

3M™ Electrical/Electronic Tapes

An electrical grade tape should always be used in the manufacture of electrical components. The correct tape will have the necessary balance of electrical and mechanical properties along with good handling characteristics that will contribute to overall productivity by reducing waste of time and materials. 3M™ Electrical Tapes are made from a broad range of backings and adhesives to meet the requirements of different applications and environments. Extensive quality control and testing, combined with accurate process controls, ensure that customers get high quality electrical grade products. 3M™ has developed a wide variety of tape families, each one with specific features for critical applications. 3M™'s tapes meet OEM quality standards and most are recognized by UL as noted in data sheets.

Tape Adhesives

Thermosetting Rubber (RT): Thermosetting adhesives have high initial adhesion and electrical purity. When properly thermoset, a rubber-resin adhesive system will cross-link into a three-dimension matrix molecular form providing greater adhesion and bonding, higher solvent resistance and higher heat resistance.

Acrylic (A): Acrylic adhesives are synthetic polymers specifically formulated to meet application requirements. Acrylic adhesives are compounded to resist heat, oxidation, solvents and oils, and exhibit acceptable performance in many applications without a cure cycle.

Silicone (ST): Silicone adhesives require considerably higher temperatures for the thermosetting reaction. Silicone adhesive systems have exceptional heat resistance, are inorganic and, if burned, leave a nonconductive residue.

GLASS CLOTH PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mills/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
27	Glass Cloth	RT	7.0/0.177	150/262	30/3.3	5	3,000	150	—	Edge-tear resistant, conformable, abrasion resistant; for use as coil cover, anchor, banding and core, layer and crossover insulation. PRINTABLE.
68	Saturated Glass Cloth	ST	7.0/0.177	170/298	40/4.4	8	2,500	180	Y	Edge-tear resistant, conformable, high-temperature, flame-retardant; for use as coil cover, coil banding, and crossover insulation.
69	Glass Cloth	ST	7.0/0.177	180/314	40/4.4	5	3,000	200	Y	Edge-tear resistant, conformable, high-temperature, flame-retardant; for use as coil cover, anchor, for banding and core, layer and crossover insulation; PRINTABLE.
79	Glass Cloth	A	7.0/0.177	150/262	30/3.3	5	3,000	150	—	Edge-tear resistant, conformable, solvent-resistant; for use as coil cover, anchor, and as core, layer and crossover insulation; PRINTABLE.
89	Saturated Glass Cloth	RT	7.0/0.177	170/298	40/4.4	8	2,000	130	—	Edge-tear resistant, conformable, for use as coil cover, anchor, banding, and crossover insulation.

GLASS CLOTH PRODUCTS (Continued...)

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
5151	Glass Cloth	ST	4.5/0.11	100/176	30/3.3	—	—	204	—	An easy unwind glass cloth tape impregnated with PTFE and coated with a silicone adhesive for high temperature resistance and abrasion resistance.
5153	Glass Cloth	ST	6.8/0.17	150/260	35/3.8	—	—	204	—	An easy unwind glass cloth tape impregnated with PTFE and coated with a silicone adhesive for high temperature resistance and abrasion resistance

Note: (1) RT = Thermosetting Rubber, A = Acrylic, ST = Silicone (2) UL Component Recognition Guide UL510 – Y= UL510 Recognized

ACETATE PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
11	Acetate Cloth	RT	7.0/0.178	35/62	40/4.4	10	2,000	105	—	Conformable; for use as coil cover, black; PRINTABLE
28	Acetate Cloth	RT	8.0/0.203	40/70	40/4.4	10	2,500	105	—	Similar to 11 tape, white; PRINTABLE.
1554K	Acetate Cloth	A	9.7/0.245	40/70	31.5/3.43	15	2,000	105	Y	Conformable and PRINTABLE. Good for anchoring ferrite strips on deflection yokes and for insulating and holding coil applications where flame retardancy is needed. Available in black and white.

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COTTON CLOTH PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
65	Cotton Cloth	R	9.0/0.05	40/70	25/2.7	5	1,000	105	—	Conformable. Cushioning around TV tube necks, stick-wound coils and lead anchors.

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COMPOSITE FILM PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
44	Polyester Film/Mat	RT	5.5/0.139	40/70	60/6.6	50	5,500	130	—	Puncture resistant; excellent electrical properties; tough, conformable; for insulating, anchoring and banding in motors and transformers.
44A	Polyester Film/Mat	A	5.5/0.139	40/70	20/2.2	50	5,500	130	—	Puncture resistant; excellent electrical properties; tough, conformable; for insulating, anchoring and banding in motors and transformers.
44D-A	Polyester Film/Mat	A	12/0.304	40/70	35/3.8	20	6,000	130	—	Reinforced tape with greater thickness that offers efficiency and effectiveness in building coil margin barriers. (Suitable for 44D tape applications)
44T-A	Polyester Film/Mat	A	18/0.455	80/141	45/4.9	20	8,500	130	—	Reinforced tape with greater thickness that offers efficiency and effectiveness in building coil margin barriers. (Suitable for 44T tape applications)
55	Polyester Film/Mat	RT	7.5/0.190	35/62	80/8.7	30	6,000	130	—	Edge-tear, puncture and abrasion resistant; for use as coil cover, lead pad and core, layer and crossover insulation.
67	Polyester Film/Mat	RT	5.0/0.125	35/62	35/3.8	50	5,000	130	—	Edge-tear, puncture resistant, conformable; for insulating, anchoring and banding in motors and transformers.
MR94	Polyester Film/Mat	RT	4.0/0.101	30/53	60/6.6	50	5,000	130	—	Excellent electrical properties; conformable; for insulating, anchoring, banding and protecting start lead wires, terminal strips, end turns and connections on motors and transformers.
MR94B	Polyester Film/Mat	RT	4.0/0.101	30/53	60/6.6	50	5,000	130	—	Excellent electrical properties; conformable; for insulating, anchoring, banding and protecting start lead wires, terminal strips, end turns and connections on motors and transformers.

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EPOXY FILM PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
1	Epoxy Film	A	3.5/0.088	30/53	40/4.4	120	6,500	130	Y	2.2 mil flame-retardant backing; excellent handling properties, high dielectric strength, solvent and flagging resistant; for use as an outer wrap on wrap and fill capacitors, coil cover, interlayer insulation and wire harness; PRINTABLE.
Super 10	Epoxy Film	RT	5.0/0.127	45/79	45/4.9	120	8,000	155	Y	Tough, conformable, resistant to solder damage, puncture resistant, good electrical properties; for use as coil cover, anchor, harnessing, banding and as core, layer and crossover insulation.
Super 20	Epoxy Film	A	5.0/0.127	45/79	30/3.3	120	8,000	155	Y	Tough, conformable, resistant to puncture and solder damage, good electrical and handling properties; excellent flagging, solvent resistance; good high-temperature shear strength; for use as coil cover, anchor, harnessing, banding and as core, layer and crossover insulation; PRINTABLE.

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FILAMENT REINFORCED PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
46	Polyester Film/Glass Filament	RT	7.0/0.177	275/481	50/5.5	5	5,500	130	—	Good tensile strength and edge-tear resistance; for use in end-turn taping.
1139	Polyester Film/Glass Filament	A	6.5/0.165	225/394	35/3.8	6	5,500	155	—	Solvent-resistant, high tensile strength; for use in heavy-duty bundling, holding, reinforcing application, and air and oil-filled transformer transfer.
	Polyester Film/Glass Filament	RT	6.5/0.165	300/525	55/6.05	5	5,500	130	—	Good tensile strength and edge-tear resistance; for use in end-turn taping.

FILAMENT REINFORCED PRODUCTS (Continued...)

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
1276	Paper/Glass Filament	A	9.0/0.228	275/481	40/4.4	5	3,500	105	—	Solvent-resistant, high shear strength adhesive; good tensile strength for holding in oil-filled transformer applications.
1339	Polyester Film/Glass Filament	A	6.5/0.165	275/481	35/3.8	5	5,500	130	—	Solvent-resistant, high shear strength adhesive; good tensile strength and edge-tear resistance; for holding applications.

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PAPER PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
12	Flatback	RT	5.5/0.14	30/53	45/4.9	—	2,000	105	—	For banding coils and for cover on bobbin-wound coils.
16	Crepe	RT	9.0/0.228	25/44	50/5.5	10	2,500	105	—	Conformable; for use as coil cover on bobbin-wound coils.

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POLYIMIDE FILM PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
92	Film	ST	3.0/0.076	30/53	25/2.8	50	7,500	180	Y	1 mil film; tough, thin, designed for high-temperature applications; used on coils, capacitors and harnesses; PRINTABLE
1093	Film	ST	2.5/0.063	35/62	20/22	50	7,500	180	—	1 mil film; tough, thin, puncture resistant; for use in high-temperature masking and DC/fractional motor applications.
1205	Film	A	3.0/0.076	30/53	35/3.8	55	7,500	155	Y	1 mil film; solvent-resistant version of 92 tape.
1206	Film	A	2.2/0.055	30/53	35/3.8	35	7,500	155	—	1 mil film; tough, thin, solvent resistant version of 1093 tape.

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PTFE FILM PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
60	Film	ST	4.0/0.102	20/35	30/3.2	200	9,500	180	Y	2 mil film; consistent physical and electrical properties over a broad temperature range; for use on high temperature coils, capacitors and wire harnesses.
61	Film	ST	7.0/0.178	45/79	35/3.8	300	15,000	180	Y	5 mil film; suitable for applications similar to 60 tape where high dielectric and breaking strength are required.
62	Bondable Film on liner	ST	4.0/0.102	20/35	30/3.2	200	9,500	180	Y	2 mil film; bondable backside for higher adhesion to its own backing and better bonding of resins and varnishes; suitable for applications similar to 60 tape; PRINTABLE
63	Film	A	3.5/0.088	20/35	35/3.8	200	9,500	155	Y	2 mil film; similar to 60 tape; solvent-resistant adhesive; for use where chemical properties are more important than temperature resistance.

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VINYL PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
22	PVC	RN	10.0/0.254	20/35	25/2.7	200	12,000	80	Y	Heavy-duty insulation designed for general purpose use where greater mechanical strength and abrasion resistance are required.
33	PVC	RN	7.0/0.177	17/30	24/2.6	200	7,000	80	Y	Provides moisture-tight electrical and mechanical protection; good resistance to abrasion, moisture, alkalis, acids, and varying weather conditions (including ultra violet exposure)
Super 33+	PVC	RN	7.0/0.177	15/26	28/3.0	250	8,750	80/105	Y	All-weather vinyl insulating tape; conformable for cold weather applications; excellent resistance to abrasion, moisture, alkalis, acids, UV rays and weather. Thicker for quicker build-up.

VINYL PRODUCTS (Continued...)

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
35	PVC	RN	7.0/0.177	17/30	20/2.2	225	8,750	80/105	Y	Colour coded tape available in 9 fade-resistant colours; abrasion and weather resistant; for use in phase identification, colour coding leads and piping systems, and for marking safety areas; resistant to moisture, alkalies, acids and copper corrosion.
Super 88	PVC	RN	8.5/0.215	20/35	25/2.7	250	10,000	80/105	Y	All-weather vinyl insulating tape; conformable for cold weather applications; excellent resistance to abrasion, moisture, alkalies, acids, and copper corrosion.
1710	PVC	RN	7.0/0.177	17/30	24/2.6	200	7,500	80	Y	Good quality, economical general purpose insulating tape; good resistance to abrasion, moisture, alkalies, acid, copper corrosion and varying weather conditions (including ultra violent).

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POLYESTER FILM PRODUCTS

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
5	Film	A	2.5/0.063	25/44	35/3.8	100	5,500	130	—	1 mil film; solvent-resistant; for use in coil and capacitor holding applications
54	Film	RT	2.5/0.063	25/44	45/4.9	100	5,500	130	—	1 mil film; for use in fine wire coils where magnet wire serves to colour code.
56	Film	RT	2.3/0.058	25/44	50/5.5	100	5,500	130	—	1 mil film; for use as layer insulation and coil cover in 130°C applications.
57	Film	RT	3.3/0.083	50/88	60/6.5	110	7,000	130	—	2 mil film; for use as a coil cover, layer insulation and capacitor wrap where higher electrical strength is desired.
58	Film	RT	3.3/0.083	50/88	60/6.5	110	7,000	130	—	2 mil film; for use as a coil cover, layer insulation and capacitor wrap where higher electrical strength is desired.

POLYESTER FILM PRODUCTS (Continued...)

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
74	Film	RT	0.8/0.20	12/21	20/2.2	100	3,500	130	—	0.5 mil film; conformable; provides good electrical strength for coil applications where space is at a premium.
75	Coated Film	RT	3.8/0.96	25/44	45/4.9	100	6,500	130	—	1 mil film; coated on both sides; for use in bonding applications requiring a double-positive insulation barrier.
1136	Film	RT	2.5/0.063	23/40	40/4.4	100	5,000	130	—	1 mil film; for use in coil banding and coil wrapping where conformability is desirable.
1298	Film	A	2.5/0.063	25/44	40/4.4	100	5,500	130	Y	1 mil film with flame-retardant adhesive; excellent flagging and solvent resistance; for use as an outer wrap on capacitors and coils; PRINTABLE.
1318-1	Film	A	2.5/0.063	25/44	30/3.3	100	5,500	130	—	1 mil film; excellent flagging and solvent resistance; for use as an outer wrap on capacitors and coils; PRINTABLE.
1318-2	Film	A	3.3/0.083	50/88	30/3.3	110	7,000	130	—	2 mil film; excellent flagging and solvent resistance; for use as an outer wrap on capacitors and coils; PRINTABLE.
1350-1	Film	A	2.5/0.063	25/44	30/3.3	100	5,500	130	Y	1 mil film with flame-retardant adhesive; excellent flagging and solvent resistance; for use as an outer wrap on capacitors and coils; PRINTABLE.
1350-2	Film	A	3.3/0.083	50/88	30/3.3	110	7,000	130	Y	2 mil film with flame-retardant adhesive; excellent flagging and solvent resistance; for use as an outer wrap on capacitors and coils; PRINTABLE.
1350T-1	Film	A	3.0/0.080	44/77	25/2.7	50	6,500	130	Y	1.5 mil, triple-layer, polyester film with flame-retardant acrylic adhesive. Excellent flagging and solvent resistance, with good wet grab and smooth, even unwind for use on automated equipment.
1351-1	Film	A	2.5/0.063	25/44	30/3.3	100	5,500	130	Y	1 mil film with flame-retardant acrylic adhesive, excellent flagging and solvent resistance; for use as inner layer and outer wrap insulation on coils. Smooth, even unwind for use on automatic equipment.

POLYESTER FILM PRODUCTS (Continued...)

Part No.	Description	Adhesive System	Total Tape Thickness Mils/mm	Breaking Strength (lb/in)/(N/10mm)	Adhesion to Steel (lb/in)/(N/10 mm)	% Elongation	Dielectric Strength	Insulation Class (°C)	UL/UL510	Features/Benefits
1351-2	Film	A	3.0/0.088	50/88	30/3.3	110	7,500	130	Y	2 mil film with flame-retardant acrylic adhesive, excellent flagging and solvent resistance; for use as inner layer and outer wrap insulation on coils. Smooth, even unwind for use on automatic equipment.
1351T-1	Film	A	3.0/0.080	44/77	25/2.7	50	6,500	130	Y	1.5 mil, triple-layer, polyester film with flame-retardant acrylic adhesive. Excellent flagging and solvent resistance, with good wet grab and smooth, even unwind for use on automated equipment.

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Other 3M™ Products

For products not shown here, please contact Electrowind directly. Electrowind has access to 3M Specialty tapes, 3M Industrial tapes, 3M Scotchcast Resins, 3M Heat Shrink products and many more items from 3M.

