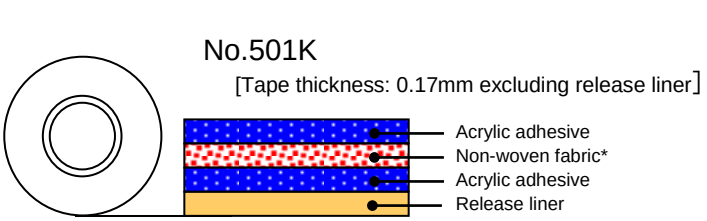
Double-coated adhesive tape

# No.501K

## Outline

Nitto No.501K double-coated adhesive tape consists pressure-sensitive acrylic adhesive with non-woven fabric. The tape adheres well to rough surfaces such as cloth and synthetic leather as well as metal plastic.

## 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 initial adhesion.
- Offers strong adhesion and excellent fixing to devices.
- The ten hazardous materials restricted by the RoHS directive are not compounded.

## Applications

- Temporary fixing of handicrafts.
- Sewing up margin of bag.
- Other general bonding.

## Sizes

| Tape thickness (mm) | Width (mm) | Standard length (M) |
|---|---|---|
| 0.17 | 3-1,200 | 20,50 |

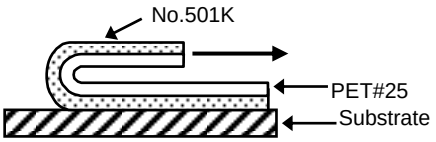
For details, please contact us.

## Properties

●180 degree peeling adhesion for each substrate

| Substrate | | No.501K |
|---|---|---|
| Stainless Steel Plate | | 10.7 |
| Aluminum Plate | | 9.8 |
| Glass Plate | | 12.7 |
| ABS Plate | | 10.7 |
| Acrylic Plate | | 16.0 |
| PCABS Plate | | 18.0 |
| PS t Plate | | 16.0 |
| PC Plate | | 15.5 |
| PET Plate | | 14.3 |
| PP Plate | | 7.4 |
| POM Plate | | 8.5 |
| Veneer Plate | | 8.3 |
| File Plate | | 14.4 |
| Cardboard Box | | 3.9 |
| Polyethylene foam (expansion ratio:30) | | 4.9 |
| Leather | Grain Side | 7.8 |
| | Back Side | 4.4 |
| Synthetic Leather | Grain Side | 7.4 |
| | Back Side | 5.9 |

(Unit: N/20mm)
Sample width: 20 mm
Lining material: PET#25
Application condition:
1 pass back and forth with a 2kg roller
Application temperature: 23degreeC/50%RH
Applying condition: 23degreeC/50%RH x 30 min
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature: 23degreeC/50%RH



●180 degree peeling strength for each temperature (Applied at 23 deg C)

| Temperature | No.501K |
|---|---|
| -20 degree C | 20.5 |
| 0 degree C | 14.9 |
| 10 degree C | 12.3 |
| 23 degree C | 10.7 |
| 40 degree C | 10.0 |
| 60 degree C | 9.5 |
| 80 degree C | 9.0 |

(Unit: N/20mm)
Substrate: Stainless plate
Test piece: 20mm width
Lining material: PET#25
Application method:
1 pass back and forth with 2-kg roller
Application temperature: 23 degree C/50%RH
Applying conditions:
Measurement temperature x 30min
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature:
-20, 0, 10, 23, 40, 60 and 80 degree C

●180 degree peeling strength after application -Aging after application-

| Aging After Application | No.501K |
|---|---|
| 1 min later | 11.5 |
| 30 min later | 12.0 |
| 24 hrs later | 15.8 |
| 48 hrs later | 13.9 |
| 72 hrs later | 15.7 |
| 168 hrs later | 16.1 |

(Unit: N/20mm)
Substrate: Stainless steel plate
Sample width: 20mm
Backing material: PET#25
Applying condition:
1 pass back and forth with a 2 kg roller
Bonding temperature: 23degree C/50%RH
Curing condition:
23degree C/50%RH x 1min, 30min, 24hrs, 48hrs, 72hrs and 168hrs
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature: 23 degree C/50%RH

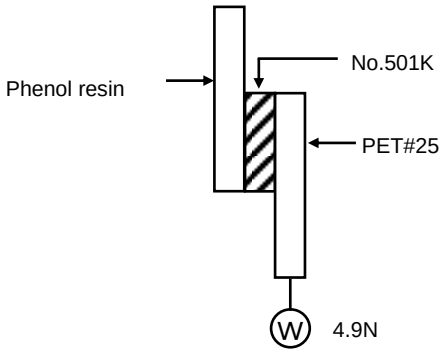
●180 degree peeling adhesion for each pressure

| Pressure | No.501K |
|---|---|
| 0.1kg roller | 9.3 |
| 0.5kg roller | 9.6 |
| 2 kg roller | 10.7 |
| 5 kg roller | 13.6 |

(Unit: N/20mm)
Substrate: Stainless steel plate
Backing material: PET#25
Applying condition:
1 pass back and forth with a 0.1 kg, 0.5 kg, 2 kg and 5 kg roller.
Bonding temperature: 23 degree C/50%RH
Curing condition: 23 degree C/50%RH x 30 min
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature: 23 degree C/50%RH

●Holding power

| Item | 40 degree C | 80 degree C |
|---|---|---|
| No.501K | 0.4 | 1.4 |

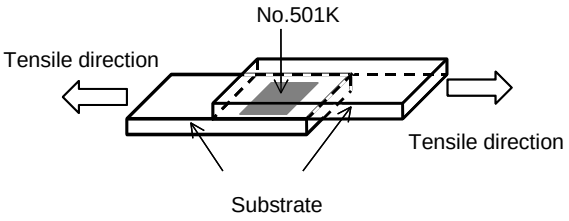



(Unit: mm/hr)
Substrate: Phenol resin plate
Application time: 23 degree C/50%RH
Applying conditions:
Measurement Temperature x 30min
Measurement temperature: 40,80 degree C
Laminated area: 20mmx10mm
Load: 4.9N(500g)
Loading time: 1 hour

●Shearing adhesive strength for each temperature (Applied at 23 deg C)

| Temperature | No.501K |
|---|---|
| -10 degree C | 390 |
| 0 degree C | 320 |
| 10 degree C | 290 |
| 23 degree C | 250 |
| 40 degree C | 180 |
| 60 degree C | 100 |
| 80 degree C | 95 |

(Unit: N/20mmx20mm)
Tape area: 20mm x 20mm
Substrate: Stainless steel plate
Measurement temperature: 23 degree C/50%RH
Applying condition: 23 degree C/50%RH × 30min
Measurement temperature:
-10,0,10,23,40,60 and 80 degree C
Peeling speed: 200mm/min




●Initial adhesive

| Temperature | No.501K |
|---|---|
| -5 degree C | 1.8 |
| 0 degree C | 2.9 |
| 5 degree C | 3.5 |
| 10 degree C | 5.1 |
| 20 degree C | 6.8 |

(Unit:N/Phi5mm)
Test method: Probe tack test (ASTM-D2979)
Substrate: Stainless steel plate
Pressure condition: 0.1sec , 0.25N(25g)
Measurement temperature:
-5, 0, 5, 10 and 20 degree C
Peeling speed: 100mm/min

●180 degree peeling adhesion -Aging(durability) at each condition after applying

| Condition | | No.501K |
|---|---|---|
| Initial (23 degree C/50%RH x30min) | | 10.7 |
| -20 degree C x 30 days | | 13.8 |
| 80 degree C | 1 day | 21.0 |
| | 7 days | 21.3 |
| | 14 days | 23.7 |
| | 30 days | 24.3 |
| 40 degree C 92%RH | 14 days | 19.1 |
| | 30 days | 19.8 |
| 60 degree C/90%RH x 30days | | 21.4 |

(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 degree
Measurement temperature: 23 degree C/50%RH

* Cohesion failures occur at aging condition 80 degree C, 40 degree C/92%RH and 60 degree C/90%RH.

●Shearing adhesive strength -Aging(durability) at each condition after applying

| Condition | | No.501K |
|---|---|---|
| Initial (23 degree C/50%RH x30min) | | 250 |
| 40 degree C 92%RH | 1 day | 130 |
| | 7 days | 135 |
| | 20 days | 135 |
| 80 degree C | 1 day | 260 |
| | 7 days | 300 |
| | 20 days | 310 |

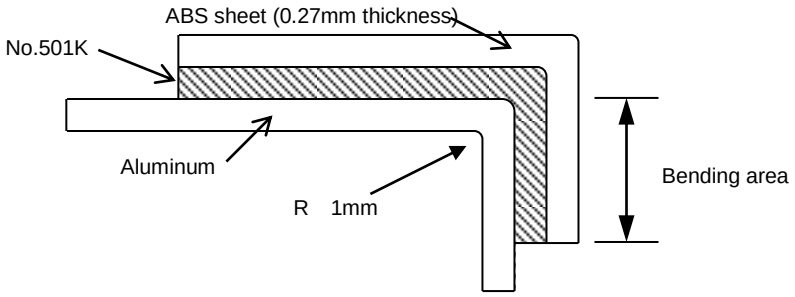
(Unit: N/20mmx20mm)
Substrate: Aluminum plate
Tape area: 20mm × 20mm
Measurement temperature: 23degree C/50%RH
Applying condition: 23 degree C/50%RH × 30min
Measurement temperature:
40 degree C/92%RH,80 degree C
Peeling speed: 10mm/min

●Resistance to repulsion

| Condition | Bending length (mm) | Result |
|---|---|---|
| 20 degree C x 24hur | 5 | △ |
| | 10 | ○ |
| | 15 | ○ |
| From –10 degree C to 60 degree C 10cycles | 5 | × |
| | 10 | △ |
| | 15 | ○ |

Test method: Resistance to repulsion of bend area
Substrate: 0.27mm ABS sheets + aluminum
Measurement condition:
20 degree C x 24hrs later,
-10 degree C to 60 degree C ->10 cycles later
Measurement method:
Bending length is changed at each length as below, and leave it at each temperature, then confirm the lifting of ABS sheet.

○ : No lifting
△ : Slightly lifting a ABS sheet
× : Lifting a ABS sheet



## 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

| ⚠ WARNING |
| --- |
| ●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.<br>●Use in combination with another method of joining if there is possibility of an accident. |

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