

PRODUCT DESCRIPTION - DATA SHEET

PolyLine™ FR250W flame-retardant film is an opaque, thin-gauge polycarbonate film with a velvet finish on one side and a polish finish on the other, and a UL94 V-0 listing to meet the stringent requirements in a wide range of electrical, electronic and transportation applications. PolyLine™ FR250W film offers improved score and bend fabrication capability to ease of thermoforming, hydroforming, embossing, die-cutting, folding, and bending. It is suitable for applications such as printed circuit board insulation, backlit aircraft in-flight panels and displays, business equipment insulation, computer rack partitions, and TV and monitor insulation. Standard available colors include black, white, light grey, and dark grey.

| Properties | ASTM Test Method | Unit | Value | ISO Test Method | Unit | Value |
|---|--------------------|----------------------|----------|-----------------|-------------------|---------|
| Physical Properties | | | | | | |
| Density | ASTM D792 | slug/ft ³ | ≥1.2 | ISO 1183 | kg/m ³ | 1344 |
| Water Absorption, 24 hrs. | ASTM D570 | % change | -- | ISO 62 | % change | 0.28 |
| Surface Energy(1st surface/ 2nd surface) | ASTM D5946-01 | - | -- | | | |
| Surface Tension(1st surface/ 2nd surface) | Dyne Pens | Dyne | ≤0.35 | | | |
| Mechanical Properties | | | | | | |
| Tensile Strength @ Yield | ASTM D882 | psi | 10000 | ISO 527 | MPa | 70 |
| Tensile Strength @ Ultimate | ASTM D882 | psi | 8700 | ISO 527 | MPa | 60 |
| Tensile Modulus | ASTM D882 | psi | 319000 | ISO 527 | MPa | 2200 |
| Tensile Elongation at Break | ASTM D882 | % | 100-160 | ISO 527 | % | 100-155 |
| Gardner Impact Strength at 0.03"(0.75 mm) | ASTM D3029 | ft-lb | 21 | ISO 6603-1 | J | 28 |
| Tear Strength (Initiation) | ASTM D1004 | lb/mil | 1.4 -1.8 | | kN/m | 298 |
| Tear Strength (Propogation) | ASTM D1922 | g/mil | 30-55 | | kN/m | 2-5 |
| Puncture Resistance (Dynatup) | ASTM D3763 | ft-lb | 9 | | J | 12 |
| Fold Endurance (MIT) 0.010" (0.25 mm) | ASTM D2176-69 | double folds | 45 | | | |
| Fold Endurance (MIT) 0.020" (0.50 mm) | ASTM D2176-69 | double folds | 20 | | | |
| Optical Properties | | | | | | |
| Gloss over Flat Black min/max @ 60° | ASTM D523-60 | - | 7 | ISO 2813 | * | 7 |
| Thermal Properties | | | | | | |
| Coefficient of Thermal Conductivity | ASTM D5470 | Btu/hr/ft2/°F/in | 1.35 | ISO 11359 | W/m°K (x10-5/°C) | 0.2 |
| Coefficient of Thermal Expansion | ASTM E831 | (x10-5/°F) | 3.2 | | W/m°K (x10-5/°C) | 5.8 |
| Specific Heat @40°F (4°C) | ASTM E1269 | Btu/lb/°F | 0.3 | | KJ/Kg-°C | 1.25 |
| Glass Transition Temperature | ASTM D3417 / D3418 | °F | 307 | ISO 11357 | °C | 153 |
| Vicat Softening Temperature, B | ASTM 1525-00 | °F | 347 | | °C | 175 |
| Heat Deflection Temp. by TMA at 1.8 Mpa | modified | °F | 290 | ISO 75 Modified | °C | 145 |
| Shrinkage at 302°F (150°C) | ASTM D1204 | % | 0.02 | | % | 0.02 |
| Brittleness Temperature | ASTM D746 | °Ft | -211 | | °C | -135 |

POLYLINE™ FR250W
 Velvet/Polished Opaque FR Polycarbonate Film



UL Flammability Rating / Performance Levels

| Thickness | Rating | HWI | HAI |
|--|----------|-----|-----|
| >= 0.010" (0.250mm) and < 0.015" (0.375mm) | ULV94V-0 | 1 | 0 |
| > 0.015" (0.375mm) | UL94V-0 | 0 | 0 |

CTI: 3

File Number: E61257

Manufacturing Specifications

| Nominal Gauge Ranges | Min./Max Limit of Nominal |
|----------------------------------|---------------------------|
| 0.010 - 0.030" (0.250 - 0.750mm) | -/+ 5% |

| Properties | ASTM Test Method | Unit | Value | ISO Test Method | Unit | Value |
|---|----------------------------|----------|----------|-----------------|----------|----------|
| Electrical Properties | | | | | | |
| Dielectric Strength in oil, short time @ 72°F (23°C), 10 mils (0.25mm) | ASTM D 149-97a Method A | kV/mil | 1.5 | IEC 60243 | kV/mm | 59 |
| Dielectric Constant @ 60 Hz | ASTM D150 | - | 2.9 | IEC 60250 | - | 2.9 |
| @1,000,000 Hz | ASTM D150 | - | 2.8 | IEC 60250 | - | 2.8 |
| Dissipation Factor @ 60 Hz | ASTM D150 | - | 0.0026 | IEC 60250 | - | 0.0026 |
| @1,000,000 Hz | ASTM D150 | - | 0.0117 | IEC 60250 | - | 0.0117 |
| Volume Resistivity | ASTM D257 | W-cm | 1.00E+17 | IEC 60093 | W-cm | 1.00E+17 |
| Surface Resistivity | ASTM D257 | W/square | 1.00E+16 | IEC 60093 | W/square | 1.00E+16 |
| Arc Resistance, Tungsten Electrodes | ASTM D495 | s | 64 | | | |

CONTACT US:

Stockholmer Platz 1, 70173, Stuttgart, Germany
 +49 711 87089000
 info@apspolymer.de
 www.apspolymer.de

For UK:

www.apspolymer.co.uk
 sales@apspolymer.co.uk

