CHROMIUM METAL ARE USUALLY REPORTED TO BE RELATIVELY NON-TOXIC, ALTHOUGH THERE ARE REPORTS OF A NODULAR TYPE OF PULMONARY DISEASE WITH IMPAIRMENT OF LUNG FUNCTION. SOME INSOLUBLE CHROMIUM COMPOUNDS ARE SUSPECT CARCINOGENS.

NICKEL: RESPIRATORY IRRITATION AND PNEUMONITIS; SEVERAL NICKEL COMPOUNDS, INCLUDING NICKEL OXIDE, ARE SUSPECTED LUNG AND NASAL CARCINOGENS.

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MOLYBDENUM: IRRITATION OF THE NOSE AND THROAT, WEIGHT LOSS, AND DIGESTIVE DISTURBANCES IN ANIMALS. NO INDUSTRIAL POISONING HAS BEEN REPORTED.

COBALT: ASTHMA, MAY CAUSE INTERSTITIAL PNEUMONITIS AND SENSITIZATION OF THE RESPIRATORY SYSTEM.

SKIN CONTACT:

DERMATITIS DUE TO SENSITIZATION MAY OCCUR IN SOME INDIVIDUALS FROM EXPOSURE TO NICKEL AND CHROMIUM FUMES.

EYE CONTACT:

MAY CAUSE IRRITATION; CONJUNCTIVITIS; CORNEAL DAMAGE

INGESTION:

MAY CAUSE IRRITATION OF THE MOUTH AND THROAT.

NOTE: SOME CONSTITUENTS POSE MORE POTENTIAL HAZARDS THAN OTHERS, DEPENDING UPON THEIR INHERENT TOXICITY AND CONCENTRATION. OF SPECIAL CONCERN ARE CHROMIUM, NICKEL AND PERHAPS MANGANESE.

AGGRAVATION OF PREEXISTING RESPIRATORY OR ALLERGIC CONDITIONS MAY OCCUR IN SOME WORKERS.

SECTION 6 - SPILL OR LEAK PROCEDURES

COLLECT RESIDUE FROM CUTTING, GRINDING, OR WELDING OPERATIONS INTO A SUITABLE CONTAINER. DISPOSE OF IN ACCORDANCE WITH EPA OR LOCAL REGULATIONS.

SECTION 7 - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

NECESSARY WHEN PERMISSIBLE EXPOSURE LIMITS MAY BE EXCEEDED DURING CUTTING, GRINDING, OR WELDING. USE AIR-SUPPLIED RESPIRATOR IN CONFINED SPACES. - USE ONLY NIOSH APPROVED RESPIRATOR IN ACCORDANCE WITH 29CFR1910.134.

VENTILATION:

USE LOCAL EXHAUST WHEN CUTTING, GRINDING OR WELDING. IMPORTANT - MAINTAIN EXPOSURES BELOW THE LIMITS IN SECTION 1 AND 4. CONFINED SPACES REQUIRE SPECIAL ATTENTION TO PROVISION OF ADEQUATE VENTILATION.

EYE PROTECTION AND PROTECTIVE CLOTHING:

REQUIRED WHEN CUTTING, GRINDING, OR WELDING. WEAR GLOVES, FACE PROTECTION, AND FLAME RETARDANT CLOTHING. DO NOT EXPOSE SKIN. SELECT WELDING LENSE SHADE FROM AWS PUBLICATION F2.2.

SECTION 8 - EMERGENCY AND FIRST AID PROCEDURES

INHALATION: SEEK MEDICAL ATTENTION, IF NECESSARY.

SKIN: IF IRRITATION DEVELOPS, REMOVE CONTAMINATED CLOTHING IMMEDIATELY AND WASH CONTAMINATED SKIN WITH SOAP OR MILD DETERGENT AND WATER FOR FIVE MINUTES. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

EYES: IN CASE OF CONTACT, IMMEDIATELY WASH EYS WITH LARGE AMOUNTS OF WATER FOR FIFTEEN MINUTES, OCCASIONALLY LIFTING THE LOWER AND UPPER LIDS. SEEK MEDICAL ATTENTION, IF NECESSARY.

INGESTION: SEEK MEDICAL ATTENTION, IF NECESSARY.

SECTION 9 - SPECIAL PRECAUTIONS

IMPORTANT - MAINTAIN EXPOSURES BELOW THE PER/TLV. USE INDUSTRIAL HYGIENE AIR MONITORING TO ENSURE THAT YOUR USE OF THE MATERIAL DOES NOT CREATE EXPOSURES WHICH EXCEED PEL/TLV. ALWAYS USE EXHAUST VENTILATION. REFER TO THE FOLLOWING SOURCES FOR IMPORTANT ADDITIONAL INFORMATION:

ANSI Z49.1  
THE AMERICAN WELDING SOCIETY  
P.O. BOX 351040  
MIAMI, FL 33135

OSHA (29CFR1910)  
US DEPT. OF LABOR  
WASHINGTON, D.C. 20210

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