



Types of Magnet Wire

Round insulated copper magnet wire in the size ranges of .47 MM to 3.20 MM. Products are custom designed to meet the specific needs of our customers. Magnet wire / winding wire is an insulated copper (or aluminum) electrical conductor used in motors, transformers and other electromagnetic equipment. When wound into a coil and energized, magnet wire creates an electromagnetic field.

PIW **Polyimide**

- Applications are hermetic & sealed units, high temperature continuous duty coils & relays.
- PIW is enameled with a polyimide resin having the highest heat resistance of the organic polymers made by reaction of aromatic tetracarboxylic acid dianhydride and aromatic diamine. PIW is very reliable in performance because it has excellent cut-through characteristic, over-load characteristic, and heat shock resistance.
- **Thermal class: 220°C**
- Best of all enameled wires in overload resistance.
- Outstanding cut-through characteristic and heat shock resistance.
- Exceptional resistance to chemical solvents.
- Class 2 (single build) size range: 0.18MM to 1.65MM
- Class 1 (heavy build) size range: 0.18MM to 3.20MM

PEWN **Polyester Nylon 155°C**

- Applications are general purpose motors, portable generators, dry-type transformers, electromagnetic solenoid coils, & motors for home use.
- Enameled with a polyester resin of the terephthalic acid group, PEWN is used as a general-purpose magnet wire for many applications.
- **Thermal class: 155°C**
- PEWN is much improved in surface smoothness and therefore can be coiled by automatic winding machinery.
- Class 2 (single build) size range: 0.20MM to 1.65MM
- Class 1 (heavy build) size range: 0.20MM to 1.65MM

HPEWN **Polyester Nylon 180°C**

- Applications are general purpose motors, portable generators, dry-type transformers, & electronics where solderability is not desired.
- HPEWN is a film insulation with a modified polyester basecoat and a nylon topcoat. It has become the standard of non-hermetic, fractional horse-power motors.
- **Thermal class: 180°C**
- Excellent cut through temperature.
- Excellent burnout resistance.
- Good thermal endurance.
- Class 2 (single build) size range: 0.18MM to 1.65MM
- Class 1 (heavy build) size range: 0.18MM to 2.30MM

Types of Magnet Wire - continued

FORMVAR Polyvinyl Formal

- Applications are oil-filled transformers, motors, random wound coils, & solenoids.
- Enameled with a polyvinyl formal resin, this wire excels in mechanical, electrical, and chemical properties. It can be coiled by automatic winding machinery and has a wide range of applications as a Class A general-purpose wire.
- **Thermal class: 105°C**
- Excellent windability
- Excellent resistance to hydrolysis and therefore usable in hermetic systems.
- Excellent abrasion and chemical resistance.
- Class 2 (single build) size range: 0.60MM to 1.65MM
- Class 1 (heavy build) size range: 0.60MM to 3.20MM

UEWN Polyurethane Nylon

- Applications are small motors, electronic relays, & encapsulated coils.
- UEW is a polyurethane base insulation enamel which allows conductor soldering without prior removal of the film from the wire. UEWN is a combination of polyurethane/polyamide insulation. The nylon provides improvement in windability and use in more severe winding operations.
- **Thermal class: 130°C / 155°C**
- Solderable with the coating not removed.
- Polyurethane nylon (UEWN) is much improved in surface smoothness and therefore can be coiled by automatic winding machinery under rigorous conditions.
- Excellent resistance to most common solvents.
- Class 2 (single build) size range: 0.04MM to 1.65MM
- Class 1 (heavy build) size range: 0.04MM to 2.60MM

HPEAIW Polyester Polyamide-imide

- Applications are heat-resistant motors for refrigeration, general heat-resistant motors & generators, dry-type transformers, oil-immersed transformers, & electrical appliances for use at hermetic, highly humid places.
- **Thermal class: 200°C**
- Improved abrasion resistance with internal lubricating film.
- Excellent dielectric properties.
- Resistance to crazing with common solvents as well as refrigerants.
- Class 2 (single build) size range: 0.05MM to 1.65MM
- Class 1 (heavy build) size range: 0.05MM to 3.20MM

Types of Magnet Wire - continued

AIW **Polyamide-imide**

- Applications are motors for refrigeration, motors for electric tools, heat-resistant motors, dry-type transformers, & oil-immersed transformers.
- Enameled with a polyamide-imide resin, AIW has extremely well-balanced properties as a heat-resistant magnet wire. It is the highest of all enameled wires in film strengths and excels in resistance to overload, hydrolysis.
- AIW is therefore recommended for use especially in appliances in which it is subjected to rigorous coiling and in hermetic appliances used at high temperatures.
- **Thermal class: 220°C**
- Excellent windability
- Next to PIW in overload resistance.
- Excellent abrasion resistance with internal lubricating film.
- Class 2 (single build) size range: 0.18MM to 1.65MM
- Class 1 (heavy build) size range: 0.18MM to 3.20MM

EIAIW **Polyester-imide Polyamide-imide**

- Applications are heat-resistant motors for refrigeration, general heat-resistant motors & generators, dry-type transformers, oil-immersed transformers, & electrical appliances for use at hermetic, highly humid places.
- EIAIW is an enameled wire for heat and refrigerant resistant applications, with a double coating composed of a lower layer of polyester-imide resin having a high heat resistance and an upper layer of polyamide-imide having a high refrigerant resistance and windability
- Thermal class: 200°C
- Excellent in windability
- Resistant to solvent caused crazing
- High resistance to freon refrigerants.
- Class 2 (single build) size range: 0.20MM to 1.65MM
- Class 1 (heavy build) size range: 0.20MM to 3.20MM

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