NITOFLON™

No.903UL

Outline

NITOFLON™ No.903UL is an adhesive tape made by coating a polytetrafluoroethylene (PTFE) film with a silicone adhesive. It has excellent properties such as heat resistance, electrical insulation, and low friction.

Structure

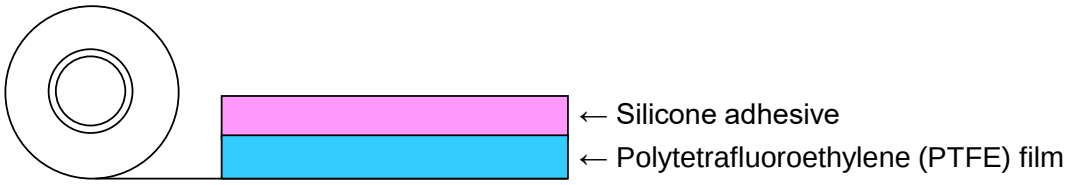

Fig.1 Structure

Features

- It has excellent properties such as heat resistance, electrical insulation, low friction, water repellency, and back releasability.
- Continuous use is possible in a wide temperature range of -60°C to 200°C (recommended value). Also, if the time is short, it can be used at higher temperatures.
- Certified under UL510 standard for flame retardant (E34833).
- It exhibits good adhesion to various materials.

Applications

- Insulation of wires, cables, and coils
- Insulation of electrodes for secondary battery and electrical storage device
- Heat-resistant sliding of printer paper passage
- Insulation and sliding of motor drive systems
- Solder masking
- Reduce squeaking noise and prevent chafing in automobile cabins
- Mold release for molding process

Standard Product Size

Table 1

Thickness(mm)	Width(mm)	Length(m)
0.08	5,9,10,13,15,18,19,20,22,25,30,38,40,50, 75,80,100,150,200,250,300,350,400,450	10
0.13		
0.18		
0.23		

*Other sizes are negotiable.

Properties

Table 2 General Properties

Items	Unit	Characteristic value			
Total Thickness	mm	0.08	0.13	0.18	0.23
180° Peeling strength (Substrate : Stainless steel)	N/19mm	5.6	7.1	7.4	8.7
Unwinding force	N/19mm	4.4	5.8	7.1	8.9
Tensile strength	N/19mm	55	93	160	210
Elongation	%	180	220	220	220
Breakdown voltage	KV	8	11	14	15
Coefficient kinetic friction	-	0.1			
Flame Retardant	-	UL510 Flame Retardant (File E34833)			
Color	-	Brownish gray			
Usable temperature (Continuous use)	°C	-60 to 200			

Note: Listed values are reference values, not guaranteed values.

Table 3 Chemical resistance

Chemicals	Condition	Chemical resistance
20%Sulfuric acid	80°C×24hours	+++
Concentrated sulfuric acid	20°C×6days	-
Concentrated hydrochloric acid	20°C×27days	+++
Concentrated hydrochloric acid	80°C×14hours	+++
Concentrated nitric acid solution	20°C×25days	+++
Glacial acetic acid	15°C×24hours	+
20% Sodium hydroxide (NaOH)	80°C×24hours	-
20% Sodium hydroxide (NaOH)	20°C×17days	++
Ammonia water	20°C×25days	+++
Toluene	80°C×14hours	-
Butanol	20°C×15days	++
Acetone	20°C×15days	+++
Transformer oil	80°C×24hours	+++
Machine oil	20°C×15days	+++

Test method
Applied No.903UL on a stainless steel plate, and immersed in each chemical shown in Table 3. Then, evaluated the change in appearance.
Substrate: Stainless steel SUS304 Polishing paper #280
Crimping load : 2kg rubber roll 1 reciprocation

Criteria for test results
+++ : No change
++ : Break away at the edge
++ : Break away at the edge
+ : Break away at same part
- : Break away completely

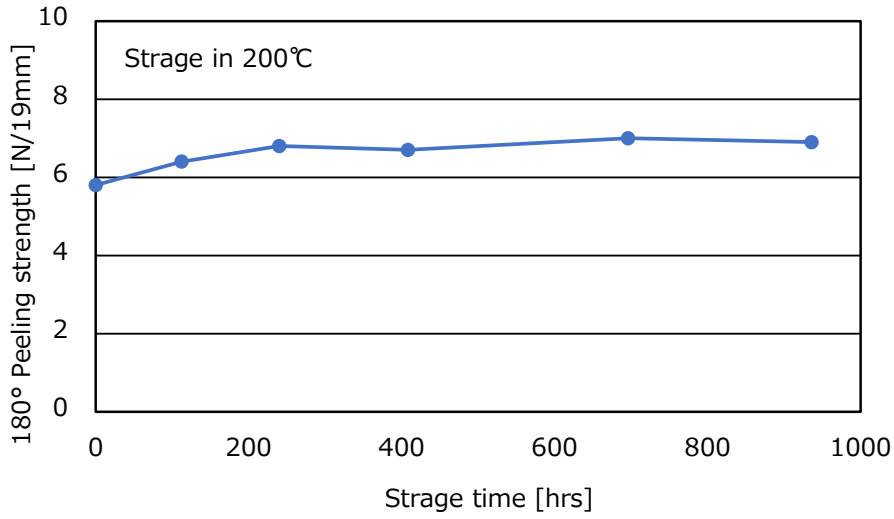

Fig.2 200°C heat resistance(0.08 mmt, adherend: SUS, Room temperature measurement)

There is no significant reduction in adhesive strength when stored at 200°C.

Table 4 Back releasability

Adhesive tape	Unit	180° Peeling strength
Rubber adhesive tape	N/25mm	3.7
Acrylic adhesive tape		1.2
Silicone adhesive tape		2.9

Table 4 is showing Adhesive strength for various adhesive tapes which have been pasted on the surface of base material (back side) of this product and peeled off to 180° direction.
All adhesive tapes have low adhesive strength and excellent release properties on the back.

Notes

- Remove oil, moisture, and dust from the surface of the adherend.
- Hold the part to be pasted well and crimp it sufficiently.
- It takes some time for the tape to exhibit its original adhesive strength. After pasting, leave it for several hours before use.
- Please note that the mechanical properties, adhesive performance, etc. will deteriorate at high temperatures.
- When disposing of this product, please dispose of it according to the local regulations. When incinerating it, please use an appropriate disposal equipment otherwise harmful fluorine gas would be generated.
- Do not heat it above 400°C as fluorine gas may be generated.
- This product is for industrial use. Please do not use it on the human body.
- Store in a cool place away from direct sunlight.