Nitto

Product Data Sheet

Double coated tape

EW-514(M)

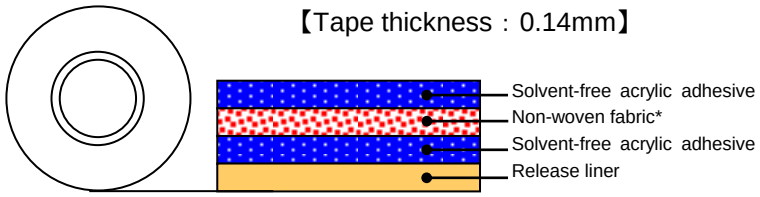
Outline

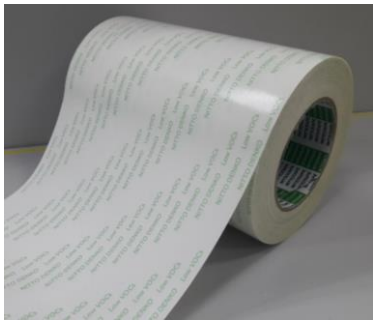
Nitto EW-514(M) is a double-coated adhesive tape that uses solvent-free acrylic adhesive to reduce the amount of VOC(*) emitted. (VOC: Volatile Organic Compounds) EW-514(M) doesn't have VOC emission of 14 specified 14 materials by Ministry of Health of Japan. EW-514(M) is suitable for plastic materials and rough surface materials(For example, Foam and non-woven fabric).

Structure

EW-514(M)

【Tape thickness：0.14mm】





"Paper and paperboard; articles of paper pulp, of paper or of paperboard"

[NITTO DENKO Low VOCs] is printed on release liner

Feature

- ●EW-514(M) has no organic solvent such as Toluene, Xylene and Ethyl acetate etc.
- ●EW-514(M) is lowered minimal volatile organic compounds (VOC)
- ●EW-514(M) VOC emission of 14 specified materials comply guideline of Japanese Ministry of Health.
- ●Follows the contour of the substrate by non-woven tissue carrier.
- ●Excellent adhesion for plastic, non-woven fabric and foam materials.
- ●Six restricted substances by RoHS are not contained.

Application

- ●Fixing for acoustic absorbent of automotive interior materials.
- ●Fixing for cushioning of home electric appliances / OA equipments.
- ●Fixing of plastic display plate.
- ●Fixing of bonding films or paper

Sizes

Tape thickness (mm)	Width(mm)	Length(m)
0.14	5 - 1,050	50

For more information, please contact us.

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Properties

●VOC emission measurement values - JIS A-1901: 2003 Small sized chamber method -

Measurement Materials	Gideline value [μg/m³]	EW-514(M)
Formaldehyde	100	ND
Toluene	260	ND
(o, m, p-) xylene	870	ND
P-dichlorobenzene	240	ND
Ethylbenzene	3800	ND
Styrene	220	ND
Chlorpyrifos	1	ND
Di-n-butyl phthalate	220	ND
Tetradecane	330	ND
Di-2-ethyhexyl phthalate	120	ND
Diazinon	0.29	ND
Nonanal	41	ND
Acetaldehyde	48	ND
Fenobucarb	33	ND

<Analysis method>
JIS A-1901: 2003
Small sized chamber method

●8th February 2002
-Detection specified by Ministry of Health, Labor and Welfare-
According to a report regarding summary from 8th to 9th *sick house syndrome * (indoor air pollution)

ND=not detected

* VOC emission of EW-514(M) does not exceed indoor concentration guideline value set by Ministry of Health, Labor and Welfare.

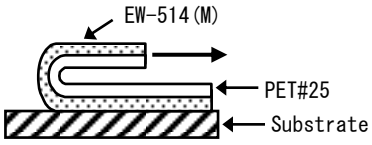
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●180 degree peeling adhesion for each substrate

Substrate	EW-514(M)
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
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

〈Test method〉



●180 degree peeling strength for each temperature

Temperature	EW-514(M)
-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)
Tape area: 20mm width
Substrate: Stainless steel plate
Lining material: PET #25
Pressing condition: 1 pass back and forth with 2-kg roller at 23 degree C, 50%RH
Applying condition: Each temperature for 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	EW-514(M)
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 conditon: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 for each pressure

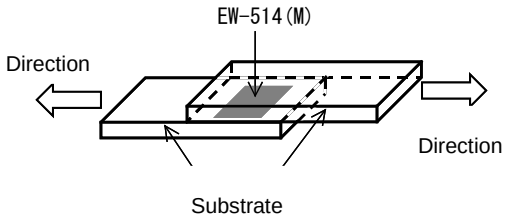
Pressure bonding	EW-514(M)
0.1 kg roller	10.0
0.5 kg roller	11.5
2 kg roller	12.0
5 kg roller	12.5

(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×30min
Peeling speed: 300 mm/min
Peeling angle: 180 degree
Measurement temperature: 23 degree C/50%RH

●Shearing adhesive strength for each substrate

Substrate	EW-514(M)
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×30min
Measurement temperature :23 degree C/50%RH
Peeling speed:50mm/min



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●Shearing adhesive strength for each temperature

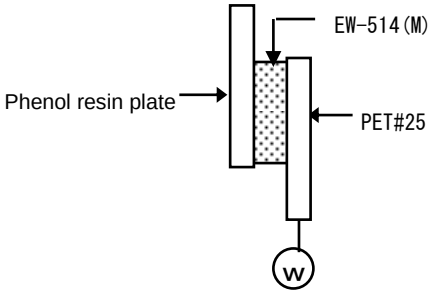
Temperature	EW-514(M)
0 degree C	820
23 degree C	410
40 degree C	280
60 degree C	140

(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

●Holding power

Temperature	EW-514(M)
23 degree C	0.3
40 degree C	0.7
60 degree C	0.8

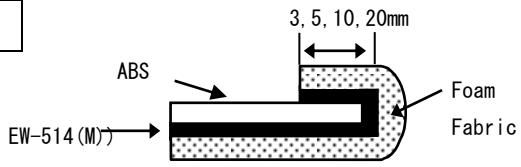
(Unit: mm/hr)
Substrate: Phenol resin plate
Tape area:10mm x 20 mm
Applying condition: Measurement temperature x 30min
Measurement temperature:23 ,40,60 degree C
Load : 4.9N(500g)
Load time : 1 h



●Resistant to repulsion of rough surface material

Material	Folding length	EW-514(M)
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

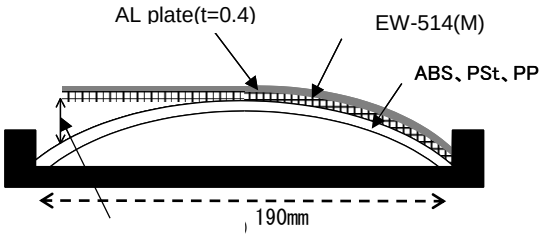


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●Resistance to repulsion for plastic plate

Substrate	EW-514(M)
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.



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

Condition		EW-514(M)
Initial (23 degree C/50%RH x30min)		12.0
-30 degree C x 30 days		12.0
80℃	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[100cycle]*		19.0
Heat cycle[40cycle]**		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 left fig.
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] x100cycles

**Heat cycle condition
[-20℃×6hr⇒(1hr)⇒60℃/95%RH×6hr⇒(1hr)⇒] ×40cycle

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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.

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