

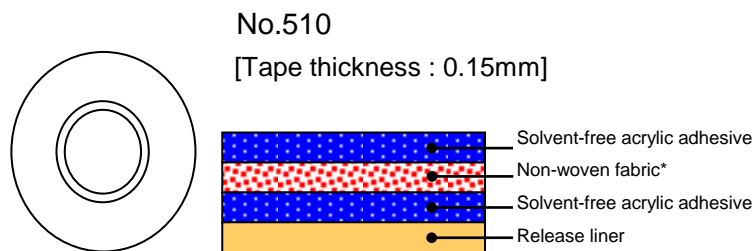
Double-coated adhesive tape

# No.510

## Outline

Nitto No.510 is a double-coated adhesive tape that uses solvent-free acrylic adhesive to reduce the amount of VOC emitted. The tape is designed to offer firm bonding and user friendliness. No.510 double-coated adhesive tape can be used on a wide variety of substrates including plastics as well as foam materials.

## Structure



[NITTO DENKO Low VOCs No.510] is printed on release liner  
\* "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

- Double-coated adhesive tape emits minimal volatile organic compounds (VOC).
- Adheres well to substrates such as metal and plastics.
- 10 restricted substances by RoHS are not contained.

## Applications

- Fixing of metal nameplates to home appliances
- Fixing of plastic labels
- Bonding of film and paper

## Sizes

Tape thickness (mm)	Width (mm)	Length(m)
0.15	3-1,200	20, 50

For more information, contact one of our sales representatives.

No. 510 10-P-0058\_E (1/7)

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## Properties

● VOC emission measurement values

Measurement material	Guideline Values [ $\mu\text{g}/\text{m}^3$ ]	No.510
Formaldehyde	100	ND
Toluene	260	ND
(o, m, p-) xylene	200	ND
P-dichlorobenzene	240	ND
Ethylbenzene	3800	ND
Styrene	220	ND
Chlorpyrifos	1	ND
Di-n-butyl phthalate	17	ND
Tetradecane	330	ND
Di-2-ethylhexyl phthalate	100	ND
Diazinon	0.29	ND
Acetaldehyde	48	ND
Fenobucarb	33	ND

<Analysis method>

JIS A-1901: 2015

Small sized chamber method

● 17th January 2019

Guidelines published by the Ministry of Health, Labor and Welfare (indoor air pollution)

ND=not detected

\* VOC emission of No. 510 does not exceed indoor concentration guideline value set by Ministry of Health, Labour and Welfare.

No. 510 10-P-0058\_E (2/7)

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**Properties**

- 180 degree C peeling adhesion for each substrate

Substrate	No.510
Stainless steel plate	12.0
Aluminum plate	11.8
Acrylic plate	12.9
ABS plate	10.0
PP plate	10.0
HIPS plate	12.0
PSt plate	12.8
PET film	11.0
POM plate	10.5
PC plate	14.2
Plywood plate	6.3
Glass plate	9.2

(Unit :N/20mm)

Tape area : 20mm width

Lining material: PET#25

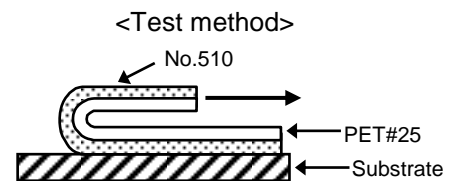
Pressing condition: 1 pass back and forth with a 2 kg roller at 23degree C/50%RH

Applying condition:23degree C/50%RH x 30min

Peeling speed:300 mm/min

Peeling angle: 180 degree

Measurement temperature: 23degree C/50%RH



- 180 degree peeling adhesion for each temperature

Temperature	No.510
0 degree C	12.8
10 degree C	12.5
23 degree C	12.0
40 degree C	10.0
60 degree C	9.7
80 degree C	9.0

(Unit :N/20mm)

Tape area : 20mm width

Lining material: PET#25

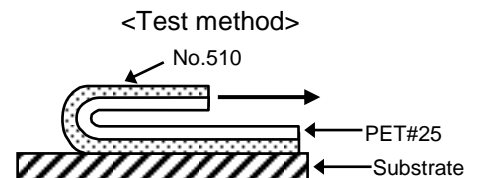
Pressing condition:1 pass back and forth with a 2 kg roller at 23degree C/50%RH

Applying condition:23degree C/50%RH x 30min

Peeling speed:300mm/min

Peeling angle: 180 degree

Measurement temperature:0,10,23,40,60,80 degree C



No. 510 10-P-0058\_E (3/7)

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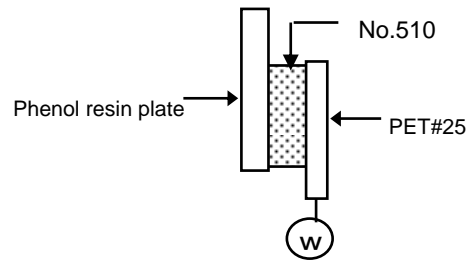
**Properties**

●Holding power

Measurement temperature	No.510
40 degree C	0.3
60 degree C	0.4
80 degree C	0.5

(Unit:mm/hr)

Substrate: Phenol resin plate  
Tape area: 10 mm x 20 mm  
Applying condition : measurement temperature x 30min  
Measurement temperature : 40,60,80 degree C  
Load : 4.9N(500g)  
Loading time : 1 hour

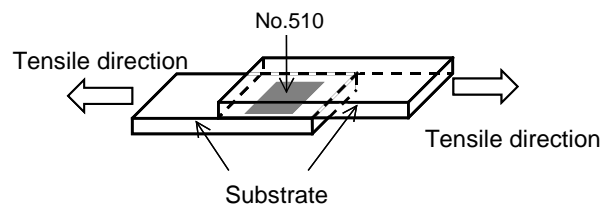


●Shear strength for each substrate

Temperature	No.510
Stainless steel plate	450
Aluminum plate	440
Acrylic plate	370
ABS plate	360
PP plate	270
PSt plate	360
PET film	370
PC plate	380
Glass plate	500

(Unit: N/20 mm)

Sample : 20 x 20mm  
Pressing condition : 1 pass back and forth with a 5 kg at 23degreeC/50%RH  
Applying condition:23 degree C/50%RH x 30min  
Peeling speed:50mm/min  
Measurement condition: 23 degree C/50%RH



No. 510 10-P-0058\_E (4/7)

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**Properties**

● Shear strength for each temperature

Temperature	No.510
0 degree C	500
23 degree C	450
40 degree C	410

(Unit : N/20mmx20mm)

Substrate : Stainless steel plate /  
Stainless steel plate

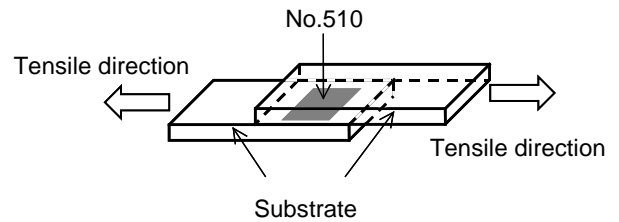
Tape area: 20 x 20mm

Pressing condition: 1 pass back and forth with 5kg roller at 23 degree C/50%RH

Applying condition: each measurement temperature x 30min

Measurement method: 0,23,40 degree C

Peeling speed: 50mm/min



● 180 degree peeling adhesion for each pressure

Pressure bonding	No.510
0.1 kg roller	8.7
0.5 kg roller	10.4
2 kg roller	12.0
5 kg roller	12.3

(Unit : N/20mm)

Substrate : Stainless steel plate

Lining material : PET#25

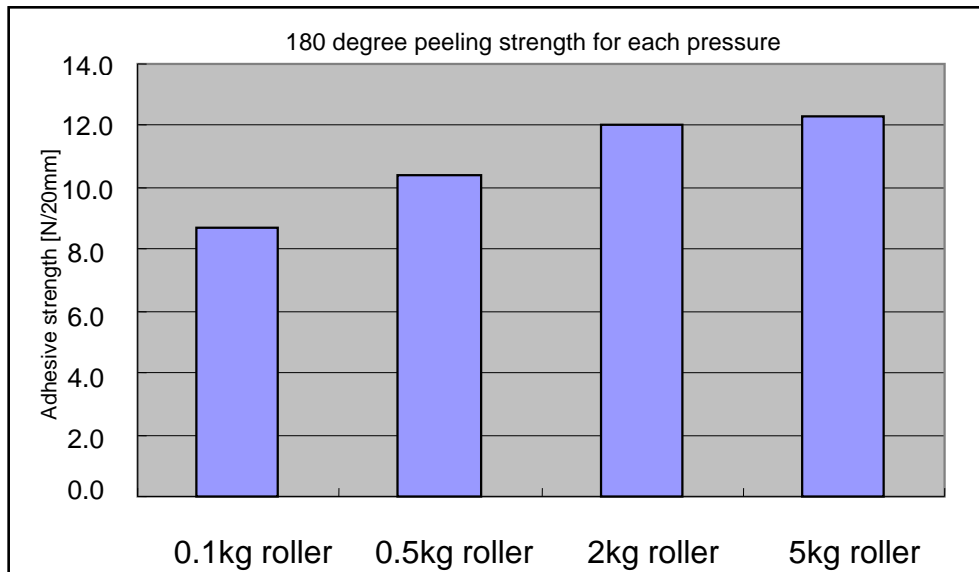
Pressing condition: 1 pass back and forth with 0.1kg, 0.5kg, 2kg, 5kg roller at 23 degree C/50%RH

Applying condition: 23 degree C/50%RH x 30min

Peeling speed :300mm/min

Peeling angle: 180 degree

Measurement temperature: 23 degree C/50%RH



No. 510 10-P-0058\_E (5/7)

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**Properties**

● 180 degree peeling adhesion after lamination - (1) 23 degree C setting-

Temperature	Time	No.510
23 degree C	30min	12.0
	4hrs	12.3
	12hrs	12.5
	24hrs	13.6
	72hrs	13.8

(Unit :N/20mm)

Test sample :20mm width

Substrate : Stainless steel plate

Lining : PET#25

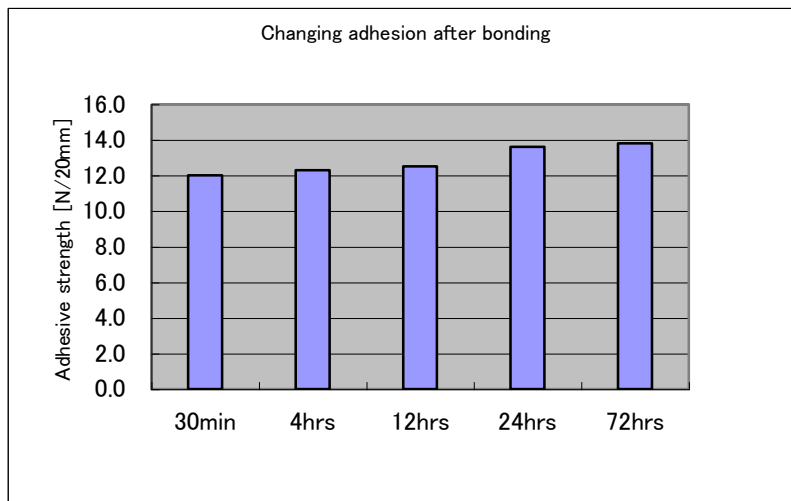
Pressing condition: 1 pass back and forth with  
2kg roller at 23 degree C/50%RH

Applying condition: 23 degree C/50%RH

Peeling speed : 300 mm/min

Peeling angle: 180 degree

Measurement temperature: 23 degree C/50%RH



● 180 degree peeling adhesion - (2) Long term storage stability-

Condition	No.510	
Initial (23 degree C/50%RH x 30min)	12.0	
-30 degree C x 30 days	15.0	
80 degree C	1 day	16.0
	7 days	18.0
	14 days	19.3
	30 days	19.8
40 degree C /92%RH	14 days	12.2
	30 days	12.3
Heat shock [100cycles]* <sup>1</sup>	19.8	
Heat cycle[40cycles]* <sup>2</sup>	12.1	

(Unit : N/20mm)

Substrate : Stainless steel plate

Lining : PET#25

Pressing condition:1 pass back and forth with 2kg  
Roller at 23 degree C/50%RH

Applying condition : Refer to the left fig.

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C /50%RH

\*1: Heat shock condition

[-40 degree C x 30min <-> 90 degree C x 30min] x  
100 cycles

\*2: Heat cycle condition

[-20 degree C x 6hr-> (1hr) -> 60 degree C/95%RH  
x 6hr -> (1hr) ->] x 40 cycles

No. 510 10-P-0058\_E (6/7)

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## Precautions when using

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- Remove all oil, moisture and dirt from the surface of the substrate before applying.
- The tape employs pressure-sensitive adhesive. Be sure to apply pressure with a roller or press when applying. Failure to do so could affect properties or appearance.
- The tape may not adhere well to significantly uneven or distorted surfaces. Level off the surface as much as possible before applying.
- Avoid setting or using such that significant stress is placed on the tape for several hours after application.

## Precautions when storing

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- Be sure to keep the tape in its box when not using.
- Keep in a cool dark place not exposed to direct sunlight.

## Safety precautions

WARNING
<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 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 June 2020

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