Nitto
Innovation for Customers

Product Data Sheet

Low-VOC Single coated tape

HF-105E

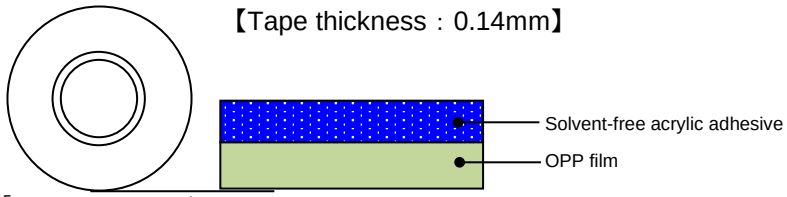
Outline

HF-105E is single coated adhesive tape that use solvent-free acrylic adhesive to reduce the amount of VOC(*)emitted and milder smell. It has excellent rough surface adhesiveness and low temperature adhesiveness and can be widely used for rough surface materials.
(Not only metal and plastic, but also urethane foam and non-woven fabric)
In addition, because it uses a flexible OPP film base material, it has good followability to irregularities and steps, and it also has hand-cutting properties, so it can be used with good workability.

*VOC：Volatile Organic Compound

Structure

HF-105E
【Tape thickness：0.14mm】



＊「NITTO Low VOCs」is printed on base film .
＊「OPP - film」is classified under a law called Customs Act of Fixed Rate Chapter 39「Plastics and articles thereof」

Feature

- Adhesive have no organic solvent such as Toluene, Xylene and Ethyl acetate etc.
- HF-105E is lowered minimal volatile organic compounds (VOC) and achieve milder smell.
- HF-105E is good performance for rough surface, low-Temp. & various substrate.
- Ten restricted substances by RoHS are not contained.

Application

- Fixing for harnesses for automobile roof materials. For fixing other parts such as Interior materials want to reduce VOC.
- For fixing to materials that are difficult to attach with masking tape or curing tape.
- As a positioning tape for concrete and carpet.
- There is a hand cuttability. As a construction tape that emphasizes workability

Sizes

Tape thickness (mm)	Width(mm)	Length(m)
0.14	20 -1000	50

For more information, please contact us.

Properties

●VOC emission measurement value

Measurement Material	HF-105E	Toluene use single tape
Toluene	21	510

(Unit : μg/g)

Sample size : 5cm^2

Heat condition : 80 degree C X 30min

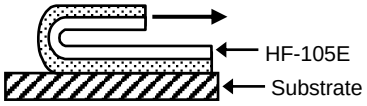
Detection device : GC-MS

●180 degree peeling adhesion for each substrate

Substrate	HF-105E
Stainless steel plate	16.5
Aluminum plate	14.5
ABS plate	16.0
Polypropylene plate	14.0
Acrylic plate	17.0
PCABS plate	16.5
Polystyrene plate	18.0
Polycarbonate plate	17.0
HIPS plate	18.0
PET plate	12.0
POM plate	11.0
Glass plate	10.0
Veneer plate	10.0
Ether urethane foam	2.5*
Ester urethane foam	10.0*
Chip urethane	3.5*
Roof material of automotive	23.0*
PVC film	20.0

(Unit: N/20 mm)
Tape width : 20mm width
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〉



*Destruction of substrate

●180 degree peeling strength for each temperature

Temperature	HF-105E
-20 degree C	23.5
-10 degree C	22.0
0 degree C	22.0
10 degree C	20.5
23 degree C	16.5
40 degree C	13.0
60 degree C	14.0
80 degree C	10.0
100 degree C	9.5

(Unit: N/20 mm)
Tape width : 20mm width
Substrate : Stainless steel plate
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

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

Aging after application	HF-105E
1 min later	15.0
30 min later	16.5
24 hrs later	17.0
48 hrs later	17.5
72 hrs later	17.5
168 hrs later	18.5

(Unit: N/20mm)
Substrate : Stainless steel plate
Tape width : 20mm width
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 for each pressure

Pressure bonding	HF-105E
0.1 kg roller	14.0
0.5 kg roller	14.0
2 kg roller	16.5
5 kg roller	16.5

(Unit： N/20 ㎜)
Substrate : stainless steel plate
Tape width : 20mm width
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×30min
Peeling speed : 300mm/min
Peeling angle : 180 degree
Measurement temperature : 23 degree C/50%RH

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

Condition		HF-105E
Initial (23 degree C/50%RH x30min)		16.5
-30 degree C x 30 days		16.0
80 degree C	1 day	24.0
	7 days	29.0
	14 days	27.0
	30 days	28.0
40 degree C 92%RH	14 days	17.0
	30 days	15.0
60 degree C 90%RH**	14 days	20.0
	30 days	16.5
Heat shock [100 cycle]*1		29.0
Heat cycle [40 cycle]*2		19.0

(Unit: N/20mm)
Substrate : Stainless plate
Tape width : 20mm width
Pressing condition :
1 pass back and forth with 2-kg roller at 23 degree C / 50%RH
Applying condition: Refer to the left table.
Peeling speed : 300 mm / min
Peeling angle : 180 degree
Measurement temperature : 23 degree C / 50%RH

* 1 Heat shock condition
[-40 ℃ x 30min <-> 90 ℃ x30min] x100cycles

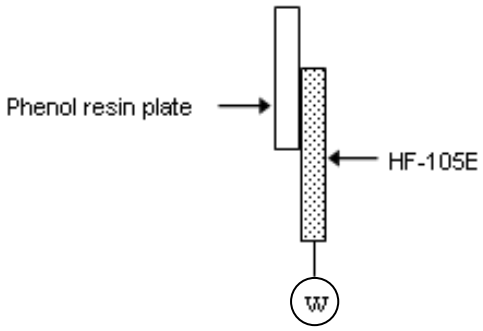
*2 Heat cycle condition
[-20℃×6hr⇒(1hr)⇒60℃/95%RH×6hr⇒(1hr) ⇒] ×40cycle

They are measured after 24 hours at 23 degree C / 50%RH.
** Sample are measured after 72 hours.

●Holding power

Temperature	HF-105E
23 degree C	0.6
40 degree C	0.8

(Unit: mm/hr)
Substrate : Phenol resin plate
Tape area : 10mm x 20mm
Pressing condition :
1 pass back and forth with 2kg roller at 23 degree C/50%RH
Applying condition : Measurement temperature x 30min
Measurement temperature : 23 ,40 degree C
Load : 4.9N (500g)



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.

Published in February 2021