

Double-coated adhesive tape with Halal Certification

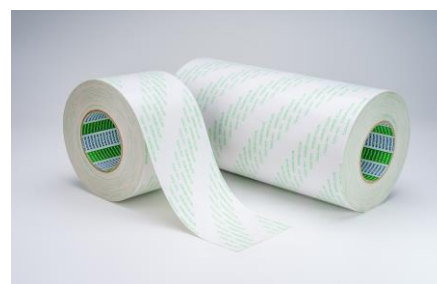
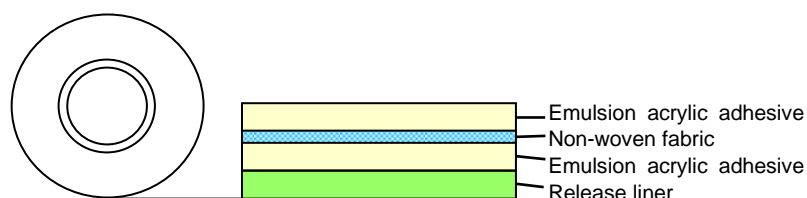
HL-514



General Description

Nitto HL-514 is a Halal-certified double-coated adhesive tape that uses emulsion acrylic adhesive to reduce the amount of VOC emitted and fit for Muslim consumption anywhere in the world. The tape is designed to offer firm bonding and user friendliness. HL-514 double-coated adhesive tape is suitable for plastic materials and rough surface materials such as foams and non-woven fabrics.

Structure



Features

- Has no organic solvent such as Toluene, Xylene and Ethyl Acetate etc
- Has minimal volatile organic compounds (VOC)
- No VOC emission of 14 specified materials based on Japan Ministry of Health, Labour and Welfare
- Excellent adhesion on plastic, non-woven fabric and foam materials
- Uses non-woven fabric base, so it follows the contour of the substrate
- Ten restricted substances by RoHS are not contained
- Halal certified by the American Halal Foundation (AHF)

Applications

- Fixing of automotive interior acoustic absorbent materials
- Fixing for cushioning materials for home electrical appliances, OA equipment
- Fixing for plastic display plates
- For bonding films or paper

Size

Tape thickness (mm)	Width (mm)	Length (m)
0.14	1050	50

For more details, please kindly contact our sales team.

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Technical Properties

- Performance Properties

180° adhesive peeling strength on substrate

Substrate	HL-514
Stainless steel plate	12.0
Aluminum plate	9.5
ABS plate	12.5
Polypropyrene plate	10.0
Acrylic plate	13.0
PCABS plate	12.5
Polystyrene plate	13.0
Polycarbonate plate	13.5
HIPS plate	14.0
Glass plate	9.0
PET plate	14.9
POM plate	11.5
Ether urethane foam	2.8
Ester urethane foam	11.0
Non-flaming nonwoven fabric	4.0
Wool felt	4.0

(Unit: N/20 mm)

Tape area: 20mm width

Lining material: PET#25

Application method:

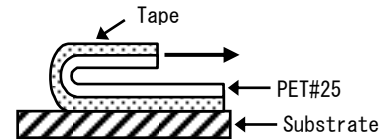
1 pass back and forth with 2kg roller

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

Peeling speed: 300 mm/min

Peeling angle: 180 degree

Measurement temperature: 23 degree C, 50%RH



180 degree peeling strength at different temperature

Temperature	HL-514
-20 degree C	24.0
-10 degree C	16.0
0 degree C	13.0
10 degree C	12.5
23 degree C	12.0
40 degree C	11.0
60 degree C	9.0
80 degree C	8.0
100 degree C	7.5

(Unit: N/20 mm)

Application area: 20mm width

Substrate: Stainless steel plate

Lining material: PET #25

Application method:

1 pass back and forth with 2-kg roller

Applying condition: Each temperature x 30min

Peeling speed: 300 mm/min

Peeling angle: 180 degree

Measurement temperature :

-20,-10,0, 10, 23, 40, 60, 80,100 degree C

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180 degree peeling strength after application - Aging after application

Aging after application	HL-514
1 min later	11.0
30 min later	12.0
24 hrs later	12.5
48 hrs later	13.0
72 hrs later	13.5
168 hrs later	14.0

(Unit: N/20mm)

Substrate: Stainless steel plate
 Tape area: 20mm width
 Lining material: PET #25
 Pressing condition: 1 pass back and forth with 2-kg roller at 23 degree C, 50%RH
 Applying Condition: 23 degree C/50%RH x 1min,30min,24hrs, 48hrs, 72hrs, 168hrs
 Peeling speed :300mm/min
 Peeling angle : 180 degree
 Measurement temperature:23 degree C/50%RH

180 degree peeling adhesion with different pressure

Pressure bonding	HL-514
0.1 kg roller	10.0
0.5 kg roller	11.5
2 kg roller	12.0
5 kg roller	12.5

(Unit : N/20 mm)

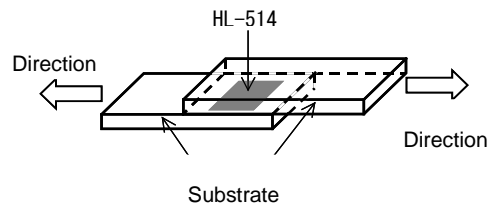
Substrate : stainless steel plate
 Lining material:PET#25
 Pressing condition: 1 pass back and forth with 0.1kg, 0.5kg, 2kg, 5kg at 23 degree C, 50%RH
 Applying condition: 23 degree C/50%RH x 30min
 Peeling speed: 300 mm/min
 Peeling angle: 180 degree
 Measurement temperature: 23 degree C/50%RH

Shearing adhesive strength for each substrate

Substrate	HL-514
Stainless plate / Stainless plate	410
Aluminum plate / Aluminum plate	420
ABS plate/ABS plate	280
PP Plate/PP Plate	270

(Unit: N/20mmx20mm)

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



Shearing adhesive strength for each temperature

Temperature	HL-514
0 degree C	820
23 degree C	410
40 degree C	280
60 degree C	140

(Unit: N/20mmx20mm)

Substrate: Stainless plate/ stainless plate
 Tape area :20 x 20mm
 Pressing condition: 1 pass back and forth with 5-kg at 23 degree C/50%RH
 Applying condition: Each temperature for x 30min
 Measurement temperature: 0, 23, 40, 60 degree C
 Peeling speed : 50mm/min

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Holding power

Temperature	HL-514
23 degree C	0.3
40 degree C	0.7
60 degree C	0.8

(Unit: mm/hr)

Substrate: Phenol resin plate

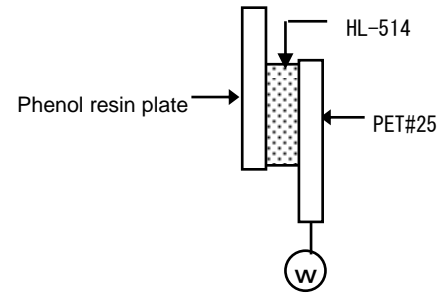
Tape area: 10mm x 20 mm

Applying condition: Measurement temperature x 30min

Measurement temperature: 23, 40, 60 degree C

Load : 4.9N(500g)

Load time : 1 h



Resistant to repulsion of rough surface material

Material	Folding length	HL-514
Ether urethane foam	10mm	1.5
	20mm	0
Ester urethane foam	10mm	1.0
	20mm	0
Non-flaming nonwoven fabric 0.45mmt	3mm	0
	5mm	0
Non-flaming nonwoven fabric 0.9mmt	5mm	1.5
	10mm	0

(Unit: mm)

Materials : Urethane foam,
nonwoven fabric

Set temperature: 23, 70 degree C

Foam thickness: 10mm

Tape width: 10mm

Folding length: 3-20mm

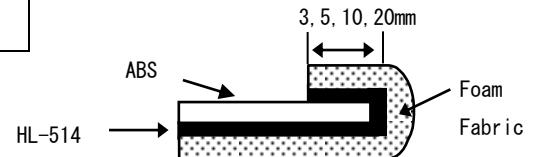
Pressing condition: 1 pass back and forth
with 2-kg roller

Substrate: ABS plate(2mm thickness)

Measurement:

23 degree C->after setting 24 hours

70 degree C->floating and peeling after 2
hours measured



Resistance to repulsion for plastic plate

Substrate	HL-514
ABS plate	0
Polystyrene plate	0
Polypropyrene plate	0

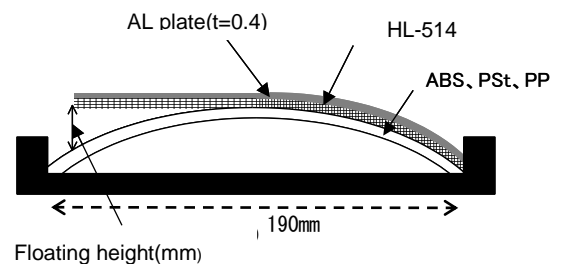
(Unit: mm/72Hr)

AL plate: 20mm x 180mm

Substrate size: 30mm x 200mm

Repulsion condition:

Laminate a substrate and AL plate with tape by laminating
machine. Fit the left sample into wooden mold then leave it at
70 degree C x 72Hrs and measure the floating height.



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

Condition		HL-514
Initial (23 degree C/50%RH x30min)		12.0
-30 degree C x 30 days		12.0
8 0 °C	1 day	17.0
	7 days	17.5
	14 days	19.5
	30 days	24.0
40degree C 92%RH	14 days	16.0
	30 days	18.0
60degree C 90%RH	14 days	12.5
	30 days	13.0
Heat shock [100 cycle]*		19.0
Heat cycle [40 cycle]**		14.5

(Unit :N/20mm)

Substrate: Stainless plate

Lining material: PET#25

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

Applying condition: Refer to the attached table

Peeling speed : 300 mm/min

Peeling angle: 180 degree

Measurement temperature: 23degree C/50%RH

* Heat shock condition

[-40 degree C x 30min <-> 90 degree C x30min] 100cycles

**Heat cycle condition

[-20°Cx6hr⇒(1hr)⇒60°C/95%RHx6hr⇒(1hr)⇒] x40cycle

• VOC Emission Measurement Values

Measured Materials	Guideline value	Emission rate
	[µg/m ³]	[µg/m ² . h]
Formaldehyde	100	N.D
Acetaldehyde	48	N.D
Toluene	260	N.D
(o, m, p-) xylene	200	N.D
Styrene	220	N.D
Ethylbenzene	3800	N.D
p-dichlorobenzene	240	N.D
Tetradecane	330	N.D
Nonanal	41	N.D
Dibutyl phthalate	17	N.D
Di(2-ethylhexyl)phthalate	120	N.D
Chlorpyrifos	1	N.D
Diazinon	0.29	N.D
Fenobucarb	33	N.D
T-VOC (Toluene conversion value)	33	N.D

<Sample preparation & Analysis method>

Method conformable to JIS A 1901&1904:2015

"N.D." Non-detected means the test result is lower than detection limit value.

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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.
- Use in combination with another method of joining if there is possibility of an accident.

Established in September 2021

Revision 02, 4th October 2024

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