

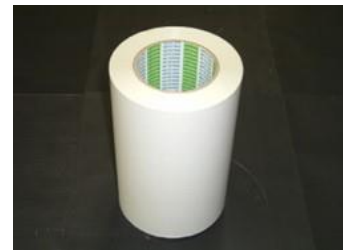
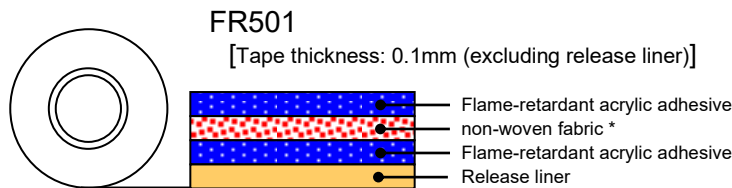
Flame-retardant double-coated adhesive tape

# FR501

## Outline

Nitto FR501 is a double-coated adhesive tape consisting of flame-retardant acrylic adhesive with a non-woven fabric. FR501 flame-retardant double-coated adhesive tape is flammability standard (UL-94) approved.

## Structure



\* "Non-woven fabric" is classified under a law called Customs Act of Fixed Rate Chapter 48 "Paper and paperboard; articles of paper pulp, of paper or of paperboard".

## Features

- Superior adhesion.
- FR501 is UL-94 VTM-0 approved product. [File No. E52859]
- Minimal VOC emission (VOC: Volatile Organic Compounds).
- Not used halogen-based or antimony-based flame retardants.

## Applications

- Electronic devices such as office equipment or house hold appliances
- Interior materials for automobiles, train cars and airplanes
- For application of other flame-retardant materials

## Sizes

Tape thickness (mm)	Width (mm)	Length (M)
0.1	1200	50

For details contact the department in charge of the product in question.

FR501 10-P-0496\_E (1/4)

**Notes:** This data represents examples of measured values, and not guaranteed values. They do not guarantee compatibility with the applications described in these documents. Please confirm compatibility with your application prior to use. We retain all rights, including copyrights, for the contents of these documents. Copying, reprinting and use for purposes other than originally intended are strictly prohibited without our prior expressed permission. Contact details are provided at the end of this document. Please do not hesitate to contact us for any inquiry.

**Properties**

- VOC emission measurement values

Measurement Materials	FR501	Conventional Product (Toluene use)
Toluene	1.9	2500

(Unit: µg/g)

Sample size : 5cm<sup>2</sup>

Heat condition : 150 degree C X30min

Detector : GC-MS

- 180 degrees peeling strength for each substrate

Substrate	FR501
Stainless steel plate	17.0
Aluminum plate	18.0
ABS plate	16.0
Acrylic plate	17.0
PSt plate	16.5
PC plate	18.0
PET plate	18.0
PP plate	11.0
Polyacetal plate	13.0
Urethane foam	2.0

(Unit: N/20mm)

Sample width: 20 mm

Backing material: PET#25

Application condition:

1 pass back and forth with a 2kg roller

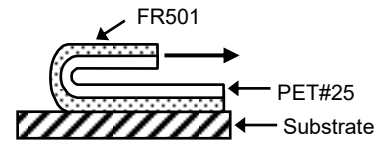
Bonding temperature: 23degreeC/50%RH

Curing condition: 23degreeC/50%RH x 30 min

Peeling speed: 300 mm/min

Peeling angle: 180degree

Measurement temperature: 23degreeC/50%RH



- 180 degrees peeling strength for each temperature

Measurement temperature	FR501
0 degree C	13.5
23 degree C	17.0
40 degree C	13.0
80 degree C	9.0

(Unit: N/20mm)

Substrate: Stainless steel plate

Sample width: 20 mm

Backing material: PET#25

Application condition:

1 pass back and forth with a 2 kg roller

Bonding temperature: Measurement temperature

Curing condition:

Measurement temperature x 30 min

Peeling speed: 300 mm/min

Peeling angle: 180 degrees

Measurement temperature: 0, 23, 40, 80 degree C

FR501 10-P-0496\_E (2/4)

**Notes:** This data represents examples of measured values, and not guaranteed values. They do not guarantee compatibility with the applications described in these documents. Please confirm compatibility with your application prior to use. We retain all rights, including copyrights, for the contents of these documents. Copying, reprinting and use for purposes other than originally intended are strictly prohibited without our prior expressed permission. Contact details are provided at the end of this document. Please do not hesitate to contact us for any inquiry.

- 180 degrees peeling strength for each pressure

Application	FR501
0.1 kg roller	14.0
0.5 kg roller	16.0
2 kg roller	17.0
5 kg roller	17.5

(Unit: N/20mm)

Substrate: Stainless steel plate

Backing material: PET#25

Application condition:

1 pass back and forth with a 0.1 kg, 0.5 kg, 2 kg, 5 kg roller,

Bonding temperature: 23degreeC/50%RH

Curing condition: 23degreeC/50%RH x 30 min

Peeling speed: 300 mm/min

Peeling angle: 180degree

Measurement temperature: 23degreeC/50%RH

- Holding power

Measurement temperature	FR501
23 degree C	0.2
40 degree C	0.2
60 degree C	0.4

(Unit: mm/hr)

Substrate: Phenolic plate

Curing condition:

Measurement temperature x 30min

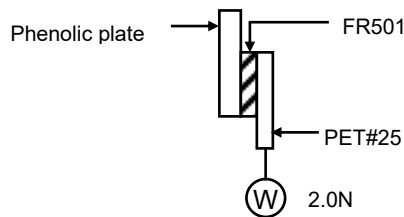
Measurement temperature:

23, 40,60 degree C

Application area: 20mm x 10mm

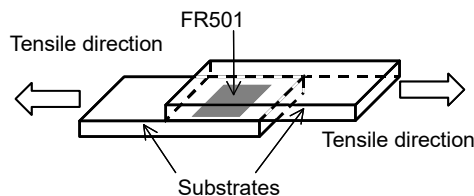
Load: 2.0N(200g)

Loading time: One hour



- Shearing strength

Substrate	FR501
Stainless steel plate	420



(Unit: N/20mmx20mm)

Sample: 20mm x 20mm

Application condition:

1 pass back and forth with a 5 kg roller,

Bonding temperature: 23degreeC/50%RH

Curing condition: 23degreeC/50%RH x 30 min

Measurement condition: 23degreeC/50% RH

Peeling speed: 50 mm/min

FR501 10-P-0496\_E (3/4)

**Notes:** This data represents examples of measured values, and not guaranteed values. They do not guarantee compatibility with the applications described in these documents. Please confirm compatibility with your application prior to use. We retain all rights, including copyrights, for the contents of these documents. Copying, reprinting and use for purposes other than originally intended are strictly prohibited without our prior expressed permission. Contact details are provided at the end of this document. Please do not hesitate to contact us for any inquiry.

- 180 degrees peeling strength  
-Curing under each environment after application (Durability)

Conditions		FR501
Initial (23degreeC/50%RH x 30 min)		17.0
- 30 degree C x 30 days		22.0
70 degree C	7 days	22.5
	14 days	23.5
	30 days	24.5
40 degree C /92%RH	14 days	19.0
	30 days	20.5
60 degree C/90%RH x 30 days		20.0
Heat shock [100 cycles] *1		24.5
Heat cycle [40 cycles] *2		19.5

(Unit: N/20mm)

Substrate: Stainless steel plate

Backing material: PET#25

Application condition:

1 pass back and forth with a 2 kg roller

Curing condition: See the left table

Peeling speed: 300 mm/min

Peeling angle: 180 degrees

Measurement temperature: 23degreeC/50%RH

\*1: Heat shock condition

[-40degreeC x 30min ↔ 90degreeC x 30min]

x 100cycles

\*2: Heat cycle condition

[-20degreeC x 6hrs => (1hr) =>

60degreeC/95%RH x 6hrs => (1hr) =>] x 40 cycles


## Precautions when using

- Remove all oil, moisture and dirt from the surface of the substrate before applying.
- Since the tape is pressure-sensitive adhesive, be sure to apply enough pressure with a roller or press when applying. Otherwise it might be affected to its properties and appearance.
- The tape may not adhere well to extremely uneven or distorted surfaces. Enough Leveling off the surface should be required before applying.
- It takes certain time to get full adhesive strength after applying, keep away the tape from any stress for a several hours after applying.

## Precautions when storing

- Please be sure to keep the tape in its box when not using.
- Please keep in a cool and dark place away from direct sunlight.

## Safety precautions

 <b>WARNING</b>
<ul style="list-style-type: none"> <li>● Make sure the product is suitable for the application (objective and conditions) before attempting to use. The tape may come off depending on the substrate to which it is applied or conditions under which it is applied.</li> <li>● Use in combination with another method of joining if there is possibility of an accident.</li> </ul>

Published in March 2026

FR501 10-P-0496\_E (4/4)

**Notes:** This data represents examples of measured values, and not guaranteed values. They do not guarantee compatibility with the applications described in these documents. Please confirm compatibility with your application prior to use. We retain all rights, including copyrights, for the contents of these documents. Copying, reprinting and use for purposes other than originally intended are strictly prohibited without our prior expressed permission. Contact details are provided at the end of this document. Please do not hesitate to contact us for any inquiry.