High-Quality Fluoropolymer Resins & EAP Thin Film with High Dielectric Constant

PolyK offers various PVDF and P(VDF-TrFE)-based resins that find applications in high-energy-density capacitors, piezoelectric, pyroelectric, electrocaloric ECE, electroactive polymer EAP, haptics, electrostatic brake, lithium ion battery binder, etc.

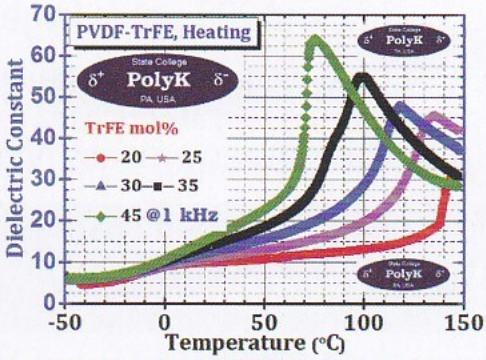
Specialty Fluoropolymers for R&D

https://piezopvdf.com/pvdf-resin/

1. PVDF Homopolymers with various MwW from ultralow < 100k (electrospinning) to ultrahigh > 1 M (lithium ion battery binder)
2. PVDF produced by emulsion or suspension
3. PVDF-HFP copolymer 90/10, 85/15, 82/18 wt
4. PVDF-CTFE copolymer 90/10, 85/15, 80/20, 68/32 wt
5. PVDF-TFE (T_m from 130 - 280 °C)
6. P(TFE-HFP-VDF) Dyneon® THV (T_m 120 - 230 °C)
7. Zonyl PTFE micro-powder 100nm -1 μm
8. Fluoropolymer elastomer with high K

PVDF-TrFE	
mol	Curie
85/15	N/A
80/20	135 °C
75/25	115°C
70/30	104 °C
65/35	72 °C
55/45	66 °C
50/50	55 °C

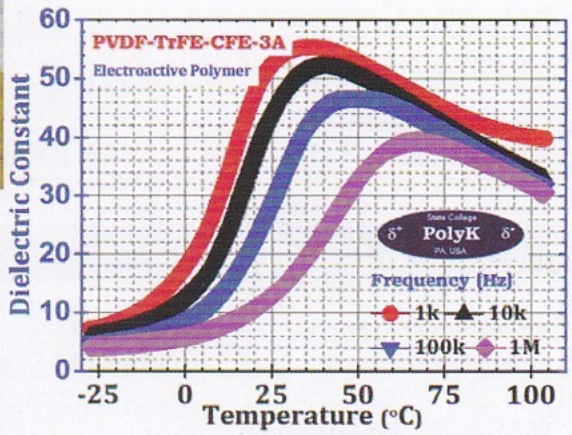
https://piezopvdf.com/pvdf-trfe-resin/



* TrFE-based copolymers are produced by Piezotech (Arkema)

PVDF-TrFE-CFE & PVDF-TrFE-CTFE electroactive polymer EAP terpolymer, dielectric constant K >45 at 25 C and 100 Hz, highest in known synthetic polymer materials.

- Applications: capacitor, electrostatic brake, high strain actuator
- Thin film of 2 to 10 μm can be produced by dissolving in MEK.



High Dielectric Constant PVDF-Based Film

http://piezopvdf.com/high-dielectric-constant-polymer-film/

High Energy Density Dielectric Capacitor, Soft Actuator, Wearable Haptics, Piezo & Pyro Sensor, Electrocaloric Cooling, High Frequency Ultrasound Transducer, Hydrophone, etc

1. Biaxially oriented PVDF film: 8 μm, 12 μm, 17 μm, 23 μm thick (K ~ 12)
2. Uniaxially Oriented PVDF film: 7 μm, 12 μm, 18 μm and up to 300 μm thick (K~12)
3. Piezo PVDF film: 7 μm to 500 μm (K ~13)
4. Biaxially oriented PVDF-HFP film: 2 μm, 3 μm, 4 μm, 5 μm, 6 μm, 10 μm (K ~10)
5. PVDF-TrFE copolymer film: solvent cast down to 3 μm (on carrier film). Uniaxially oriented: 8 μm thick (K ~8)
6. PVDF-TrFE-CTFE /-CFE film: From 3 μm to 40 μm thick. (K = 20-50)
7. High-K polymer film with electrode based on customer's design: gold, Pt, Ag, Al, ITO, etc.
8. Special composition development.

Specialty Polymer Film Production Facilities for Toll Manufacturing:

- Solvent Casting (slot die) up to 400 mm on release film or metallized PET release film.
- Melt Extrusion: up to 700 mm with in-line thickness scanner
- Monoaxial Direction Orientation: up to 1,000 mm wide

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