

Material Safety Data Sheet

Disclaimer

The products produced by Encore Wire Limited exhibit no specific hazard due to their construction beyond the hazards associated with the components used in their manufacture. This Material Safety Data Sheet (MSDS) is a compilation of the data contained in the individual component MSDS sheets and as such is reliant on the accuracy of those individual sheets. Under normal use there is no significant inherent hazardous exposure opportunity from the construction materials.

Section 1 – Product Identification

This MSDS reflects the components used in the manufacture of:

<u>Product</u>	<u>Normal Construction Components</u>
• NM-B	PVC, Nylon, Copper
• UF-B	PVC, Nylon, Copper
• THHN	PVC, Nylon, Copper
• SEU	PVC, Nylon, Copper, Polyethylene, Aluminum
• SER	PVC, Nylon, Copper, Polyethylene, Aluminum
• XHHW	Polyethylene, Copper, Aluminum
• USE	Polyethylene, Copper, Aluminum

Section 2 – Ingredients

The Components included are:

- Polyvinyl Chloride Compounds
 - Nylon
 - Copper
 - Polyethylene Compounds
 - Aluminum
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Section 3 – Physical Data

Polyvinyl Chloride Compounds

Specific Gravity: 1.1 to 1.6

Melting Point: 350° to 400° Fahrenheit

Nylon

Specific Gravity: 1.05 to 1.25

Decomposition Temperature: 300° Centigrade

Copper

Specific Gravity: 8.96

Melting Point: 1083° Centigrade

Cross-Link Polyethylene

Vinyltrimethoxysilane - Specific Gravity: 0.92 – 0.96

Dibutyltindilaurate/Antimony Trioxide mix - Specific Gravity: 1.72

Aluminum

Specific Gravity: 2.5 to 2.9

Melting Point: 900° to 1200° Fahrenheit

Section 4 – Fire and Explosion Data

Polyvinyl Chloride Compounds

Extinguishing media: Water spray, CO₂ or dry chemical fire extinguisher

Nylon

Flash point - 400° Centigrade

Fire extinguishing media: Water fog, foam, CO₂ or dry chemical extinguisher

Fire personnel should wear fire protective gear and self-contained breathing apparatus

Cross-Link Polyethylene

Flash point - 650° Centigrade

Extinguishing media: Water spray, CO₂ or dry chemical fire extinguisher

Dense smoke emitted when burned without sufficient oxygen. Possible dust explosion if fines accumulate.

Fire personnel should wear standard fire fighting attire.

Aluminum

Halogen acids and sodium hydroxide in contact with aluminum may generate explosive mixtures of hydrogen. Fines will form explosive mixtures in the air and in contact with bromides, iodates or ammonium nitrates. Strong oxidizers cause violent reactions with considerable heat generation. Burning aluminum may generate carbon monoxide, carbon dioxide and ozone nitrogen oxides.

Section 5 – Health Effects

Polyvinyl Chloride Compounds

Polyvinyl Chloride Resin – 30 to 60%

Inert fillers – 0 to 30% (CaCO₃, Clay)

Heat Stabilizers – 0 to 5% (Organometallic compounds of Lead, Calcium and/or Zinc)

Plasticizer – 20 to 40% (High Molecular Weight Esters)

Flame Retardant – 0 to 5% (Antimony Trioxide)

PVC compounds evolve hydrogen chloride, carbon monoxide and other hazardous byproducts when thermally degraded, exposure should be avoided. Exposure during handling should be controlled by wearing gloves. Washing the exposed surfaces can control the effects of contact with the material. Effort should be made to control nuisance dust and personal exposure to unavoidable nuisance dust limited by the use of respirators.

Nylon

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Overexposure Effects:

Caprolactam vapor may be released during processing. Dusts generated from mechanical processing may cause irritation to the eyes, skin or respiratory tract. The OSHA TWA and the ACGIH TLV for caprolactam vapor are 5 ppm.

First Aid Procedures:

Skin: Wash affected area with soap and water. Remove and launder contaminated clothing before reuse.

Eyes: Rinse eyes with running water for 15 minutes.

Inhalation: Move to fresh air.

Seek Medical attention if symptoms appear more than casual.

Copper

Acute Overexposure:

Inhalation of fumes may cause irritation of the respiratory tract and metal fume fever with symptoms of fever, chills, nausea, chest tightness or metallic taste. Ingestion of metallic copper could be moderately irritating to the gastrointestinal tract.

Chronic Overexposure:

Long-term overexposure to dust or fume may cause skin irritation or discoloration of the skin and hair.

Affected Medical Conditions:

Persons with Wilson's Disease could be affected by copper exposure.

First Aid Procedures:

Inhalation: Remove from exposure; place under the care of a physician.

Ingestion: Induce vomiting in a conscious individual and call a physician.

Skin or Eyes: Flush with plenty of water. If symptoms develop, consult a physician.

Cross-Link Polyethylene

Eyes: Flush for 15 minutes with water, get medical attention.

If swallowed: Induce vomiting.

Aluminum

Inhalation: Remove to fresh air; if condition continues, consult a physician.

Eyes: Flush thoroughly with running water to remove particulate; obtain medical attention.

Skin contact: Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.

Ingestion: If significant amounts of metal are ingested, consult a physician.

Section 6 – Reactive Data

Polyvinyl Chloride Compounds

Thermal degradation of this material produces Hydrogen Chloride, Carbon Monoxide and other common hazardous byproducts of combustion.

Nylon

Incompatible with strong oxidizing agents, acids and bases. Avoid prolonged exposure to extreme heat, dust accumulation and moisture during storage. Overheating may cause decomposition and the release of Hydrogen Cyanide, CO and Ammonia.

Copper

Contact with >52% hydrogen peroxide may cause a violent reaction, contact with acetylene may form unstable acetylides, copper foil burns spontaneously in gaseous chlorines and finely divided copper with finely divided halogenates may explode with heat, percussion or light friction. Hazardous oxide fines may evolve at temperatures above the melting point.

Cross-Link Polyethylene

Avoid contact with strong oxidizing agents. Decomposition generates Carbon dioxide, carbon monoxide, hydrogen bromide, methanol, oxides of antimony and trace volatile organics.

Aluminum

Halogen acids and sodium hydroxide in contact with aluminum may generate explosive mixtures of hydrogen. Fines will form explosive mixtures in the air and in contact with bromates, iodates or ammonium nitrate. Strong oxidizers cause violent reaction with considerable heat generation.

Section 7 – Personal Protection

Polyvinyl Chloride Compounds

Respiratory Protection: If dust is generated by handling.

Gloves and other protective clothing: avoid direct contact with lead stabilized compounds

Nylon

Gloves and apron to prevent contact during processing. When processing vapors are not adequately controlled, wear a NIOSH/MSHA approved organic vapor cartridge respirator. For excessive dust, wear a NIOSH/MSHA approved dust respirator. Use local exhaust to control the accumulation of dust or vapor during processing.

Copper

Local exhaust ventilation is recommended for dust and/or fume generating operations. Avoid inhalation or ingestion by practicing good housekeeping and personal hygiene procedures. Where airborne exposures may exceed OSHA/ACGIH permissible air concentrations, the minimum respiratory protection recommended is negative pressure air purifying respirator with cartridges that are NIOSH/MSHA approved against dust, fumes and mists having a TWA not less than 0.05 mg/cu m. Protective clothing is recommended for jobs with heavy dust exposure to prevent skin irritation. Contaminated clothing should be removed before leaving the plant premises.

Cross-Link Polyethylene

An approved respirator may be needed in areas with a high accumulation of fines.

Aluminum

Appropriate dust/mist/fume respirator should be used to avoid excessive inhalation of particulates. Safety glasses should be worn when cutting and glove worn when handling.

Section 8 – Spill / Leak / Environmental

Polyvinyl Chloride Compounds

Dispose of the THHN insulating material utilizing the correct procedures as required by EPA and DOT due to its Lead and Antimony Trioxide content.

Nylon

This material is not regulated by RCRA or CERCLA. Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

Copper

The LC50 for copper is the fathead minnow is 12 mg/L and is 3.5 mg/kg for a mouse. Acid solutions promote mobility and solubility of copper. Any method that keeps dust to a minimum is acceptable, do not use compressed air for cleaning.

Waste Disposal: If hazardous under 40 CFR 261, subparts B and C, material must be treated or disposed in a facility meeting the requirements of 40 CFR 264 or 265. If non-hazardous, material should be disposed in a facility meeting requirements of 40 CFR 257. If discarded in an unaltered form, material should be tested to determine if it must be classified as a hazardous waste for disposal purposes.

Cross-Link Polyethylene

Dispose of in accordance with local, state or federal regulations.

Section 9 –Storage and Handling

General storage procedures acceptable. Keep away from heat or flame.

Section 10 – Regulatory Information

Polyvinyl Chloride Compounds

Only the THHN insulating material contains EPA regulated materials (Lead and Antimony Trioxide).

Nylon

This material is not regulated by RCRA or CERCLA. CAS: 25038-54-4

Copper

This material is not regulated by DOT but is by SARA title III, sections 311, 312 & 313. RQ=5000lbs. CAS: 7440-50-8.

Cross-Link Polyethylene

Vinyltrimethoxysilane – CAS: 2768-02-7

Dibutyltindilaurate – 77-58-7

Antimony Trioxide – 1309-64-4

Section 11 – Transportation Information

All products are considered “Articles” and as such require no special transportation requirements.