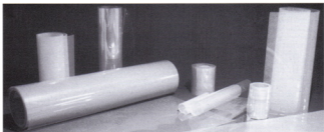


HOLSCOT

FEP FILM



Thicknesses from 0.01 to 2.4mm

- **Excellent thermal stability:**
Usable throughout a wide thermal range (-200~ +200°C) (-328~ +392°F)
- **Chemical inertness:**
Resists almost all chemicals, such as strong acid, strong alkali, salt, and organic solvent.
- **Anti-stick property:**
The lowest surface energy of all plastic films; displays excellent mould release and anti-stick properties.
- **Electrical reliability:**
High electrical insulation, characterised by low-dielectric constant and dissipation factor, and by high dielectric strength over a wide range of temperature and frequency.
- **Resistance to weathering:**
Inert to outdoor exposure; with unchanged mechanical and physical properties after 10 years.
- **Non-flammability:**
Will not burn in air or gas having an oxygen concentration of less than 95%.
- **High transparency:**
Transparent, with excellent transmission of ultraviolet rays and visible rays; lowest refractive index of all plastic films; characterised by very low light reflection.

Standard specifications of FEP film

Code No.	Thickness			Size & weight per roll		
	(μ)	mm	ins	Width (mm)	Length (m)	Weight (kg) (approx.)
NF 0012	12.5	0.0125	0.0005	1,150	200	6
NF 0025	25	0.025	0.001	1,150 OR 1,220	200 or 183	12.5
NF 0050	50	0.05	0.002	1,150 OR 1,220	200 or 183	25
NF 0100	100	0.1	0.004	1,150	100	25
NF 0250	250	0.25	0.010	1,250	80	50
NF 0500	500	0.5	0.020	1,250	40	50
NF 1000	1,000	1.0	0.040	1,250	20	50
NF 1500	1,500	1.5	0.060	1,250	25	100
NF 2400	2,400	2.4	0.095	1,250	15	100

- Also available:**
- 1) Surface treatment for bonding applications. (Sizes from NF 0012-NF 0100 treated by corona discharge, larger sizes chemically etched).
 - 2) Pigmented films available for specialist applications (e.g. release film) red, white, black, chromed.
 - 3) Perforated films available for release film applications.
 - 4) Larger sheets can be supplied by use of Holscot's welding techniques which provide a virtually indetectable joint.
 - 5) Other thicknesses available upon request.

	Test Method	Typical value
Physical properties		
Specific gravity	ASTM D 1505	2.15
Tensile strength (machine direction) (kg/cm ²)		290
Tensile strength (transverse direction) (kg/cm ²)		275
Elongation (machine direction) (%)		350
Elongation (transverse direction) (%)		360
Bending resistance (cycles)		>100,000
Co-efficient of friction (static) (to steel ball)	Bauden-Rebens method	0.1 - 0.4
Contact angle (water) (degrees)		110 - 115
Optical properties		
Transmittance (wavelength 0.2 to 3 μ) (%)		95
Refractive index n _D ²⁵		1.338
Thermal properties		
Melting point (°C (°F))	D.S.C.	270 (518)
Lowest temp. of thermal decomposition (°C) (10°C/min temp. rise)		420
Specific heat (cal/g.cm)		0.28
Co-efficient of thermal conductivity (cal/sec. °C .cm)	ASTM C 177	6 x 10 ⁻⁴
Co-efficient of linear expansion (1/°C)	ASTM D 696	8.3 - 10.5 x 10 ⁻⁴
Heat shrinkage rate (machine direction) (%)	30 min at 150°C	-0.4
Heat shrinkage rate (transverse direction) (%)	50 μ film	+0.3
Electrical properties		
Dielectric constant 10 ³ Hz	ASTM D 150	2.05
10 ⁶ Hz	(22° - 2°C)	2.05
10 ⁹ Hz		2.05
Dissipation factor 10 ³ Hz	ASTM D 150	<0.0002
10 ⁶ Hz	(22° - 2°C)	0.0004
10 ⁹ Hz		0.0015
Volume resistivity (ohm-cm)	ASTM D 257 (22°C)	10 ⁹
Dielectric strength (kv/100 μ)	ASTM D 149	13
Permeability		
N ₂ Gas (cm ³ . cm/cm ² . sec . atm)	ASTM D 1434	120 x 10 ⁻¹⁰
O ₂ Gas (cm ³ . cm/cm ² . sec . atm)	ASTM D 1434	370 x 10 ⁻¹⁰
H ₂ Gas (cm ³ . cm/cm ² . sec . atm)	ASTM D 1434	1,080 x 10 ⁻¹⁰
CO ₂ Gas (cm ³ . cm/cm ² . sec . atm)	ASTM D 1434	970 x 10 ⁻¹⁰
CH ₄ Vapours (cm ³ . cm/cm ² . sec . atm)	ASTM D 1434	66 x 10 ⁻¹⁰
Ethylene Vapours	ASTM D 1434	44 x 10 ⁻¹⁰
Moisture permeability (g/m ² .24 hrs)		1.5
Water absorption (% , 24 hrs)	ASTM D 570	<0.01
Flammability		
Critical oxygen index (% by vol.)		>95
Durability		
Water, moisture		Excellent
Sunlight, ultraviolet rays		Excellent

Note 1) These values are typical performance data, not intended to be used as design data.

HOLSCOT

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