



The **Flametek®** family of Fire Retardant plastics have been specially formulated to provide protection against the spread of fire or flames. All of the materials shown below are listed with **FM Global** (formerly Factory Mutual Insurance Company) as compliant to **FM4910 requirements**. When **FM4910 listed materials** are used for construction in an area, fire suppression systems are not required.

The Cleanroom Materials Flammability Test Protocol (Class 4910) contains the method for conducting tests. Now, wet-bench manufacturers and users can apply the cleanroom protocol to develop plastic materials and equipment capable of resisting fire, emitting little, if any smoke, and producing little, if any, corrosive by-products. Materials passing the cleanroom protocol, subsequently, can be listed in the Approval Guide, a publication of FM Approvals.

GENERAL PROPERTIES	ASTM or UL Test	KYTEC PVDF	OPAQUE HALAR ECTFE901	CLEAR HALAR ECTFE 453	FR-CP-7-D PP	CORZAN 4910 CPVC
<b>PHYSICAL</b>						
Specific Gravity (g/cm <sup>3</sup> )	D792	1.78	1.68	1.68	1.36	1.56
Water Absorption, 24 hrs (%)	D570	0.02	<0.01	<0.01	–	–
<b>MECHANICAL</b>						
Tensile Strength at Yield (psi)	D638	6,000	4,300	4,400	2,500	7,900
Tensile Modulus (psi)	D638	–	–	–	–	–
Flexural Strength (psi)	D790	22,000	–	–	–	14,500
Flexural Modulus (psi)	D790	30,000	245,000	180,000	400,000	457,000
Compressive Strength (psi)	D695	8,500	–	–	–	–
Hardness, Shore D	D785	78	71	71	67	–
IZOD Notched Impact (ft-lb/in)	D256	2.0	n.b	n.b	8.0	1.5
<b>THERMAL</b>						
Coeff. of Thermal Expansion(x 10 <sup>-5</sup> in./in./°F)	D696	6.0	5.6	5.6	–	3.7
Heat Deflection Temp (°F / °C)	D648	270 / 132	194 / 90	120 / 49	284 / 120	212 / 100
Melting Temperature (°F / °C)	–	332 / 166	285 / 140	430 / 221	–	–
Max Use Temperature (°F / °C)	–	–	300 / 149	140 / 60	290 / 143	190 / 88
<b>ELECTRICAL</b>						
Dielectric Strength (@ 1/8" thick) (V/mil)	D149	310	–	–	–	–
Dielectric Constant at 1 kHz	D150	6.9	–	–	–	–
Dielectric Factor at 1 kHz	D150	0.013	–	–	–	–
Arc Resistance (sec)	D495	50	–	–	–	–
Volume Resistivity (ohm/cm) @ 50% RH	D257	1.4 x 10 <sup>15</sup>	–	–	–	–
<b>FM4910 FLAME CLASSIFICATION</b>						
Flame Propagation Index (FPI)	FM4910	5.2	4.0	4.0	4.4	1.2
Smoke Damage Index (SDI)	FM4910	0.20	0.15	0.15	0.20	0.02
Corrosion Damage Index (CDI)	FM4910	1.0	1.0	1.0	0.60	1.1

NOTE: The information contained here in is typical values intended for reference only. They should NOT be used as a basis for design specifications or quality control.