DuPont™ Kapton® 150FWN019

MAGNET WIRE INSULATION

Characteristics

- Excellent scrape abrasion resistance
- High bond strength, heat fusible
- UL 94 V-0 compliance
- High dielectric strength
- High wire production yields

Constructions

Kapton® 150FWN019 film is 1.0 mil (.001 in.) Kapton® polyimide film, dispersion coated with 0.5 mil (.0005 in.) of enhanced FEP fluoropolymer on one side (see **Figure 1**).

Packaging

Kapton® 150FWN019 polyimide insulation film can be supplied in a wide range of widths in universal, Step-Pac® and pad rolls.

Processing

Kapton® 150FWN019 can be easily processed on most tape wrapping machines using either induction or radiant heat. Processing conditions are very similar to standard Kapton® FN films.

Storage Conditions and Shelf Life

Proper storage of Kapton® film can impact its performance. Kapton® 150FWN019 should not be exposed to ultraviolet radiation as from direct sunlight or to conditions of high humidity for extended periods of time. The shelf life for properly stored Kapton® in typical warehouse temperatures should be in excess of 20 years. Rolls should be kept wrapped in storage to prevent surface contamination.

Description

DuPont™ Kapton® 150FWN019 is a two-layer, polyimide, FEP fluoropolymer dispersion-coated heat-fusible composite film with a unique balance of excellent physical, electrical, thermal durability and chemical resistance properties. 150FWN019 has superior scrape abrasion resistance and motor manuacturers have reported that wire insulated with 150FWN019 exhibits lower frictional properties than wire insulated with other commonly used polyimide materials. 150FWN019 is ideal for demanding magnet wire applications. and for difficult-to-wind motors.

Safe Handling

Proper care should be taken when handling Kapton® polyimide film. Consult the brochure "DuPont™ Kapton® Safety and Handling in Use", H-97927.

Figure 1. Construction of Kapton® 150FWN019

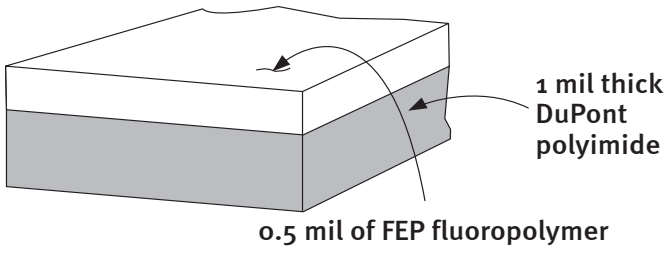

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Table 1
Typical Properties of Kapton® 150FWN019

Property	Typical Value	Test Method
Mechanical		
Tensile Strength, Kpsi/Mpa	17.3/119	ASTM D-882
Tensile Modulus, Kpsi/Gpa	170/1.18	ASTM D-882
Elongation to break, %	55	ASTM D-882
Specific Gravity, gms/cc	1.68	ASTM D-1505-90
Thickness, mils/microns	1.50/38	DuPont
Electrical		
Dielectric Strength, V/mil (kV/mm)	>3600 (>142)	ASTM D-149
Dielectric Constant @ 1Khz	<3.0	ASTM D-150
Dissipation Factor	<0.002	ASTM D-150
Volume Resistivity , ohm-cm	>10 E16	IPC-TM-650
Thermal		
Melting Point, polyimide, °C	none	ASTM E-794
Melting Point, FEP, °C	>257	ASTM E-794
Flammability, UL rating	94V-0	UL-94
Mechanical, °C	200	
Glass Transition Temperature, °C	>350	
Chemical (polyimide only)		
Moisture Absorption @ 100%RH, %	<2.2	ASTM D-570
Water Vapor Permeability, gms/m²/day	<10	ASTM E-96
Hydroscopic Coefficient of Expansion, ppm/%RH	<12	DuPont
Heat Seal Strength		
Minimum Heat Seal Strength (FEP to FEP), gms/cm	>235	DuPont
Minimum Heat Seal Strength (FEP to Kapton®), gms/cm	>235	DuPont

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H-78319-01 (03/05)

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