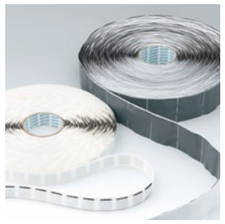
Nitto

Innovation for Customers

ELECTRIC INSULATING PRODUCTS



Your requirements are our speciality

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Nitto Shinko materials for insulation and protection are used in various fields like power lines, automobiles, and communications equipment.

Nitto Shinko develops and delivers protection and insulation materials that enhance performance and safety.
Our lineup of insulating tapes and covers includes many outstanding functional combinations that match customer's needs.
Our products are used in various applications for insulation, protection and binding.

Electrical insulation cloth

Support characteristics, reliability and life of electric equipments.

Applications : Transformers, motors and etc.

To P3

Multi-layer laminated

Combined with different materials to exert composite of functions.

Applications : Motors, generators and etc.

To P4

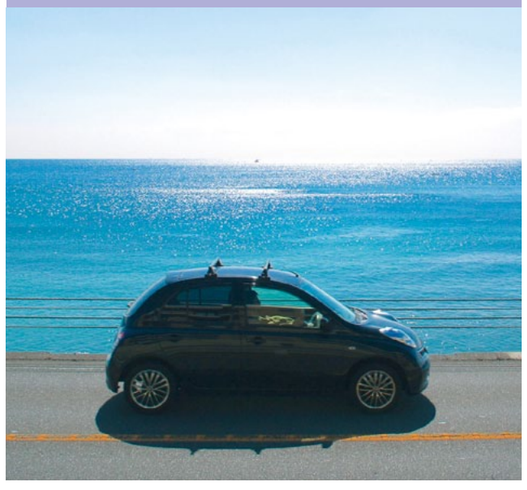
Power cable

Essential insulating materials for lifeline.

Applications : Power cables

To P5

Communication and automobile



Perform in various fields for insulation and protection.

Applications : Commucnication cables, wire harness and etc.

To P6

Electrical insulation cloth

For some time now the most remarkable progress within the electronic device industry has been driven by electrical insulation materials.
Insulation performance affects all aspects of the device's performance such as properties, reliability and lifespan.
Traditionally, electrical insulating cloth has been the material of choice for such insulating material.
A thin insulating cloth, combining cotton or glass cloth as a base material with varnish or silicon, is widely used among our customers.

Product name	Product NO.	Backing	Max allowable temp (℃)	Standard size			Properties		
				Thickness [mm]	Width [mm]	Length [m]	Tensile strength [N/15mm]	Elongation [%]	Breakdown voltage [kV]
Varnished Cloth	VC-Y	Cotton cloth	105	(0.18)	>900	10 50	136.0	4.8	10.9
Varnished Cloth Tape	VCT-Y	Cotton cloth	105	(0.18)	19 25	50	136.0	4.8	10.9
Varnished Tetron Cloth	VTC-Y	Tetron cloth	120	0.08 (0.10) 0.13	>1120	45	89.9	21.1	9.3
				0.18	>1060				
Varnished Tetron Cloth Tape	VTT-Y	Tetron cloth	120	0.08 (0.10) 0.13 0.18	13 19 25	45	89.9	21.1	9.3
Varnished Glass Cloth	VGC-Y	Glass cloth	130	0.13	>1130	30	369.2	–	12.6
				(0.18) 0.25	>980				
Varnished Glass Cloth Tape	VGCT-Y	Glass cloth	130	0.13 (0.18) 0.25	13 19 25	30	369.2	–	12.6
Epoxy Alkyd Varnished Tetron Cloth	EATC	Tetron cloth	130	(0.18)	>900	45	209.6	26.7	10.8
Epoxy Ester Glass Cloth	FFVGC	Glass cloth	155	0.13 (0.18)	>980	30	367.0	–	10.8
Epoxy Ester Glass Cloth Tape	FFVGCT	Glass cloth	155	0.13 (0.18)	13 19 25	30	367.0	–	10.8
Silicone Varnished Glass Cloth	SVGC	Glass cloth	180	(0.18) 0.25	>980	30	478.5	–	12.4
Silicone Rubber Glass Cloth	SRGC	Glass cloth	180	(0.10) 0.18 0.25	>980	30	226.6	–	6.3

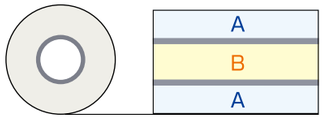
■The above values are sample observed values, not the guaranteed performance.

Multi-layer laminated

In traditionally high performance demand markets like automotive, home appliance and industrial equipment, customers are looking for properties such as insulation reliability and mechanical strength.
Multilayer laminated products offer excellent insulation and protect a magnet wire from a sharp metal edge.
We provide the products combined with various materials such as aramid paper and PET depending on each application.

Aramid paper composite

❶ Structure



■Example : NTN–2 2 2(S)

- A : Aramid paper 2mils
- B : PET 2mils
- A : Aramid paper 2mils

		Code
A	Aramid paper	N
B	PET film	T
	PEN film	P

Product name	A	B	Thickness
NTN	Aramid paper	PET	mils
NPN	Aramid paper	PEN	mils

❷ Size and properties

Product name	Product NO.	Max allowable temp (℃)	Standard size				Properties				
			Thickness [mm]	Width [mm]		Length [m]	Tensile strength [N/15mm]		Tear resistance [N/20mm]		Breakdown voltage [kV]
				Minimum	Maximum		length	Width	length	Width	
Aramid paper composite	NTN-222(S)	155	0.18	15	900	50 100	245	199	520	480	12.9
	NTN-252(S)	155	0.25				374	371	955	904	17.5
	NTN-353(L)	155	0.30				471	417	1024	900	17.2
	NPN-222(SA)	155	0.21				284	229	557	573	15.5

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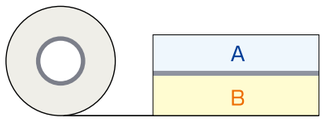
Polyester film laminated

❶ Structure



■Example : TK–2 5 0 8

- A : kraft paper 80μm
- B : PET 25μm

		記号
A	Kraft paper	K
	Pressboard	P
B	PET film	T

Product name	A	B	Thickness
TK	Kraft paper	PET	μm
TP	Pressboard		μm

❷ Size and properties

Product name	Product NO.	Max allowable temp (℃)	Standard size				Properties				
			Thickness [mm]	Width [mm]		Length [m]	Tensile strength [N/15mm]		Tear resistance [N/20mm]		Breakdown voltage [kV]
				Minimum	Maximum		length	Width	length	Width	
Polyester film laminated	TK-2508	120	0.12	15	1000	50 100	202	77	165	158	5.7
	TK-5018		0.24				444	147	342	356	9.2
	TP-2513		0.17				344	110	193	175	6.3
	TP-5018		0.24				554	207	384	340	9.3

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Power cable

In order to support electrical equipment, indispensable in daily life and industry, Nitto Shinko provides a full array of insulating tapes and covers for high voltage lines, including self-fusing tapes and adhesive tapes.
Materials ranging from butyl and synthetic rubber to polyethylene and PVC are adapted to suit many specific needs.

	Product name	Product NO.	Standard size			General characteristics			Features / Applications
			Thickness [mm]	Width [mm]	Length [m]	Tensile strength [N/mm²]	Elongation [%]	Breakdown voltage [kV/mm]	
Insulation	Butyl Rubber Self-Fusing Tape	No.11	0.50	19	10	3.2	530	42	For electric cable terminal taping / joint Non-vulcanized butyl rubber tape (6～22kV)
	Butyl Rubber Self-Fusing Tape	No.15	0.50	19	10	3.1	550	43	For electric cable terminal taping / joint (Non-liner version of No.11)
For Salt Damage Prevention	Tracking Resistant Butyl Rubber Self-Fusing Tape	No.15T	0.50	19	10	2.6	650	36	For salt protection of cables Tracking-resistant tape without liner
	Tracking Resistant Butyl Rubber Self-Fusing Tape	No.15NT	0.50	19	10	1.9	760	35	Tracking-resistant butyl rubber self-fusing tape For cable protection (Stronger salt protection than No.15T)

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	Product name	Product NO.	Standard size			General characteristics			Features / Applications
			Thickness [mm]	Width [mm]	Length [m]	Tensile strength [N/mm²]	Elongation [%]	Volume resistivity [Ω·cm]	
Semiconducting	Semiconductive Cross-Linked polyethylene Tape	ACP Tape	0.17	19	10	12.0	210	2×10^3	For electric field reduction in cable joint Internal conductivity of direct joint

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	Product name	Product NO.	Standard size			General characteristics			Features / Applications
			Thickness [mm]	Width [mm]	Length [m]	Tensile strength [N/mm²]	Elongation [%]	Breakdown voltage [kV/thickness]	
Protection	Vinyl Adhesive Tape	No.22	0.20	19	10	25.0	280	13	For electric cable terminal treatment / joint Adhesive vinyl tape (peel adhesion 780g/19mm)
	Self-Fusing Silicone Rubber Tape	No.66	0.50	19	15	7.1	590	46	For protecting electric cable joint insulation Excellent heat and weather resistance
	Adhesive Joint Tape	JT-670	2.00	30	5	3.0	540	41	For electric cable terminal taping / joint Joint tape

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Communication and automobile

We can offer you excellent water sealants and wire harness tapes that are used to reduce spirant sounds in multiple automotive and other applications.
These are also widely used as an insulating or protective tape for communication cables.

	Product name	Product NO.	Standard size		General characteristics		Features / Applications
			Thickness [mm]	Width [mm]	Dielectric strength [kV/min]	Volume resistivity [Ω·cm]	
For waterproof Joints	Waterproof Joint Putty	NF-500PUTTY	1.5	20	>5.0	5×10^{14}	For insulating and waterproofing harness joint Flame-retardant (oxygen index:31.0)
	Waterproof Joint Putty	NF-500PV	1.7 2.4 3.2	37	>5.0	3×10^{14}	For insulating and waterproofing harness joint (PVC laminated type) Flame-retardant (oxygen index:31.0)
	Waterproof Joint Cover	NF-800BX	–	–	>5.0	1×10^{15}	For insulating and waterproofing harness joint (box type) Flame-retardant (oxygen index:26.3)

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	Product name	Product NO.	Standard size			General characteristics			Features / Applications
			Thickness [mm]	Width [mm]	Length [m]	Peeling strength [N/19mm]	Tensile strength [N/19mm]	Elongation [%]	
For harness	Acetate adhesive tape	No.5	0.23	19	20	5.2	140	20	For automobiles wireharness spirant sounds type
	Flame-retardant acetate adhesive tape	No.156H	0.23	19	20	11	144	21	For automobiles wireharness For flame-retardant and spirant sounds type

■The above values are sample observed values, not the guaranteed performance.

	Product name	Product NO.	Standard size			General characteristics			Features / Applications
			Thickness [mm]	Width [mm]	Length [m]	Peeling strength [N/25mm]	Tensile strength [N/mm²]	Elongation [%]	
For telecommunication	Adhesive vinyl tape	No.22H	0.20	19	20	10	25	286	For insulation of various low-voltage cable joint
	Adhesive aluminum tape	No.81A	0.13	30	20	15	–	–	Radio wave shield

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