



ELECTRIC INSULATING PRODUCTS



Your requirements are our speciality



Nitto Shinko Corporation

Head Office Customer Support Center
110-1-1, Funayose, Maruoka-cho, Sakai-shi, Fukui, 910-0381 TEL +81-776-67-0700 FAX +81-776-67-0726

The contents of this brochure (including text, graphics, data and other content) are the intellectual property of Nitto Shinko Corporation. This document may not be copied or reprinted. We ask that you contact us through our website before using the contents for any purpose other than for which they are intended. The contents of this brochure are subject to change without notice. The figures given in the brochure are observed values only and are not guaranteed.

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 sheets includes

many outstanding functional combinations that match customer's needs.

Our products are used in various applications

for insulation, protection and binding.

INDEX

● **Electrical insulation cloth** P. 3

Support characteristics, reliability and life of electric equipments.

Applications : Transformers, motors

● **Multi-layer laminated** P. 4

Combined with different materials to exert composite of functions.

Applications : Motors, generators

● **Adhesive for cryogenic applications** P. 5

Room temperature curing adhesive that can be used from cryogenic regions to room temperature.

Applications : Superconducting equipments

● **Automobile** P. 6

Perform in various fields for insulation and protection.

Applications : Wire harness



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 (°C)	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) 0.25	915	10 50	136.0	4.8	10.9
Varnished Cloth Tape	VCT-Y	Cotton cloth	105	(0.18) 0.25	13~890	50	136.0	4.8	10.9
Varnished Tetron* Cloth	VTC-Y	Tetron* cloth	120	0.08 (0.10) 0.13 0.18	1120	45	89.9	21.1	9.3
Varnished Tetron* Cloth Tape	VTT-Y	Tetron* cloth	120	0.08 (0.10) 0.13 0.18	13~1100 13~1040	45	89.9	21.1	9.3
Varnished Glass Cloth	VGC-Y	Glass cloth	130	0.13 (0.18) 0.25	1150 1000	30	369.2	-	12.6
Varnished Glass Cloth Tape	VGCT-Y	Glass cloth	130	0.13 (0.18) 0.25	13~1120 13~950	30	369.2	-	12.6
Epoxy Ester Glass Cloth	FFVGC	Glass cloth	155	0.13	1000	30	367.0	-	8.3
Epoxy Ester Glass Cloth Tape	FFVGCT	Glass cloth	155	0.13	13~950	30	367.0	-	8.3
Silicone Varnished Glass Cloth	SVGC	Glass cloth	180	(0.18) 0.25	1000	30	478.5	-	12.4
Silicone Varnished Glass Cloth Tape	SVGCT	Glass cloth	180	(0.18) 0.25	13~950	30	478.5	-	12.4
Silicone Rubber Glass Cloth	SRGC	Glass cloth	180	(0.10) 0.18 0.25	1000	30	226.6	-	6.3
Silicone Rubber Glass Cloth Tape	SRGCT	Glass cloth	180	(0.10) 0.18 0.25	13~980	30	226.6	-	6.3

■The above values are sample observed values, not the guaranteed performance.
* "Tetron™" is a registered trademark of TEIJIN LIMITED and Toray Industries, Inc. .

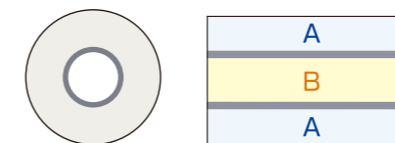
Multi-layer laminated

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

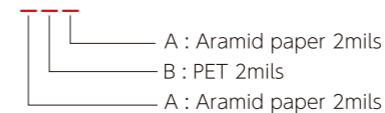
① Structure



		記号
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

■Example : NTN-222 (S)



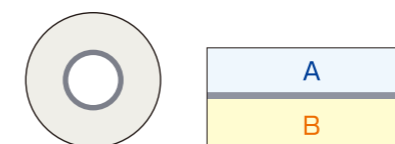
② Size and properties

Product name	Product NO.	Max allowable temp (°C)	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)	B	0.18	15	900	50	243	195	510	408	11.6
	NTN-252(S)	B	0.25				376	340	967	912	17.5
	NTN-353(L)	B	0.30				464	390	992	821	17.2
	NPN-252(SA)	F	0.29				443	524	1125	960	20.5

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

Polyester film laminated

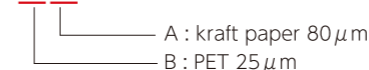
① Structure



		記号
A	Kraft paper	K
B	PET film	T

Product name	A	B	Thickness
TK	Kraft paper	PET	μm

■Example : TK-2508



② Size and properties

Product name	Product NO.	Max allowable temp (°C)	Standard size			Properties				
			Thickness [mm]	Width [mm]	Length [m]	Tensile strength [N/15mm]		Tear resistance [N/20mm]		Breakdown voltage [kV]
Length	Width	Length				Width				
Polyester film laminated	TK-2508	E	0.12	1000	50	202	70	165	158	5.7
	TK-5018		0.24			358	147	370	340	9.2

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

Adhesive for cryogenic applications

Cryogenic materials are essential for next-generation energy fields with low environmental impact. It is a room temperature curing adhesive that can be used in a wide range of applications from cryogenic regions to room temperature.



1 Product Information

Product name	Product NO.	Component	Capacity [KG]	Color	Color after mixing	Features / Applications
Adhesive for cryogenic applications	SK-229 Main agent	Epoxy-based	1	Blue	Green	Two-component adhesive, usable at -269~80°C (depends on required specifications) Superconducting equipments, (refrigerator, freezer container) LNG, Hydrogen plants and Space industry equipments (rocket fuel peripheral, satellite parts)
	SK-229 Curing agent	Amine-based	1	Yellow		

2 Physical properties before curing

Item	Curing condition [°C]	Pot life@RT [min]	Viscosity@25°C [Pa · s]	Specific gravity @20°C
Main agent	-	-	80	1.4
Curing agent	-	-	100	1.3
Compound	20~100 e.g.24°C x 24 hr, 100°C x 60min	120	80~90	1.4

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

3 Physical properties after curing

Tensile modulus [MPa]	Tensile strength [MPa]	Shear strength [MPa]	Measuring condition@RT
3010	22.3	22(24°C) 30(-196°C)	Tensile testers Tensile speed 5mm/min

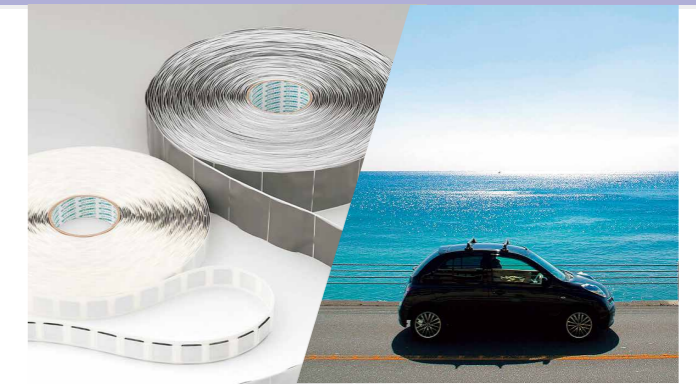
■The above values are sample observed values, not the guaranteed performance.

4 Mixing method

Measure main-agent and curing-agent 1:1, and mix it until it be an uniform green .Then apply.

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 self-fusing tapes with excellent heat resistance.



	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	3×10^{14}	For insulating and waterproofing harness joint Flame-retardant (oxygen index:31.0)
	Waterproof joint putty	NF-500PV	1.7 2.4	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	3×10^{14}	For insulating and waterproofing harness joint (box type) Flame-retardant (oxygen index:26.3)

■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/19mm]	Tensile strength [N/19mm]	Elongation [%]	
For harness	Acetate adhesive tape	No.5	0.23	19	20	5.2	128.0	20	For automobiles wireharness spirant sounds type
	Acetate adhesive tape	No.5EG	0.23	19	20	5.6	126	20	For automobiles wireharness Low VOC type
	Acetate adhesive tape	No.156A	0.25	19	30	9.0	145	20	For automobiles wireharness UL-certified, flame-retardant adhesive tape
	Product name	Product NO.	Standard size			General characteristics			Features / Applications
Thickness [mm]	Width [mm]	Length [m]	Fusion strength [N/19mm]	Tensile strength [Mpa]	Elongation [%]				
	Self-fusing silicone rubber tape	No.660	0.22	19	15	28	8.2	660	For automobiles wireharness Excellent heat resistance

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

