ELECTRICALLY INSULATING FILMS

KARL SCHUPP AG

CONDUCT – PROTECT – INSULATE



Kapton® polyimide film combines properties that are otherwise not found in this unique combination in polymer film materials. Kapton® polyimide film is produced by polycondensation of an aromatic dianhydride and an aromatic diamine. A crystalline structure is formed by chemical reaction and an amorphous film structure by thermal conversion. In addition, special manufacturing processes - based on the basic type - allow the properties to be adapted to a wide range of applications.

Kapton® polyimide films

Technical Specifications

- Kapton® can be used for short periods from -269 °C to +400 °C; continuous temperature resistance up to +230 °C.
- Kapton® is flame retardant, self-extinguishing and only begins to char at 800 °C. Kapton® has no melting point.
- Kapton® offers a high degree of chemical resistance; an organic solvent is not yet known.
- Kapton® has a high resistance to radioactive irradiation.
- Kapton® is the only film that is resistant to corona discharges (for type CR).
- Kapton® is UL-approved (file no. E39505).

The ability to maintain its excellent chemical, mechanical and electrical properties over a wide temperature range opens up a wide range of design and application possibilities for Kapton®. Kapton® polyimide film is particularly suitable for applications that are characterized by high operating temperatures and where other plastic films fail. The Kapton® properties can be adapted by: antistatic finishing, color pigmentation, electrically conductive fillers

Kapton® types and their areas of application

Standard types

Type	Characterization	Application
Kapton® HN	Polyimide base film	Insulation of wires, conductors, cables, windings, motor slots, magnetic coils, transformers and capacitors
Kapton® FN	Polyimide film with heat-sealable Teflon® coating	Insulation of highly heat-resistant wires, cables and flat cables; cover tapes

Kapton® special types

Kapton® CR	Corona-resistant polyimide film	Insulation of profile conductors and cables - especially in electrically highly utilized systems, particularly resistant to partial discharge.
Kapton® FCR	Kapton® CR with heat-sealable Teflon® coating	Insulation of profile conductors and cables - especially in electrically highly utilized systems
Kapton® MT	Polyimide film with high thermal conductivity	Motor winding insulation, carrier film for flexible base materials
Kapton® FMT	Kapton® MT with heat-sealable Teflon® coating	Heating elements, sensors
Kapton® HPP-ST	Polyimide film with high dimensional stability and surface treatment for good bondability	Laminate production and special applications with high dimensional stability requirements
Kapton® XC	electrically conductive, antistatic polyimide film	antistatic cover film for use at high temperatures in electronics production
Kapton® CB	black polyimide film	thermal protection
Kapton® MTB	black polyimide film with high thermal conductivity and very good adhesive properties	Speaker coils, insulation applications with difficult adhesive joints
Kapton® BCL-Y	pigmented polyimide film, printable	Bar code labels