ETFE Fluoropolymer Extruded Films

ETHYLENE TETRAFLUOROETHYLENE FILM FOR USE IN SEMICONDUCTOR APPLICATIONS

ETFE films are materials of choice for cushioning / release function in Film Assisted Moulding (FAM) processes of semiconductors and integrated circuits. They possess superior release properties and flexibility over a broad continuous use temperature range of -200°C to 165°C (-328°F to 330°F).

ETFE films reduce release forces required to remove the moulded integrated circuit from the mould and provide wrinkle-free surfaces after moulding. The mould doesn't need to be cleaned between moulding cycles.

Due to its lower density, ETFE films provide 20% higher area yield than FEP, PFA and PTFE.

ETFE Films Characteristics

- Excellent non-stick / release properties
- High elongation and tear resistance at deep drawdowns
- Helps to prevent flash on moulds and tools
- Good conformability
- Broad continuous use temperature range: -200°C to 165°C (-328°F to 330°F)
- Free of plasticisers, processing aids, or additives

ETFE PG (Premium Grade)

- General purpose grade fit for use in most electronics / release applications.
- Offers superior anti-stick and low frictional properties, combined with high elongation and tear resistance.

General Properties	Units	Test Method	ETFE PG
Specific Gravity		ASTM D792	1.74
Area Yield	ft²/lb/mil		110
Area Yield	m²/kg/25		22.6
Flammability		UL-94	V-0
Water Absorption	%		<0.03
Mechanical Properties			
Tensile Strength	psi (MPa)	ASTM D882	7000 (48)
Elongation at Break, min.	%	ASTM D992	300
Tensile Modulus	psi (MPa)	ASTM D882	140,000 (965)
Folding Endurance (MIT)	cycles	ASTM D2176	50,000
Thermal Properties			
Continuous Use Temp	°F (°C)	UL-746 B	330 (165)
Melting Point	°F (°C)	ASTM D3418	500 (260)
Coeff. Of Lin. Thermal Expansion	°F (°C)	ASTM D696	$7x10^{-5}$