



intertape polymer group®

**PERFORMANCE SOLUTIONS FOR
ELECTRICAL INDUSTRY**



Tapes for the Most Demanding Applications



Intertape™ Electrical and Electronic Tapes are available with a wide range of backings and adhesive systems to meet the demanding application requirements of the electrical, electronic and aerospace industries.

These engineered products are manufactured under the strictest standards to deliver the highest level of performance and reliability. Many IPG Electrical Insulation Tapes are UL listed (File #E20780) and CSA Certified (File #LR94980).

With the most comprehensive product line in the industry, Intertape Polymer Group™ has the ideal solution to your most demanding applications.

Polyester Films

- Acrylic
- Rubber Thermosetting
- Cured Rubber

Polyester Laminates

- Acrylic
- Rubber Thermosetting

Glass Filament.....

- Acrylic
- Rubber Thermosetting

Glass Cloth.....

- Acrylic
- Rubber Thermosetting
- Silicone

Specialty Electrical.....

- Thermosetting Acrylic
- Acrylic Zone-Coated

Acetate Cloth.....

- Rubber Thermosetting

Polyimide Films

- Acrylic
- Silicone

Specialty Non-UL.....

- PCB Masking
- Antistatic
- High Temp Masking

Paper Electronic.....

- High Temperature Rubber
- Synthetic Rubber



POLYESTER FILMS



IPG's Polyester Film Tape provides excellent conformability and high dielectric strength per mil of thickness.

ACRYLIC THERMOSETTING

Elongation 100%. Abrasion and moisture resistant. Applications: coil wrapping, anchoring, harnessing, holding, slot edging in transformers and motors.

Resource Number	Description	Polyester Backing mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
51560	Flame retardant. High temperature shear resistance when thermoset. Abrasion and puncture resistant. Passes UL510 flame test. Yellow, White, Black. Printable.	1.0	2.1 (0.053)	40 (4.4)	25 (44)	5,000	130
51562	Flame retardant. High temperature and abrasion resistant. Excellent electrical insulating properties. Good for inter-layer insulation. Passes UL510 flame test. Yellow, White, Black, Clear. Printable.	2.0	3.5 (0.089)	45 (4.9)	50 (88)	7,500	130
51589	Solvent resistant. Excellent long-term aging characteristics. Clear, Yellow. Non Thermosetting	1.0	2.2 (0.056)	35 (3.8)	25 (44)	5,000	130
51592	Solvent resistant. Excellent long-term aging characteristics. Yellow.	2.0	3.7 (0.094)	55 (6.0)	50 (88)	7,500	130
54113	High temperature shear, abrasion and puncture resistant. Ideal for film wrap capacitors and where maximum insulation build up is required. Clear, Yellow.	1.0	2.4 (0.061)	45 (4.9)	25 (44)	5,000	130
54143	High temperature shear and abrasion resistant. Ideal for film wrap capacitors and where maximum insulation build up is required. Clear, Yellow.	1.4	3.0 (0.076)	50 (5.5)	38 (66)	6,000	130



RUBBER THERMOSETTING

Elongation 100%. Tough and conformable. Abrasion and moisture resistant. Excellent electrical insulating properties. Applications: coil wrapping, anchoring, harnessing, holding, insulating, tabbing and inter-layer insulation.

Resource Number	Description	Polyester Backing mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
51587	Resists chemicals and solvents when thermoset. Excellent electrical insulating properties. Yellow, Black. MIL-1-15126F MF 2.5.	1.0	2.2 (0.056)	50 (5.5)	25 (44)	5,000	130
51588	Resists chemicals and solvents when thermoset. Excellent electrical insulating properties. Clear. MIL-1-15126F MF 2.5.	1.0	2.2 (0.056)	50 (5.5)	25 (44)	5,000	130
51594	Resists chemicals and solvents when thermoset. Excellent electrical insulating properties. Ideal on fine gauge magnet wire. Lemon yellow.	1.0	2.0 (0.051)	45 (4.9)	25 (44)	5,000	130
54107	Excellent electrical insulating properties and high thermoset cure. Yellow.	1.0	2.4 (0.061)	45 (4.9)	25 (44)	5,000	130

CURED RUBBER

Elongation 100%. Tough and conformable. Abrasion and moisture resistant.

Resource Number	Description	Polyester Backing mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
54108	Excellent electrical insulating properties and high initial cure. Ideal for high shear resistance at elevated temperatures. Off-white.	1.0	2.4 (0.061)	50 (5.5)	25 (44)	5,000	130



To meet a wide range of industrial needs, IPG offers two types of Polyester Laminate Tape. Paper/Polyester Laminates provide excellent bulk and stiffness in an easy-to-tear product. Polyester/Non-Woven Laminates are puncture resistant, and highly conformable. They're available with acrylic adhesives for performance in higher temperature environments.

ACRYLIC

Multi-purpose tape for applications which require a combination of tear and puncture resistance, high tensile strength with elongation and excellent dielectric strength. Applications: high volume coil wrapping, ground and barrier insulation, outer protective wrap for bobbin applications, coil end insulation anchoring leads and terminal boards.

Resource Number	Description	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
51595	Coil and transformer wrapping, anchoring, harnessing and outer-wrap for coils. Natural.	3.5 Polyester Non-woven	4.5 (0.114)	50 (5.5)	30 (52)	30%	5,000	155

RUBBER THERMOSETTING

Excellent solvent resistance. Applications: slot edging, lead anchoring, coil wrapping, inter-phase/interlayer insulation.

Resource Number	Description	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
4426	Low cost, all-purpose electrical tape. Black, Natural.	4.0 Polyester Rope Fiber	6.0 (0.152)	60 (6.6)	45 (79)	2%	5,500	130
4427	Economical and versatile. Natural.	3.5 Polyester Rope Fiber	5.5 (0.140)	60 (6.6)	40 (70)	2%	4,500	130
51578	Excellent solvent resistance. Natural.	3.5 Polyester Rope Fiber	5.5 (0.140)	70 (7.7)	40 (70)	2%	4,500	130
51596	Tear and puncture resistant. High tensile strength. Excellent dielectric strength. Black, Tan.	3.5 Polyester Non-woven	4.5 (0.114)	60 (6.6)	30 (53)	30%	4,500	130
51580	Coil and transformer wrapping, anchoring, harnessing and outer-wrap for coils. Natural.	4.0 Polyester Non-woven	5.0 (0.127)	50 (6.0)	45 (79)	25%	5,000	130

GLASS FILAMENT

The combination of polyester film with glass filament reinforcement delivers high tensile strength, making these tapes excellent for heavy duty bundling and insulation applications. The properties of our Glass Filament Polyester Film Tapes include superior resistance to chemicals, solvents and aging. All products average 5% elongation.

ACRYLIC

High tensile strength, conformable backing with aggressive adhesive for a variety of heavy duty insulating and holding applications. Resistant to chemicals, solvents and aging. Offers high dielectric strength and insulation resistance.

Resource Number	Description	Backing Thickness mils (mm)	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
4237	Lead and saddle tie down, bundling motor and transformer coils and coil covering applications. Transparent adhesive. Designed for oil-filled applications, thermosetting acrylic.	4.5	7.25 (0.18)	45 (4.9)	295 (516)	5,000	155
4238	Lead and saddle tie down, bundling motor and transformer coils and coil covering applications. Transparent adhesive.	6.5	7.5 (0.190)	45 (4.9)	375 (657)	6,000	155
51597	Slot edging, holding, separating ground insulation, bundling and transformer coils. Transparent adhesive.	5.5	6.5 (0.165)	40 (4.4)	250 (438)	5,000	155

RUBBER THERMOSETTING

Resource Number	Description	Polyester Glass mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
51599	Lead and saddle tie down, bundling motor and transformer coils and coil covering applications. Natural.	5.0	7.0 (0.178)	60 (6.6)	350 (613)	5,000	130



When the situation calls for high heat resistance and tensile strength, Glass Cloth Tapes are ideal for many electrical insulation requirements. They offer outstanding flexibility and conformability. These tapes are unique in that they produce little edge fray and little to no dust. Choose from IPG Glass Cloth Tapes with thermosetting rubber, acrylic or silicone adhesives.

ACRYLIC

Inert, temperature resistant, high tensile strength backing with an acrylic adhesive. combines high adhesion and strength with excellent puncture and abrasion resistance. Acrylic adhesive system provides outstanding resistance to oils, solvents and chemicals. Excellent conformability remains flexible after cure. Applications: Inter-layer insulation, coil outer wraps, tie-downs, lead insulation and protection. Electrical motor and generator binding.

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
4617	White. Temperature resistant. Excellent puncture and abrasion resistance.	5.0	7.0 (0.178)	40 (4.4)	200 (350)	3%	2,500	155
54562	Uniform unwind. White.	5.0	9.0 (0.229)	45 (4.9)	195 (341)	5%	3,000	155

RUBBER THERMOSETTING

Woven fiberglass backing imparts high temperature resistance and thermal stability and offers outstanding abrasion resistance for a large number of applications.

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
461FR*	Self-extinguishing. Harness and cable wrapping. Black. Meets UL510. Not ROHS Compliant.	5.0	8.0 (0.203)	40 (4.4)	175 (307)	3%	2,500	130
4616	High adhesion. Solvent and tear resistant. Coil insulation wrap, relay coverings, protective insulating wrap on solenoid coils, splicing. Black, White.	5.0	7.0 (0.178)	50 (5.5)	175 (307)	3%	2,500	155

SILICONE

High strength backing and heat resistant silicone adhesive for high temperature applications. Motor repair shops for bundling and banding heavy gauge magnet wire. Slot cell edge taping. MIL-1-19166C.

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
4618*	Resists edge fraying and rotting. Flexible and varnish absorbent. Solvent and abrasion resistant. Flame retardant. White. Meets UL510.	5.0	7.0 (0.178)	40 (4.4)	185 (324)	3%	2,500	200

ACETATE CLOTH



When you want the convenience of a hand-tearable tape with outstanding product features, IPG's Acetate Cloth Tapes are a smart choice. The acetate cloth backing and a thermosetting rubber adhesive system provide high adhesion with conformability, printability and excellent insulating properties.

RUBBER THERMOSETTING

Applications: coil wrapping, inter-layer insulation, tabbing.

Resource Number	Description	Backing Thickness mils	Polyester Glass mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
4560	High adhesion. Will accept varnish impregnation. Black, White.	6.0	7.0 (0.178)	45 (4.9)	40 (70)	15%	2,000	130

SPECIALTY ELECTRICAL

High voltage insulation applications put extra demands on tape. IPG offers a line of Specialty Electrical Tapes with unique characteristics suited to these situations, including zone coating that allows for complete varnish impregnation.

THERMOSETTING ACRYLIC

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
51337	Flatback paper backing with acrylic adhesive. Excellent solvent resistance. pH neutral. For holding and bundling applications; outer wrap for coils. Natural. Non Thermosetting.	6.25	9.1 (0.23)	54 (5.9)	54 (94)	4%	1,900	105
56228FR	2.0 mil Nomex® backing. Off-White. Flame retardant	2.0	3.5 (0.089)	40 (4.4)	25 (44)	8%	2,500	155
54356	8.5 mil polyester Nomex® backing. Off-White.	8.5	10.0 (0.254)	50 (5.5)	25 (44)	80%	6,000	155

Nomex® is a registered trademark of El Dupont de Nemours

ACRYLIC ZONE-COATED

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
4564	2.4 mil polyester fleece backing. Natural. Non Thermosetting. Liner mounted.	2.4	6.5 (0.165)	32 (3.5)	17 (30)	35%	500	130



For outstanding thermal resistance and excellent dielectric strength, choose IPG tapes with polyimide backing. They're tough, puncture resistant and flame retardant – and ideal for high temperature insulation and processing environments.

ACRYLIC

Excellent chemical and thermal resistance. Applications: bundling and inter-layer insulation in high temperature transformers and large DC mining and traction motors.

Resource Number	Description	Backing thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
51579	Tough, Excellent insulating properties. Puncture resistant. Amber.	1.0	2.2 (0.056)	30 (3.3)	30 (53)	7,000	155

SILICONE THERMOSETTING

Outstanding thermal resistance and excellent electrical insulating properties. For use where toughness, puncture resistance, extreme resistance to heat and flame retardance is required. Applications: gold fingers for protection in wave soldering. Ground barrier and phase insulation in torroidal coils.

Resource Number	Description	Backing thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Dielectric Strength Total Volts	Temp Rating °C
4118*	Kapton® polyimide backing. Outer wrap on small bobbin wound coils and on form wound coils for traction motors. Amber.	1.0	2.5 (0.064)	25 (2.7)	30 (53)	7,000	180
4428	Amber. Outer wrap on small bobbin wound coils and on form wound coils for traction motors.	1.0	2.5 (0.604)	25 (2.7)	30 (53)	7,000	180
4429	Extra strength. Outer wrap on small bobbin wound coils and on form wound coils for traction motors. Amber.	2.0	3.5 (0.089)	25 (2.7)	65 (114)	11,000	180

*©E.I. DuPont de Nemours

SPECIALTY NON-UL

Each product is specifically designed for a variety of high temperature applications. Unique applications include splicing rough surface materials and masking off sensitive areas to protect during plasma/thermal spray operations.

PCB MASKING

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
FM-28	1.0 Polyimide backed silicone adhesive. Heat resistant, excellent choice for high temperature processing applications in printed circuit board fabrication.	1.0	2.5 (0.064)	25 (2.7)	30 (52)	80%	n/a	180+
FM-29	2.0 Polyimide backed silicone adhesive. Heat resistant, excellent choice for high temperature processing applications in printed circuit board fabrication.	2.0	3.5 (0.064)	25 (2.7)	65 (114)	80%	n/a	180+

SPECIALTY NON-UL



ANTISTATIC TAPE

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
FM-38	Polyimide backed silicone adhesive with anti-static polymer coating. Generates less than 50 volts discharge as it is being dispensed. For wave solder and reflow applications. Amber.	1.0	2.0 (0.05)	17.6 (1.9)	>19 (33)	>50%	n/a	180+
FM-48	Polyimide backing combined with conductive polymer coating and semi-conducting silicone adhesive. Low voltage discharge in dispensing and removal. Meets ANSI S-2020 standards. For wave solder and reflow applications. Amber.	1.0	2.0 (0.05)	21 (2.3)	>7.7 (13.5)	>50%	n/a	180+
FM-58	1.0 PET film backing combined with conductive acrylic polymer for low voltage discharge while dispensing. Remains clear; non-yellowing. For packaging applications where anti-static or low static is required. Clear.	1.0	2.9 (0.05)	20 (2.2)	>28 (49)	>70%	n/a	120

HIGH TEMPERATURE MASKING

These tapes are designed for high temperature “powder coat” masking and PCB protection during various production phases. Also suitable for splicing.

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
6215	2.0 PET, silicone adhesive, high temperature masking. Green.	2.0	4.0 (0.100)	35 (3.8)	50 (88)	100%	n/a	204
6120	1.0 PET, silicone adhesive, high temperature masking. Blue.	1.0	3.4 (0.085)	45 (4.9)	25 (44)	100%	n/a	204
6130	1.0 PET, silicone adhesive, high temperature splicing. Red.	1.0	3.2 (0.065)	30 (3.3)	25 (44)	100%	n/a	204
PG21	Extremely versatile, warm or cold removal. Exposure to oven temperatures up to 325°F (163°C) for 30 minutes (time and temperature determined by surface).	2.8	7.3 (0.186)	28 (0.0)	26 (00)	10%	n/a	163

Resource Number	Description	Backing Thickness mils	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
LA-26	Polyester/rope fiber laminate. Offers bulk and stiffness; hand tears for tabbing, holding and wrapping. Black.	4.0	6.0 (0.152)	60 (6.6)	45 (79)	2%	n/a	130



IPG Paper Electronic Tapes are designed to meet a variety of applications, including in-process and packaging needs of “through-hole” electronic component manufacturers. They’re available in a variety of strengths and paper backings. These high performance products are specially designed to perform in the most unique and demanding applications where adhesion, tensile strength, moisture, tear and burst-through resistance are required.

SYNTHETIC RUBBER

Pressure sensitive tape with excellent mass to mass adhesion.

Resource Number	Description	Backing	Total Thickness mils (mm)	Adhesion to Steel oz/in (N/cm)	Tensile Strength lbs/in (N/cm)	Elongation	Dielectric Strength Total Volts	Temp Rating °C
BD-1	High strength. High tensile strength with good edge tear resistance. Excellent stain resistance. Recommended for sequential taping and tape reeling. White, Blue.	Rope Flatback Paper	6.0 (0.152)	61 (6.7)	49 (86)	3.5%	0	0
BD-2	Medium tensile strength with good edge tear resistance. Recommended for bandoliering, tape reeling and sequencing electronic components. White, Blue.	Flatback Kraft Paper	6.0 (0.152)	44 (4.8)	32 (56)	3.0%	0	0
BD-24	Medium strength. Recommended for bandoliering, tape reeling and sequencing electronic components. Blue, Natural.	Medium Kraft Paper	6.2 (0.157)	39 (4.3)	22 (38.5)	7.0%	0	0

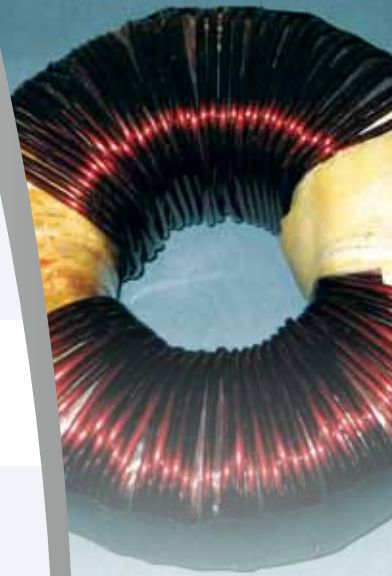
UL LISTINGS



Tape numbers in bold represent an example of tapes required for Sealed Tube Testing in order to qualify total product line.

Matrix reviewed and approved by Thomas L. Mayerhofer, Principal Engineer – Electrical Insulation Systems and Materials, Underwriter's Laboratories, Inc., on June 9, 2005.

Adhesive	Substrate	PET	PET/ Filament†	PET/ Rope†	Glass Cloth1	Glass Cloth2	Glass Cloth3	PET/ Fleece†	Fleece	Acetate Cloth	PET/ Nomex†	Nomex	FEP	Polyimide
I	Acrylic	51589-00 51589-04 51589-17	51597-00 4238-00		4617-00		54562-00	51593-00 51595-00 51595-04	4564-00					51579-00
II	Thermo- setting Acrylic	54113-00 54113-17 54143-00 54143-17 51592-00 51592-08 51592-17									54356-00		4500-00	
III	Flame Retardant Thermo- setting Acrylic	51560-08 51560-17 51562-08 51562-17										56228 FR-00		
IV	Thermo- setting Rubber	51588-00 51587-04 51587-17 51594-17												
V	Thermo- setting Rubber							51580-00 51596-00						
VI	Thermo- setting Silicone					4618-00	4619-00							
VII	Thermo- setting Rubber		51599 PV1-00	4426-00 4426-04 4427-00 51578-00						4560-00 4560-04				
VIII	Thermo- setting Rubber	54107-17												
IX	Thermo- setting Rubber	54108-08												
X	Thermo- setting Rubber				4616-00									
XI	Thermo- setting Rubber				4616-04			51580-04 51596-04						
XII	Flame Retardant Thermo- setting Rubber				461 FR-04					4570-00 4570-04				
XIII	Thermo- setting Silicone													4118-00 4428-00 4429-00



All products are ROHS Compliant unless otherwise noted.

Key

PET: Polyethylene Terephthalate Film

Fleece: Non-Woven Polyethylene Terephthalate

†: Laminate

Color Codes:

- 00 Clear/Natural
- 04 Black
- 08 White
- 17 Yellow





CORPORATE PROFILE

Intertape Polymer Group Inc. (IPG) is an acknowledged leader in the packaging industry. Leveraging its advanced manufacturing and technologies, extensive research and development capabilities and a comprehensive strategic acquisition program, the company believes it has assembled the broadest and deepest range of products in the industry. IPG is widely recognized for its development and manufacture of specialized polyolefin, plastic and paper-based packaging products, as well as complementary packaging systems for industrial and retail use. Additionally, IPG is a woven and flexible intermediate bulk container (FIBC) manufacturer. Its performance products, including tapes and cloths, are designed for demanding aerospace, automotive and industrial applications and are sold to a broad range of industry/specialty distributors, retail stores and large end-users in diverse industries.



Porto, Portugal

Flensburg, Germany



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