



Magnet Wire Substitutions in UL Electrical Insulation System

Use the following for **MW substitutions** into **established EIS**

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If this type / class is in the EIS	You can use these types / classes without additional testing. Substitutions are LIMITED to same Chemical Group only
All of the magnet wires in this Chemical Group are solderable Polyurethane (PU & PU/PA)	
MW 75 /130 (PU)	MW 28, MW 79, MW 80, MW 82 MW 83
MW 28*/130 (PU/PA)	MW 75, MW 79, MW 80, MW 82 MW 83
MW 79 /155 (PU)	MW 80, MW 82 MW 83
MW 80*/155 (PU/PA)	MW 79, MW 82 MW 83
MW 82 /180 (PU)	MW 83
MW 83*/180 (PU/PA)	MW 82
All of the magnet wires in this Chemical Group are solderable Polyesters (SP)	
MW 26 /155 (SP)	MW 27, MW 77, MW 78
MW 27*/155 (SP/PA)	MW 26, MW 77, MW 78
MW 77 /180 (SP)	MW 78
MW 78*/180 (SP/PA)	MW 77
All magnet wires in this Chemical Group are non-solderable Polyesters (P, P/PA, modified P or PEI or PEAI or PAI)	
MW 5 /155 (P)	MW 24, MW 30, MW 76, MW 35, MW 73, MW 74, MW 81, MW37-C, MW 35-A
MW 24*/155 (P/PA)	MW 5, MW 30, MW 76, MW 35, MW 73, MW 74, MW 81, MW37-C MW 35-A
MW 30 /180 (P)	MW 76, MW 35, MW 73, MW 74, MW 81, MW37-C, MW 35-A
MW 76*/180 (P/PA)	MW 30 MW 35, MW 73, MW 74, MW 81, MW37-C, MW 35-A
MW 35-C /200 (P/PAI) = MW 36-C	MW 73, MW 74, MW 81, MW37-C, MW 35-A
MW 73/200 (P/PAI)	MW 35, MW 74, MW81, MW37-C, MW 35-A
MW 74/200 (PEAI)	MW 35, MW 73, MW 74, MW 81, MW37-C, MW 35-A
MW 81/220 (PAI)	MW37-C, MW 35-A
MW 37-C/220(P/PAI)	MW 81, MW 35-A
MW 35-A/220(P/PAI) = MW 36-A	MW 81, MW 37-C
All magnet wires in this Chemical Group are non-solderable Polyimide (PI)	
MW 16 /240 = MW 20/240	No substitutions, no equivalent type

- * means this type of magnet wire has a PA = Polyamide overcoat or topcoat as a dry lubricant. (Example, Nylon is a Du Pont Trade Mark for PA)
- Magnet wire types not using PA as a dry lubricant commonly use light weight oils or waxes as a “wet” lubricant.
- All types of magnet wire listed above refer to Copper. In some specific cases where the letter “A” is listed = Aluminum wire only

Policies and Guidelines for Magnet Wire substitution - **It starts with the EIS**

1. Each EIS has specific magnet wire(s) in it. The manufacturer using the EIS can use any magnet wire which is in the EIS or can substitute any equal or higher grade **of the same Chemical Group**.
2. **No** magnet wire from a **different** Chemical Group can be substituted in place of a magnet wire in any EIS. The substitution is limited to and must be with other magnet wires in the same Chemical Group. If an EIS has wire from more than one Chemical Group then the substitution policy applies for each individual Chemical Group.
3. All substitutions are limited to the Chemical Group(s) which is (are) in the specific EIS. No magnet wires can be used in an EIS if the magnet wire is from a Chemical Group which is not in the EIS.
4. There is a policy in UL 1446 for the addition of Bondable or Self-Bonding magnet wire to be substituted into EIS. Refer to UL 1446 for the policy (UL policies are subject to change, UL 1446 should always be the reference for UL policy.) The designation for Self-Bonding grades are
MW 102-A (180-class) and
MW 102-C (180-class)
5. **MW 60-A = MW 61-A**, and
MW 60-C = MW 61-C are usable for any EIS which has Aromatic polyamide paper as a Ground Insulation
(Example, Nomex is a Du Pont Trade Name for this paper).
MW 62-A = MW 62-C, and
MW 63-A = MW 63-C, are wrapped with Aromatic polyamide tape. These wire constructions are usable for any EIS which has Aromatic polyamide paper as a Ground Insulation