



**HSM Wire International, Inc**

Ph: 330-244-8501 Fax: 330-244-8561

www.hsmwire.com

## Characteristics of Insulating and Extruded Materials for High Temperature Materials

Designation			Electrical				
VDE Code	Abbrev.	Materials	Density	Break-Down Voltage	Specific Volume Resistivity	Dielectric Constant	Dielectric Loss – factor
			g/m <sup>3</sup>	KV/mm (20°C)	Ohm · cm (20°C)	50 Hz/20°C	Tan δ
10Y	PVDF	Polyvinylidene fluoride Kynar/Dyflor	1.7 – 1.9	25	10 <sup>14</sup>	9 – 7	1.4 x 10 <sup>-2</sup>
7Y	ETFE	Ethylene-Tetrafluorethylene	1.6 – 1.8	36	10 <sup>16</sup>	2.6	8 x 10 <sup>-4</sup>
6Y	FEP	Fluorine ethylene propylene	2.0 – 2.3	25	10 <sup>18</sup>	2.1	3 x 10 <sup>-4</sup>
5YX	PFA	Perfluoralkoxypolimeric	2.0 – 2.3	25	10 <sup>18</sup>	2.1	3 x 10 <sup>-4</sup>
5Y	PTFE	Polytetrafluorethylene	2.0 – 2.3	20	10 <sup>18</sup>	2.1	3 x 10 <sup>-4</sup>

Designation			Thermic								
VDE Code	Abbrev.	Materials	Working Temp		Melt Temp +°C	Flame Resistant	Oxygen Index LOI (% O <sub>2</sub> )	Heating Value H <sub>0</sub> MU – kg <sup>-1</sup>	Thermalcon-ductivity W – K-1	Corrosive gases in case of fire	Radiation resistance max Mrad
			Permanent °C	Short time °C							
10Y	PVDF	Polyvinylidene fluoride Kynar/Dyflor	- 40 + 135	+ 160	> 170	Self-extinguishing	40 – 50	15	0.17	Hydro-fluoric	10
7Y	ETFE	Ethylene-Tetrafluorethylene	- 100 + 150	+ 180	> 265	Self-extinguishing	30 – 35	14	0.24	Yes	10
6Y	FEP	Fluorine ethylene propylene	- 100 + 205	+ 230	> 225	Self-extinguishing	> 95	5	0.26	Yes	1
5YX	PFA	Perfluoralkoxypolimeric	- 190 + 260	+ 280	> 290	Self-extinguishing	> 95	5	0.21	Yes	0.1
5Y	PTFE	Polytetrafluorethylene	- 190 + 260	+ 300	> 325	Self-extinguishing	> 95	5	0.26	Yes	0.1

Designation			Mechanical					Weather	
VDE Code	Abbrev.	Materials	Tensile Strength N/mm <sup>2</sup>	Elongation at break %	Shore hardness	Corrosive Behavior	Abrasion Resistance	Weather Resistance	Cold Resistance
10Y	PVDF	Polyvinylidene fluoride Kynar/Dyflor	50 – 80	150	75 – 80 (D)	Very good	0.01	Very good	Very good
7Y	ETFE	Ethylene- Tetrafluorethylene	40 – 50	150	70 – 75 (D)	Very good	0.02	Very good	Very good
6Y	FEP	Fluorine ethylene propylene	15 – 25	250	55 – 60 (D)	Very good	0.01	Very good	Very good
5YX	PFA	Perfluoralkoxypolimeric	25 – 30	250	55 – 60 (D)	Very good	0.01	Very good	Very good
5Y	PTFE	Polytetrafluorethylene	80	50	55 – 60 (D)	Very good	0.01	Very good	Very good

\*\*To be used as a guideline only