



Saint-Gobain  
Performance Plastics  
Specialty Films  
and Tapes

# Fluorglas<sup>®</sup> ChemFilm<sup>®</sup>

**Advanced**

**Materials for**

**Your Wire and**

**Cable Needs**

# Fluorglas<sup>®</sup>, ChemFilm<sup>®</sup>

## Advanced Materials for Your Wire and Cable Needs

Saint-Gobain offers a full line of high performance films for use in manufacturing wires and cables.

### EXTRUDED UNSINTERED PTFE FILMS

#### Full Density

Unsintered tape is used as primary insulation for high-temperature wires, jackets and cables and wall for convo-

luted hose. They meet the requirements of component insulation to MIL-W-16878/4A, MIL-W-22759B and NAS703 and are available in white, natural, and many colors to round out your selection. Premium grades include R128-white and natural, R129-colors. Standard grades include R131 and R132.

#### Expanded

Unsintered Films are used in microwave and coaxial cable applications in which low dielectric constant and high velocities are required. R167-nominal density of 0.7 g/cc. R165-nominal density of 0.5 g/cc.

### SKIVED SINTERED PTFE FILMS

Used as barrier and insulation tapes for wire and cable, as well as the primary wall material for convoluted hose, skived sintered films meet the requirements of MIL-P-22241B, type II, grade A and MIL-W-22759. R19 Virgin skived tapes and S-100 Virgin skived film have enhanced sealing capabilities.

### EXTRUDED FULL DENSITY R128 AND R129 SERIES—PREMIUM GRADE

Total Thickness (in./mm)	Specific Gravity (grams/cc)	Longitudinal Tensile (psi)	Elongation Percent	Width Tensile (psi)	Approximate Yield (sq. ft./lb.)
.002 / .051	1.6	2500	75	250	60.2
.003 / .076	1.6	2300	125	275	40.1
.004 / .102	1.6	2200	125	350	30.1
.005 / .127	1.6	1900	150	350	24.1
.010 / .254	1.6	1000	300	375	12.0

### EXTRUDED EXPANDED R167 SERIES

Total Thickness (in./mm)	Specific Gravity (grams/cc)	Longitudinal Tensile (psi)	Elongation Percent	Width Tensile (psi)	Approximate Yield (sq. ft./lb.)
.004 / .102	0.7	3200	75	125	68.7
.005 / .127	0.7	2900	75	125	54.9
.006 / .152	0.7	2700	75	150	45.8
.008 / .203	0.7	2400	100	150	34.3
.010 / .254	0.7	1700	125	150	27.5

### SKIVED SINTERED PTFE TAPE R191

Total Thickness (in./mm)	Specific Gravity (grams/cc)	Longitudinal Tensile (psi)	Elongation Percent	Width Tensile (psi)	Approximate Yield (sq. ft./lb.)	Dielectric Strength (vppm)
.001/ .025	2.2	5000	275	—	86.80	4000
.002 / .051	2.2	5600	300	—	43.40	4000
.003 / .076	2.2	6000	300	—	28.90	2800
.005 / .127	2.2	6000	350	—	17.60	2000
.010 / .254	2.2	6000	350	—	8.68	1700

## CHEMFILM® FLUOROPOLYMER CAST FILMS AND TAPES FOR WIRE AND CABLE INDUSTRY

Multi-layer cast film process ensures inherently pin-hole free structure, therefore cast films possess superior dielectric properties. The multi-layer process is ideal for bulk and surface properties suited to most demanding applications.

### DF1400 Series — Low noise cable applications

The DF1400 has a non-conductive, fully fused, PTFE core coated with a conductive fluoropolymer formulation

designed to be applied over jacketed wire and cable using standard tape-wrap equipment. It may be made bondable with FEP or PFA.

The DF1471 is a fully conductive PTFE that is also available with a conductive FEP surface.

### DF1700/1900 Series

These films have a PTFE core with a thin layer of FEP or PFA (DF1700P) on one surface, which makes them heat bondable. Double bondable (DB) films are also available with PFA on both surfaces or FEP on one surface and PFA on the other surface. Laser markable (LM) films are also available.

### DF2000 Series

Combines fluoropolymers with the highest temperature rating and the best electrical properties with the mechanical integrity and dielectric strength of polyimide film. Heat sealable surfaces allow these tapes to be sealed to itself and other layers of fluoropolymer tape wrap insulation at regular wire processing temperatures and the fully sintered fluoropolymer base resin enables the films to be wrapped directly over the conductor.

### DF2919/2929 Performance:

**Test programs in both military and commercial aircraft markets indicate the benefits of a proper ratio between fluoropolymers and polyimides to give maximum protection against arc propagation and failure.**

Film Type	Tensile Strength (psi)	Elongation (%)	Elastic Modulus (psi)	Continuous Service Temp.	Dielectric Constant 60-108 HZ	Power/Dissipation	Surface Resistivity	Volume Resistivity	Dielectric Strength (volts/mil)	Available Gauge (mil)
DF1400	4,000	400	60,000	-400°F, +500°F	12.0	0.036	Conductive	Conductive	4,200	2.5
DF1471	4,000	400	60,000	-400°F, +500°F	12.0	0.036	Conductive	Conductive	—	1.0-4.0
DF1700	4,300	400	60,000	-400°F, +500°F	2.0	<0.0001	1 x 10 <sup>18</sup>	>10 <sup>15</sup>	4,200	0.5-5
DF1900	4,300	400	60,000	-400°F, +500°F	2.0	<0.0001	1 x 10 <sup>18</sup>	>10 <sup>15</sup>	4,200	1-5
DF2919	18,000	100	250,000	-400°F, +500°F	2.6	0.010	4.5 x 10 <sup>17</sup>	N/A	6,000	2.0
DF2929	21,000	100	350,000	-400°F, +500°F	2.8	0.013	3.8 x 10 <sup>17</sup>	N/A	5,100	3.0

Available in slit widths down to 1/8", supplied in flat pad rolls or universal traverse packages.

## Superior Winding Technology

Saint-Gobain now offers the industries' most advanced winding technology for extruded, skived and cast films. State-of-the-art slitting provides an unlimited range of pitch, overlap, tension and other programmable variables to best suit the product and the customer's requirements. This means thinner films, narrower widths and longer lengths with more stable packages. Ask about our capabilities. The typical parameters are as follows:

Product	Thickness Range mils	Widths	
		Traverse	Flat Pad
<b>Extruded, Full Density</b>	2 mil–10 mil	1/16"–3/4"	1/4" and up
<b>Extruded, Expanded</b>	4 mil–10 mil	1/16"–3/4"	3/8" and up
<b>Skived</b>	1 mil–10 mil	1/16"–3/4"	3/8" and up
<b>Cast</b>	0.5 mil–5 mil	1/16"–3/4"	1/4" and up



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