

Double coated tape with Halal Certification

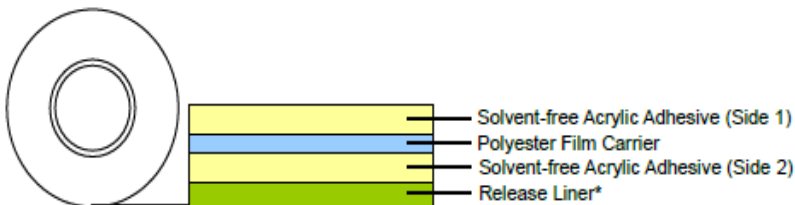
# HL-533



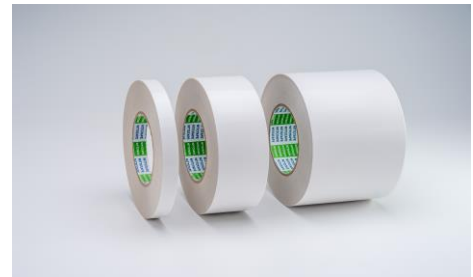
## General Description

Nitto HL-533 is a Halal-certified double-coated adhesive tape that uses solvent-free 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-533 double-coated adhesive tape is suitable for plastic materials and rough surface materials such as foams.

## Product Structure



\*[ White paper release liner without printing]



## Features

- HL-533 is a product with low volatile organic compounds (VOC)
- Leaves minimal adhesive residue when peel-off
- Offers wide range of temperature and bonding performance
- Does not contain ten restricted substances by RoHS
- Sustains thermal cycle test on Polycarbonate/ Stainless Steel (-40 deg C till 90 deg C, 72 cycles)
- Halal certified by the American Halal Foundation (AHF)

## Applications

- Fixing for bonding of automotive and electronic appliances
- Fixing of plastic display plate
- Fixing of bonding films or paper

## Size

Tape Thickness (mm)	Width (mm)	Length (mm)
0.125	15 - 1050	50

For more details, kindly contact our Sales team.

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## Technical Properties

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- VOC emission measurement values

Measurement Materials	Guideline value [ $\mu\text{g}/\text{m}^3$ ]	Emission rate [ $\mu\text{g}/\text{m}^2.\text{h}$ ]
Formaldehyde	100	ND
Toluene	260	ND
Xylene	200	ND
Paradichlorobenzene	240	ND
Ethylbenzene	3800	ND
Styrene	220	ND
Chlorpyrifos	1	ND
Dibutyl phthalate	17	ND
Tetradecane	330	ND
Di(2-ethyhexyl) phthalate	100	ND
Diazinon	0.29	ND
Nonanal	41	ND
Acetaldehyde	48	ND
Fenobucarb	33	ND

<Sample preparation & Analysis method>  
Method conformable to JIS A 1901 & 1904:2015

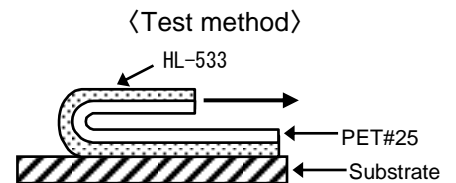
\*ND = Non-detected, means the test result is lower than guideline/ detection limit value.

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● 180 degree peeling adhesion for each substrate

Substrate	HL-533
Stainless steel	12.50
Aluminum	10.20
ABS	8.90
Polypropylene	12.60
Acrylic	16.00
PCABS	15.00
Polycarbonate	13.00
HIPS	17.00
PE	5.50
Glass	7.00
Ether urethane foam	2.60

(Unit: N/20 mm)  
 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 30min  
 Peeling speed: 300 mm/min  
 Peeling angle: 180 degree  
 Measurement temperature: 23 degree C, 50%RH



● 180 degree peeling strength for each temperature

Temperature	HL-533
-30 degree C	5.80
-20 degree C	9.45
-10 degree C	5.90
0 degree C	10.80
10 degree C	11.65
23 degree C	12.50
40 degree C	12.60
60 degree C	14.00
80 degree C	16.90
100 degree C	12.40

(Unit: N/20 mm)  
 Tape area: 20mm width  
 Substrate: Stainless steel  
 Lining material: PET #25  
 Pressing condition: 1 pass back and forth with 2-kg roller at each temperature  
 Applying condition: Each temperature for 30min and peel under 23 degree C, 50%RH  
 Peeling speed: 300 mm/min  
 Peeling angle: 180 degree  
 Measurement temperature :  
 -30, -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-533
1 min later	11.00
30 min later	12.50
24 hrs later	13.00
48 hrs later	14.90

(Unit: N/20mm)  
 Substrate: Stainless steel  
 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,24hours, 48hours  
 Peeling speed :300mm/min  
 Peeling angle : 180 degree  
 Measurement temperature:23 degree C/50%RH

● 180 degree peeling adhesion for each pressure

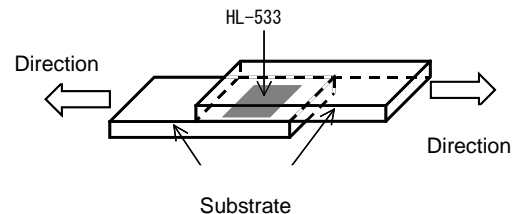
Pressure bonding	HL-533
0.3 kg roller	10.50
0.5 kg roller	11.90
2 kg roller	12.50
5 kg roller	13.00

(Unit : N/20 mm)  
 Substrate : stainless steel  
 Lining material:PET#25  
 Pressing condition: 1 pass back and forth with 0.3kg, 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-533
Stainless Steel / Stainless Steel	190
PP / PP	210

(Unit: N/20mmx20mm)  
 Tape area :20mm x 20mm  
 Pressing condition : 1 pass back and forth with 5-kg at each temperature  
 Applying condition :23 degree C/50%RH x 30min  
 Measurement temperature :23 degree C/50%RH  
 Peeling speed: 50mm/min



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● Holding power

Temperature	HL-533	
	1F	2F
23 degree C	0.7	0.7
40 degree C	0.9	0.9

(Unit: mm/hr)

Substrate: Phenol resin

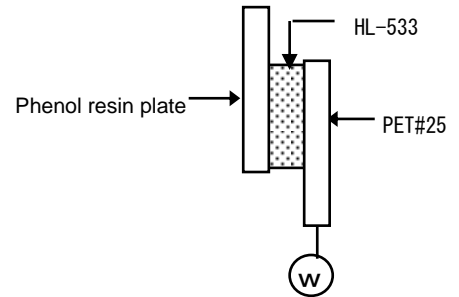
Tape area: 10mm x 20 mm

Applying condition: Measurement temperature x 30min

Measurement temperature: 23 degree C, 40 degree C

Load : 4.9N(500g)

Load time : 1 h



● Resistant to repulsion of rough surface material

Substrate	Material	Folding length	HL-533
ABS	Ether urethane foam	20mm	0.1
ABS	Ester urethane foam	20mm	0.1
Polypropylene	Ether urethane foam	20mm	0.2
Polypropylene	Ester urethane foam	20mm	0.2

(Unit: mm)

Materials : Urethane foam

Set temperature: 23 degree C, 70 degree C

Foam thickness: 10mm

Tape width: 10mm

Folding length: 20mm

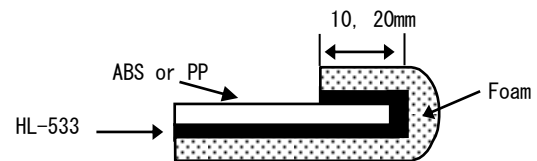
Pressing condition: 1 pass back and forth with 2-kg rollers

Substrate: ABS & Polypropylene (2mm thickness)

Measurement:

23 degree C->after setting 24 hours

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



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

Substrate	Condition		HL-533
SUS	Initial (23 degree C/50%RH x30min)		12.50
	40 degree C	7 days	14.50
	80 degree C	7 days	24.80
	40 degree C X 92%RH	7 days	6.08
Polypropylene	40 degree C	7 days	10.80
	80 degree C	7 days	15.00
	40 degree C X 92%RH	7 days	11.00

(Unit :N/20mm)

Substrate: Stainless Steel (SUS), Polypropylene  
 Lining material: PET#25  
 Pressing condition: 1 pass back and forth with 2kg  
 at 23 degree C/50%RH  
 Applying condition: Refer to the left table  
 Peeling speed : 300 mm/min  
 Peeling angle: 180 degree  
 Measurement temperature: 23degree C/50%RH

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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.
- 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

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- 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

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**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, 4<sup>th</sup> October 2024

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