

FLAME RETARDANT
POLYPROPYLENE INSULATION

FORMEX™

FORMEX™ GK

STATEX™

TWFormex®

FORMEX™ GK/FORMEX PRODUCT DATA

FLAME RETARDANT POLYPROPYLENE SHEET

ITW Formex®

1701 W. Armitage Court
Addison, IL 60101
630.889.8655 Fax 630.889.8713
Email sales@itwformex.com
Web Site www.itwformex.com

	TEST METHOD	FORMEX GK-5BK	FORMEX GK-10	FORMEX GK-17	FORMEX GK-30
Color		Black	Natural & Black	Natural & Black	Natural & Black
Thickness - inch		.005 ± .001	.010 + .003/ -.0015	.017 + .003/ -.001	.030 ± .002
Thickness - millimeter		.127 ± .025	.25 + .08/ -.04	.43 + .08/ -.03	.76 ± .05
MECHANICAL PROPERTIES					
Tensile Yield - psi	ASTM D-882				
Machine Direction		4400	4400	4400	4400
Transverse Direction		3200	3200	3200	3200
PHYSICAL PROPERTIES					
Density - gm/cc	ASTM D-792	1.035	1.035	1.035	1.035
Flammability	UL 94	VTM-0	VTM-0	V-0	V-0
Oxygen Index	ASTM D-2863	29	29	29	29
Water Absorption - % change in weight	ASTM D-570	0.06%	0.06%	0.06%	0.06%
Heat Deflection Temperature at 66 psi	ASTM D-648	121°C/250°F	121°C/250°F	121°C/250°F	121°C/250°F
Relative Thermal Index	UL 746B				
Electrical		115°C/239°F	115°C/239°F	115°C/239°F	115°C/239°F
Mechanical Without Impact		115°C/239°F	115°C/239°F	115°C/239°F	115°C/239°F
Surface Energy - dynes/cm (as produced)	ASTM D-2578	≥ 50 outside only**	≥ 50	≥ 50	≥ 50
ELECTRICAL PROPERTIES					
Dielectric Breakdown - volts	ASTM D-149	13,125	22,000	24,820	32,400
Dielectric Strength - volts/mil	ASTM D-149	2625	2200	1460	1080
Volume Resistivity - ohm-cm	ASTM D-257	3.97x 10 ¹⁵	3.97x 10 ¹⁵	3.97x 10 ¹⁵	3.97x 10 ¹⁵
Dielectric Constant	ASTM D-150	2.30	2.30	2.30	2.30
Dissipation Factor	ASTM D-150	0.0019	0.0019	0.0019	0.0019
High Current Arc Ignition - arcs to ignite	UL 746A	200	200	162	200
High Voltage Arc Tracking - in/min	UL 746A	0.0	0.0	0.0	0.0
Hot Wire Ignition - seconds	UL 746A	9	7	9	12
Comparative Tracking Index - volts	ASTM D-3638	600	600	600	600
PACKAGING INFORMATION					
Standard Configuration		Roll	Roll	Roll & Sheet	Roll & Sheet
Core ID - inches		6	6	6	6
Roll OD - inches (approximate)		18	18	18	18
Roll Width - inches		24	24	24 & 25	24
Roll Weight - lbs (approximate)		205	225	200	200
Length/Roll - feet		4000	2000	1000	600
Area/Roll - square feet		8000	4000	2000 & 2083	1200
Sheet Sizes - inches		-	-	24 x 48	24 x 48, 48 x 96*

* Black only

** Treated one side only

Notice: The above information is believed to be accurate and reliable. ITW assumes no responsibility for end use applications and no performance warranty is expressed or implied.

FMXGK 5/30-D



File Number E121855 - Yellow Card available on request

MIL Handbook 454 - Fungus-inert-Group I

For a complete listing of Formex products, contact your Formex/Statex sales representative.

Rev 3/02

FORMEX™ GK/FORMEX PRODUCT DATA FLAME RETARDANT POLYPROPYLENE SHEET



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	TEST METHOD	FORMEX GK-40	FORMEX GK-62	FORMEX-94BK	FORMEX-125BK
Color		Natural & Black	Natural & Black	Black	Black
Thickness - inch		.040 ± .002	.062 ± .004	.094 ± .004	.125 ± .007
Thickness - millimeter		1.02 ± .05	1.57 ± .10	2.38 ± .10	3.18 ± .18
MECHANICAL PROPERTIES					
Tensile Yield - psi	ASTM D-882				
Machine Direction		4400	4400	4800	4800
Transverse Direction		3200	3200	3600	3600
PHYSICAL PROPERTIES					
Density - gm/cc	ASTM D-792	1.035	1.035	0.988	0.988
Flammability	UL 94	V-0	V-0	V-0	V-0
Oxygen Index	ASTM D-2863	29	29	28	28
Water Absorption - % change in weight	ASTM D-570	0.06%	0.06%	0.01%	0.01%
Heat Deflection Temperature at 66 psi	ASTM D-648	121°C/250°F	121°C/250°F	106°C/223°F	106°C/223°F
Relative Thermal Index	UL 746B				
Electrical		115°C/239°F	115°C/239°F	110°C/230°F	110°C/230°F
Mechanical Without Impact		115°C/239°F	115°C/239°F	110°C/230°F	120°C/248°F
Surface Energy - dynes/cm (as produced)	ASTM D-2578	≥50	≥50	≥50	≥50
ELECTRICAL PROPERTIES					
Dielectric Breakdown - volts	ASTM D-149	37,800	45,260	56,400	62,500
Dielectric Strength - volts/mil	ASTM D-149	945	730	600	500
Volume Resistivity - ohm-cm	ASTM D-257	3.97 x 10 ¹⁵	3.97 x 10 ¹⁵	146 x 10 ¹⁵	146 x 10 ¹⁵
Dielectric Constant	ASTM D-150	2.30	2.30	2.30	2.30
Dissipation Factor	ASTM D-150	0.0019	0.0019	0.0009	0.0009
High Current Arc Ignition - arcs to ignite	UL 746A	200	200	200	200
High Voltage Arc Tracking - in/min	UL 746A	0.0	0.0	0.0	0.0
Hot Wire Ignition - seconds	UL 746A	12	12	30	36
Comparative Tracking Index - volts	ASTM D-3638	600	600	600	600
PACKAGING INFORMATION					
Standard Configuration		Sheet	Sheet	Sheet	Sheet
Core ID - inches		-	-	-	-
Roll OD - inches (approximate)		-	-	-	-
Roll Width - inches		-	-	-	-
Roll Weight - lbs (approximate)		-	-	-	-
Length/Roll - feet		-	-	-	-
Area/Roll - square feet		-	-	-	-
Sheet Sizes - inches		24 x 48, 48 x 96*	24 x 48, 48 x 96*	24 x 48	24 x 48

* Black only

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MIL Handbook 454 - Fungus-Inert-Group I

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STATEX™ PRODUCT DATA

STATIC DISSIPATIVE FLAME RETARDANT POLYPROPYLENE SHEET

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	TEST METHOD	STATEX-10	STATEX-18	STATEX-31
Color		Natural*	Natural*	Natural*
Thickness - inch		.010 + .003/ -.0015	.018 + .004/ -.002	.031 + .004/ -.000
Thickness - millimeter		.25 + .08/ -.04	.46 + .10/ -.05	.79 + .10/ -.00
MECHANICAL PROPERTIES				
Tensile Yield - psi	ASTM D-882			
Machine Direction		4800	4800	4800
Transverse Direction		3600	3600	3600
PHYSICAL PROPERTIES				
Density - gm/cc	ASTM D-792	0.988	0.988	0.988
Flammability	UL 94	VTM-0	V-0	V-0
Oxygen Index	ASTM D-2863	28	28	28
Water Absorption - % change in weight	ASTM D-570	0.01%	0.01%	0.01%
Heat Deflection Temperature at 66 psi	ASTM D-648	106°C/223°F	106°C/223°F	106°C/223°F
Relative Thermal Index	UL 746B			
Electrical		95°C/203°F	100°C/212°F	110°C/230°F
Mechanical Without Impact		95°C/203°F	100°C/212°F	110°C/230°F
ELECTRICAL PROPERTIES				
Static Decay - seconds (Federal Test Method 101C)	ASTM D-257	< 2	< 2	< 2
Surface Resistivity - ohms/square	ASTM D-257	10 ⁹ to 10 ¹¹	10 ⁹ to 10 ¹¹	10 ⁹ to 10 ¹¹
Dielectric Breakdown - volts	ASTM D-149	17,500	27,540	37,200
Dielectric Strength - volts/mil	ASTM D-149	1750	1530	1200
Volume Resistivity - ohm-cm	ASTM D-257	146 x 10 ¹⁵	146 x 10 ¹⁵	146 x 10 ¹⁵
Dielectric Constant	ASTM D-150	2.30	2.30	2.30
Dissipation Factor	ASTM D-150	0.0009	0.0009	0.0009
High Current Arc Ignition - arcs to ignite	UL 746A	113	23	195
High Voltage Arc Tracking - in/min	UL 746A	0.0	0.0	0.0
Hot Wire Ignition - seconds	UL 746A	6	11	21
Comparative Tracking Index - volts	ASTM D-3638	600	600	600

* Product is line-marked on treated side with carbonless black ink.

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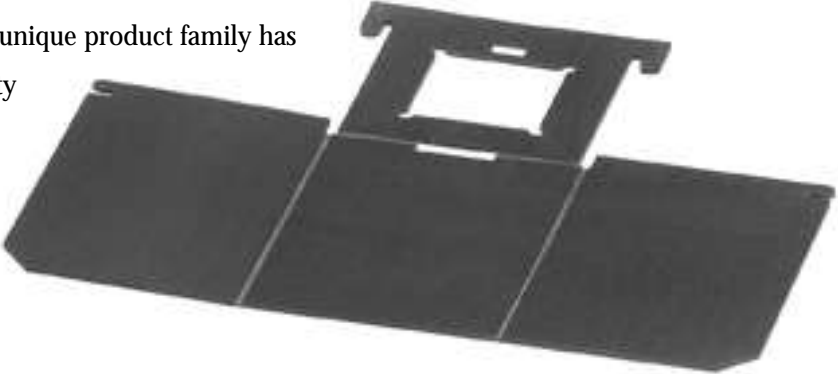
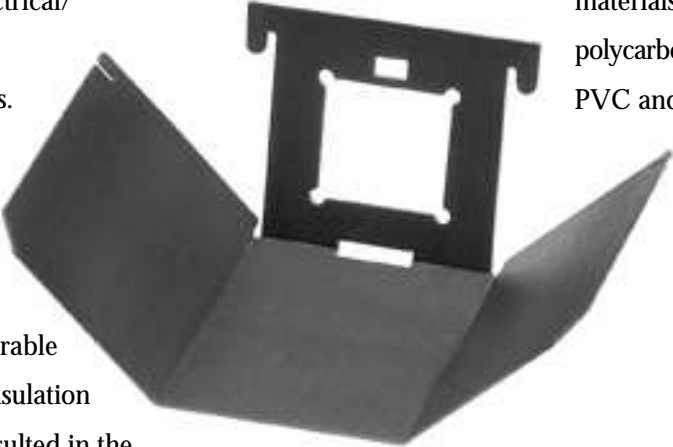
For a complete listing of Statex products, contact your Formex/Statex sales representative.

Illinois Tool Works (ITW), founded in 1912, is a Fortune 200 company headquartered in Glenview, IL with over 700 operating units worldwide. The Formex division is an industry leader in flame retardant materials used in electrical/ electronic applications.

In the 1980's the need for a low-cost durable electrical insulation material resulted in the development of a flame retardant plastic material by the ITW Technology Center. Today, three grades of material are marketed under the Formex™, Formex™ GK, and Statex™ brand names. All are UL recognized electrical insulators.

Formex™, Formex™ GK, and Statex™ materials are used to comply with UL, CSA, IEC, VDE, TUV, BSR or

MITI standards when there is a need for electrical insulators and barriers. This unique product family has successfully replaced a variety of flame retardant sheet materials including polycarbonate, polyester, PVC and aramid papers.



Formex, Formex GK and Statex have the following features:

- UL 94V-0 Flame Class Rating
- Non-hygroscopic (moisture absorption < 0.1%)
- Excellent dielectric strength
- Superior score and folding ability
- Economical

For samples and additional information about electrical insulation products, call Customer Service at (630) 889-8655, fax (630) 889-8713, or visit our web site at www.itwformex.com





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