MATERIAL SAFETY DATA SHEET

Prepared to U.S.OSH,CMA, ANSI and Canadian WHMIS Standards.
This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard (29 CFR 1910.1200).
Other government regulations must be reviewed for applicability to these products.

WARNING: PRODUCT COMPONENTS PRESENT HEALTH AND SAFETY HAZARDS. READ AND UNDERSTAND THIS MATERIAL SAFETY DATA SHEET (M.S.D.S). ALSO, FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES. These products may contain Chromium or Nickel which are listed by OSHA, NTP, or IARC as being a carcinogen or potential carcinogen. Use of these products may expose you or others to fumes and gases at levels exceeding those established by the American Conference of Governmental Industries Hygienists (ACGIH) or the Occupational Safety and Health Administration (OSHA). The information contained herein relates only to the specific product. If the product is combined with other materials, all component properties must be considered.

SECTION I

1. IDENTIFICATION

TRADE NAME: Nickel 99, Nickel 55
PART NUMBER: 1-1701; 1-1701B; 1-1702; 1-1702B; 1-1707; 1-1708; 1-1721; 1-1721B; 1-1722; 1-1727and 1-1728
CHEMICAL NAME/CLASS: Coated Metal Alloy
CLASSIFICATION: AWS A5.15
SUPPLIER: K-T INDUSTRIES, INC.
ADDRESS: P.O. BOX 123 SHELDON, IOWA 51201
TELEPHONE: 712-324-5361 Emergency Phone Number: 712-324-5361

2. COMPOSITION and INFORMATION OF THE PRODUCT

CHEMICAL NAME	CAS#	EXPOSURE LIMITS IN AIR (mg/m3)	EXPOSURE LIMITS IN AIR (mg/m3)
		ACGIH TLV	OSHA PEL
Iron	7439-89-6	5	10
Nickel	7440-02-0	1	1
Copper	7440-50-8	1 (dust), 0.2 (fume)	1 (dust), 0.1 (fume)
Aluminum	7429-90-5	10 (dust), 5 (resp)	15 (dust), 5 (resp)
Calcium Fluoride	7789-75-5	2.5 (as F)	2.5 (as F)
Sodium Silicate	1344-09-8	NE	NE
Calcium Carbonate	1317-65-3	10	15 (dust), 5 (resp)
Silicon	7440-21-3	10	15 (dust), 5 (resp)
Graphite	7782-42-5	2 (dust)	15 mppcf
Barium Carbonate	513-77-9	0.5	0.5
Strontium Carbonite	1633-05-2	NE	NE

Manganese	7439-96-5	0.2	5
Potassium Silicate	1312-76-1	NE	NE

NE = Not Established resp = respiration
Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV).

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
These products consists of coated rods with no odor. There are no immediate health hazards associated with the wire or rod product. These products is not reactive. If involved in a fire, these products may generate irritating iron, nickel, and manganese fumes and a variety of metal compounds. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: During welding operations, the most significant routes of exposure are via inhalation of fumes.
INHALATION: Inhalation is not anticipated to be a significant route of over-exposure to the wire or rods. Inhalation of large amounts of iron generated by these products during metal processing operations, may result in iron pneumoconiosis (i.e., arc welders lung, a disorder of the lungs). Repeated over-exposures, via inhalation, to the dusts or fumes generated by these products may have adverse effects on the lungs, with possible pulmonary edema and emphysema (life- threatening lung injuries). Hypersensitivity to Nickel (a component of these products) is common and can cause pulmonary asthma and pneumonitis (an inflammatory disease of the lungs). Refer to Section 10 (Stability and Reactivity) for information on the specific composition of welding fumes and gases.
CONTACT WITH SKIN or EYES: Contact of the rod form of these products with the skin is not anticipated to be irritating. Contact with the rod form of these products can be physically damaging to the eye. Fumes generated during welding operations can be irritating to the skin and eyes. Prolonged exposure of the eyes to fumes generated by these products may result in sensitization, causing conjunctivitis (inflammation of the mucous membranes of the eyes). Symptoms of skin over-exposure may include irritation and redness; prolonged or repeated skin over-exposures may lead to dermatitis. Contact with the molten core rods will burn contaminated skin or eyes.
SKIN ABSORPTION: Skin absorption is not a significant route of over-exposure for any component of these products.
INGESTION: Ingestion is not anticipated to be a route of occupational exposure for these products.

INJECTION: Though not a likely route of occupational exposure for these products, injection (via punctures or lacerations in the skin) may cause local reddening, tissue swelling, and discomfort.
HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Symptoms associated with over-exposure to these products and the fumes generated during welding operations are as follows:
ACUTE: The chief acute health hazard associated with these products would be the potential for irritation of contaminated skin and eyes when exposed to fumes during welding operations. Inhalation of large amounts of iron dust generated by these products can result in iron pneumoconiosis (i.e., disease of the lungs). Contact with the molten material will burn contaminated skin or eyes.
CHRONIC: Chronic skin over-exposure to the fumes of these products during welding operations may produce dermatitis (red, inflamed skin). Repeated over-exposures to the fumes generated by these products via inhalation can have adverse effects on the lungs with possible pulmonary edema and emphysema. Repeated or prolonged ingestion exposures to > 50.100 mg of Iron per day can result in deposition of iron in the body tissues. Nickel (a component of these products) is potentially carcinogenic to humans. Hypersensitivity to Nickel is common and can cause allergic contact dermatitis, pulmonary asthma, conjunctivitis, and inflammatory reactions.
TARGET ORGANS: ACUTE: For fumes: Skin, eyes, respiratory system. CHRONIC: For fumes: Respiratory system, skin, pancreas, and liver.

SECTION II

4. FIRST-AID MEASURES
Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with victim.
SKIN EXPOSURE: If fumes generated by welding operations involving these products contaminate the skin, begin decontamination with running water. If molten material contaminates the skin, immediately begin decontamination with cold, running water. Minimum flushing is for 15 minutes. Victim must seek medical attention if any adverse reaction occurs.
EYE EXPOSURE: If fumes generated by welding operations involving these products enter the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek immediate medical attention.
INHALATION: If fumes generated by welding operations involving these products are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.
INGESTION: If swallowed call physician immediately! Do not induce vomiting unless directed by medical personnel. Rinse mouth with water if person is conscious. Never give fluids or induce vomiting if person is unconscious, having convulsions, or not breathing.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin, respiratory, pancreas, and liver disorders may be aggravated by prolonged over-exposures to the dusts or fumes generated by these products.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not flammable.
AUTOIGNITION TEMPERATURE: Not flammable.
FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): Not applicable.
Upper (UEL): Not applicable.
FIRE EXTINGUISHING MATERIALS:
Water Spray: YES Carbon Dioxide: YES
Halon: YES Foam: YES
Dry Chemical: YES Other: Any "ABC" Class
UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce irritating fumes containing iron, manganese, and nickel compounds. The molten material can present a significant thermal hazard to firefighters.
Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.
SPECIAL FIRE-FIGHTING PROCEDURES: Not applicable

SECTION III

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting these products ON YOU or IN YOU. Wash thoroughly after handling these products. Do not eat or drink while handling this material. Use ventilation and other engineering controls to minimize potential exposure to these products.
STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Use in a well-ventilated location. Avoid breathing fumes of these products during welding operations. Packages of these products must be properly labeled. Store packages in a cool, dry location. Storage in an atmosphere that is wet, moist, or high humidity may lead to corrosion of these products. Store away from incompatible materials.When these products is used during welding operations, follow the requirements of the Federal Occupational Safety and Health Welding and Cutting Standard (29 CFR 1910 Subpart Q) and the safety standards of the American National Standards Institute for welding and cutting (ANSI Z49.1).
PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Not applicable.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients). Prudent practice is to ensure eyewash/safety shower stations are available near areas where these products is used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed (i.e., a Weld Fume Respirator, or Air-Line Respirator for welding in confined spaces), use only protection authorized in 29 CFR 1910.134 or applicable State regulations. Respiratory Protection is recommended to be worn during welding operations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).For additional information, the NIOSH recommended protection guidelines for Nickel are provided as follows:
EYE PROTECTION: Safety glasses. When these products are used in conjunction with welding, wear safety glasses, goggles, or face-shield with filter lens of appropriate shade number (per ANSI Z49.1-1988, "Safety in Welding and Cutting").
HAND PROTECTION: Wear gloves for routine industrial use. When these products are used in conjunction with welding, wear gloves that protect from sparks and flame (per ANSI Z49.1-1988, "Safety in Welding and Cutting").
BODY PROTECTION: Use body protection appropriate for task.

10. STABILITY and REACTIVITY
STABILITY: Stable.
DECOMPOSITION PRODUCTS: Compounds of nickel, iron, and manganese.
NOTE: The composition and quality of welding fumes and gases are dependent upon the metal being welded, the process, procedure, and electrodes used. Other conditions that could also influence the composition and quantity of fumes and gases to which workers may be exposed include coatings on metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the work area, the quality of ventilation, the position of the welder's head with respect to the fume plume, and the presence of other contaminates in the atmosphere. When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 2 (Composition and Information on Ingredients). Fume and gas decomposition products, not the ingredients in the electrode, are important. Concentration of the given fume or gas component may decrease or increase by many times the original concentration. New compounds in the electrode may form. Decomposition products of normal operations include those originating from volatilization, reaction, or oxidation of the product's components, plus those from base metals, and any coating (as noted previously). The best method to determine the actual composition of generated fumes and gases is to take an air sample from inside the welder's helmet if worn or in breathing zone. For additional information, refer to the American Welding Society Publication, "Fumes and Gases in the Welding Environment".
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: These products is not compatible with strong acids, oxidizers, halogens, and phosphorous. Nickel (a component of these products) is not compatible with fluoride, hydrazine, performic acid, selenium, and sulfur.
HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid uncontrolled exposure to extreme temperatures and incompatible materials.

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