

# ELTEK International Laboratories

## TEST LIST Component Compatibility Test Lab (Including Sealed Tube Testing)

### Compatibility Tests

ELTEK Labs conducts a wide range of compatibility tests to various industry standards. Compatibility refers to interactions such as:

- individual materials in different environments
- multiple materials within different environments
- two or more materials with each other in a “standard” environment
- an EIS in different environments
- multiple materials with an Electrical Insulation System (EIS)
- one material with one other material

Application areas such as:

- Oil for Oil Filled Transformers (OFT)
- Detergents for dish washing or clothes washing machines
- Refrigerants for cooling units
- Cleaning solutions/solvents
- Acidic or basic solutions; industrial applications
- Exposure to salt water

ELTEK Labs conducts compatibility tests in accordance with:

### Institute of Electrical / Electronics Engineers (IEEE)

IEEE 1043: Recommended Practice for Voltage-Endurance Testing of Form-wound Bars and Coils  
(Key Words: *Electrical Insulation Systems, EIS, environmental compatibility*)

### International Electrotechnical Commission (IEC)

IEC 61858: Thermal evaluation of modifications to an established wire-wound EIS  
(Key words: *EIS, Electrical Insulation Systems, thermal evaluation, wire-wound*)

### National Electrical Manufacturers Association (NEMA)

NEMA MW 1000: Magnet Wire; section 3.55 Refrigerant Extraction  
(Key words: *resistance, compatibility, extractibles, dielectric breakdown, R-22, R134A, R123, R-113, Parr, hermetic, MW-73, pressure vessel*)

NEMA RE-2 Electrical Insulating Varnishes; section 4.11: Refrigerant Resistance/Extractibles  
(Key words: *compatibility, extraction, dielectric breakdown, impregnating resins, solventless, solvent-based, R-22, R134A, R123, R-113, hermetic, Parr, pressure vessel*)

### American Society for Testing of Materials (ASTM)

ASTM method D 1676 Standard test methods for Film Insulated Magnet Wire; section 130 through 140  
(Key words: resistance, compatibility, extractibles, dielectric breakdown, R-22, R134A, R123, R-113, Parr, hermetic, MW-73, pressure vessel)

ASTM method D-5642: Standard Test Method for Sealed Tube Chemical Compatibility Test  
(Key words: magnet wire, substitution, EIS, candidate, control, adoption, twisted pair, component, components, major, minor, UL 1446, thermal aging, CCT, ASTM method D-149, ASTM method D-1676)

ASTM method D-4880: Standard Test Method for Salt Water Proofness of Insulating Varnishes Over Enamelled Magnet Wire  
(Key words: magnet wire, ASTM method D-4880, salt water proofness, insulating varnishes, enameled magnet wire)

ASTM method D-3455: Standard Test Method for Compatibility of Construction Materials with Electrical Insulating Oil of Petroleum Origin  
(Key words: magnet wire, interwinding insulation, EIM, Electrical Insulating Material, Oil Filled Transformers, OFT, dielectric breakdown, discoloration, dissipation factor, dielectric constant, interfacial tension, acid and base number)

ASTM method D-924: Standard Test Method for Dissipation Factor (or Power Factor) and Relative Permittivity (Dielectric Constant) of Electrical Insulating Liquids  
(Key words: Oil Filled Transformers, OFT, oil compatibility, EIM, Electrical Insulating Material)

ASTM method D-971: Standard Test Method for Interfacial Tension of Oil Against Water by the Ring Method  
(Key words: Oil Filled Transformers, OFT, oil compatibility, EIM, Electrical Insulating Material, surface tension)

ASTM method D-2305: Standard Test Methods for Polymeric Film used for Electrical Insulation; sections 64 through 69  
(Key words: resistance, compatibility, extractibles, dielectric breakdown, R-22, R134A, R123, R-113, Parr, hermetic, MW-73, pressure vessel, ASTM D-1676, xylene)

ASTM method D-5637: Standard Test Method for Moisture Resistance of Electrical Insulating Varnishes  
(Key words: bond strength, helical coil, compatibility)

ASTM method D-5638: Standard Test Method for Chemical Resistance of Electrical Insulating materials  
(Key words: bond strength, helical coil, compatibility)

## UL

UL 1446: Systems of Insulating Materials – General; section 14: Sealed tube testing  
[Key words: magnet wire, substitution, EIS, candidate, control, adoption, twisted pair, component, components, major, minor, ASTM method D5642, thermal aging, CCT)

UL 984: Hermetic Refrigerant Motor – Compressors; Section 41 Compatibility test  
(Key words: EIS, Oil, R-123, R-134A, R-22, R-11, R-404)

UL 2157: Electric Clothes Washing Machines and Extractors; section 32 Polymeric Materials, subsections.32.2.4 through 32.2.7  
(Key words: detergent, compatibility, bleach, EIM, Electrical Insulating Material)

UL 749: Dish Washing Machines; section 30: resistance to heat, fire, and cracking – polymeric materials; subsection 30.7 through 30.12  
(Key words: soap, detergent, bleach, compatibility, Electrical Insulating Materials)



**Vr. 1.11.12/CCT**

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