



Tape Solutions for Electrical Insulation

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Saint-Gobain® offers a wide range of **CHR®** electrical grade adhesive tapes for many markets including Aerospace, Oil & Gas, Electronics, Electrical, and Industrial. Electrical insulation needs in demanding environments are solved using tape solutions with a combination of backings and adhesives to match the defined application requirements. For example, dry type transformers require high electrical insulation adhesive tapes for all thermal classes, good absorption and mechanical resistance, whereas oil-filled transformers need good oil resistance, high adhesion, and high voltage resistance.

We offer several **CHR** products that have been certified under UL Electrical Insulation Systems. UL ratings list the maximum hot spot operating temperature that an electrical machine can withstand. To pass this testing, electrical insulation is expected to survive for 20,000 hours at the rated temperature, and testing also demonstrates that the insulation will survive at 20 degrees higher than the rated temperature for 5,000 hours. UL ratings are required by the largest Original Equipment Manufacturers (OEMs) who manufacture transformers, coils, and motors.

Available Electrical Insulation Tape Materials

High Temperature - UL Class N (200°C) and UL Class H (180°C)

PTFE Tapes with silicone adhesive and low coefficient of friction. Outstanding temperature resistance, ideal solution for insulation of high frequency motors.

Polyimide (PI) Film (Kapton®) Adhesive Tapes offer the most outstanding insulating performances for traction motors. Flame retardant according to UL510, thin but very high temperature resistant. The most outstanding heat and dielectric performances as insulation for transformers under high temperature (>180°C).

PEN (Teonex®) Film recommended for insulation of transformers and coils. Excellent chemical resistance and to high temperatures, up to 180°C.

Glass Cloth Tapes for dielectric insulation in coils provide long-term performance, high tensile strength, heat resistance, and abrasion resistance. High temperature resistance (up to 220°C) and excellent mechanical properties. Ideal for many electrical insulation requirements due to their outstanding flame retardant performance, and the best solution for insulating and outer wrapping of medium or larger sized electric motors.

Nomex® Aramid Paper Tapes with acrylic and rubber adhesives are an ideal choice for any kind of motor, to guarantee its performance and durability. Nomex PET Film or Glass Cloth Laminated Tapes offer higher dielectric, tensile strength and insulation in motors. High impregnation properties, insulation for transformers.

Glass Filament Reinforced PET Film and Paper Tapes designed to wind under high chemical and mechanical resistance in dry or oiled-filled transformers. Versions with acrylic adhesive offer better chemical resistance to oils and solvents.

Medium Temperature - UL Class F (155°C), UL Class B (130°C) and UL Class A (105°C)

PET Film/Non-Woven & Paper Laminated Tapes for phase insulation and coils wrapping. Puncture resistance, with good conformability and strength.

PET Film Adhesive Tapes combined with pressure sensitive adhesives (rubber, silicone or acrylic adhesive), available in a wide range of thicknesses and colors. High tack with good adhesion on many kinds of materials, good conformability, breakdown voltage and tensile strength. Good compatibility to varnishes and resins. Flame retardant and printable. Used for interlayer insulation and final binding; insulating of smaller dry type transformers or toroidal coils.

Acetate Cloth Backed Tapes combined with our thermosetting rubber adhesive, these tapes provide a very good initial tack. High conformability, are used for outer wrapping of bobbins and smaller transformers.

Double-Sided Adhesive Tapes used for the manufacturing of transformers to fix insulating material by the initial unwinding. Good initial adhesion and electrical properties.

Copper Foil Tapes with conductive acrylic adhesive for static electricity discharging and shielding from electromagnetic/electrostatic fields.

Electrical Insulation Tapes

High Temperature - UL Class N (200°C) and UL Class H (180°C)

Substrate	Adhesive	Tape Backing Thickness		Specification		Product Features	Common Applications
		Product Code		UL File	Insulation Class (°C)		
		0.0005-0.002 inches (0.013 - 0.050 mm)	0.003 - 0.010 inches (0.075 - 0.250 mm)				
Glass Cloth	Silicone		G565	OANZ2.E51201	200 (Class N)	High strength abrasion resistant tape	Coils, Motors
PTFE	Silicone	2255		OANZ2.E66639	180 (Class H)	High strength and high dielectric tape	High Frequency Motors, Wire Harnesses
PTFE	Silicone		2045	OANZ2.E66639	180 (Class H)	High elongation tape for conformable wire wrapping	High Frequency Motors, Wire Harnesses
FEP	Silicone	C Tape			180 (Class H)	For use in low temperature applications (-196°C)	High Frequency Motors, Wire Harnesses
FEP	Silicone	2355			180 (Class H)	Exceptional clarity with a clean removal adhesive	High Frequency Motors, Wire Harnesses
Polyimide	Silicone	K271, K275		OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Thermally Conductive Polyimide Tape	Thermal Interface Material, Heaters
Polyimide	Silicone	K350	2345-5	OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Thick Polyimide Tape	High Voltage Motors
Polyimide	Silicone	2345-1D, 2345-2D		OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Featuring Dupont® Kapton® Film	DuPont® Kapton® Qualified Traction Motors, Transformers
Polyimide	Silicone	K250 (also listed as K250A)		OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Premium Electrical Grade Polyimide with high adhesion	High Temperature Motors, Wire Harnesses
Polyimide	Silicone	2345		OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Clean Removal Adhesive	Motors, Coils, Transformers, Wire Harnesses
Polyimide	Silicone	K201		OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Lower Grade Polyimide featuring a clean removal adhesive	Motors, Coils, Transformers, Wire Harnesses
Polyimide	Silicone	K104		OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Ultra-Thin Polyimide Tape	Speaker Insulation
PEN	Silicone	K30, K50		OANZ2.E178430	180 (Class H)	Featuring Chemical Resistant DuPont® Teonex®	Transformers & Coils
Glass Cloth	Silicone		G561	OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Thermoset Silicone, Mil-i-19166C	High Temperature Motors, Wire Harnesses
Glass Cloth	Silicone		2915-7, 2915-10	OANZ2.E66639 & OANZ2.E51201	180 (Class H)	High Adhesion, Mil-i-19166C	High Temperature Motors, Wire Harnesses
Glass Cloth	Silicone		GL99	OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Cleaner adhesive	High Temperature Motors, Wire Harnesses
Glass Cloth	Silicone		2905	OANZ2.E66639 & OANZ2.E51201	180 (Class H)	Silicone Coated on 2 sides	High Temperature Motors, Wire Harnesses

Medium Temperature - UL Class F (155°C), UL Class B (130°C) and UL Class A (105°C)

Substrate	Adhesive	Tape Backing Thickness		Specification		Product Features	Common Applications
		Product Code		UL File	Insulation Class (°C)		
		0.0005-0.002 inches (0.013 - 0.050 mm)	0.003 - 0.010 inches (0.075 - 0.250 mm)				
Polyimide	Acrylic	K102DU		OANZ2.E178430 & OANZ2.E51201	155 (Class F)	Featuring Dupont® Kapton® Film	Satellites, Aerospace Electronics
Polyimide	Acrylic	K102		OANZ2.E178430 & OANZ2.E51201	155 (Class F)	Designed with a low outgassing adhesive	Satellites, Aerospace Electronics
Polyimide	Acrylic	K103 (also listed as K103A)		OANZ2.E178430 & OANZ2.E51201	155 (Class F)	Higher Adhesion	Electrical & Electronic Insulation
Polyimide	Acrylic	70AC		OANZ2.E178430 & OANZ2.E51201	155 (Class F)	Cleaner Adhesive	Electrical & Electronic Insulation
Glass Cloth	Acrylic		GL94, G569	OANZ2.E178430 & OANZ2.E51201	155 (Class F)	High Adhesion, Abrasion Resistant, Chemical Resistant	Motors
Nomex	Acrylic		X50, N203	OANZ2.E178430 & OANZ2.E51201	155 (Class F)	For Use With Dielectric Oil Insulation Systems	Motors & Transformers
PET/Filament	Acrylic		PS25, PS249	OANZ2.E178430	155 (Class F)	High Strength	Motors & Dry/Oil-Filled Transformers
PET/Filament	Rubber		PR25	OANZ2.E178430	155 (Class F)	High Strength, High Adhesion & Tack	Motors & Dry/Oil-Filled Transformers
Glass Cloth	Rubber		GL95, G551	OANZ2.E178430	130 (Class B)	High Adhesion & Tack	Motors
PET/Nonwoven	Acrylic		PT 20/20	OANZ2.E178430	130 (Class B)	Wrap Around Sharp Edges & Corners	Phase Insulation & Coils Wrapping
PET/Nonwoven	Rubber		PT25	OANZ2.E178430	130 (Class B)	High Adhesion & Tack- Wrap Around Sharp Edges & Corners	Phase Insulation & Coils Wrapping
PET	Silicone	M50, M52, M717, M746, M751, M758, M803, M815, M823, M824, M730, M887		OANZ2.E178430 & OANZ2.E51201	130 (Class B)	Wide range of colors	Interlayer Insulation & Final Binding, Motors, Transformers, Coils
PET	Acrylic	M97, M60, M705, M765, P34		OANZ2.E178430 & OANZ2.E51201	130 (Class B)	Wide range of colors	Interlayer Insulation & Final Binding, Motors, Transformers, Coils
PET	Rubber	M56, M54A, M734, M797, M851, M852, M783, P31, P315	M855, M787	OANZ2.E178430 & OANZ2.E51201	130 (Class B)	Wide range of colors	Interlayer Insulation & Final Binding, Motors, Transformers, Coils
Acetate Cloth	Acrylic	CA100			105 (Class A)	Available in white and black	Bobbins, Smaller Transformer Outer Wrap
PET	Acrylic	M69, M30T, V7200				Adhesive on 2 sides	Attachment & Splicing Tapes
PET	Rubber	P231		OANZ2.E178430 & OANZ2.E51201		Adhesive on 2 sides	Attachment & Splicing Tapes
Copper Foil	Acrylic	C665				Electrically Conductive Adhesive	EMI Shielding

Your Partner in Custom Tape Solutions

A custom tape solution can pay for itself many times over thanks to the process and product improvements it can provide. Tape development engineers will work with partners to design an economical but highly effective tape product.

Even with endless permutations of industrial tapes available only one company that can deliver a custom-made tape with optimal adhesive, the perfect backing materials, seamless process integration and superb performance.

To learn more about how **Saint-Gobain** can help solve tape and materials engineering challenges, call us or visit us online.

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