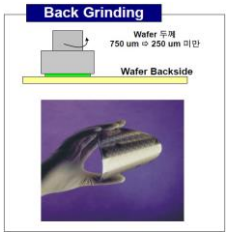
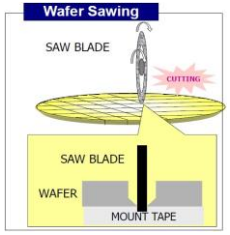
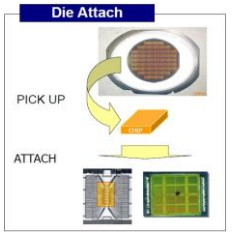
Dicing Tape Introduction

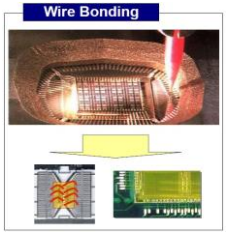
[Process Flow]

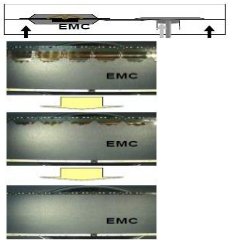
Back Grinding > Wafer Sawing > Die Attach > Wire Bonding > Molding



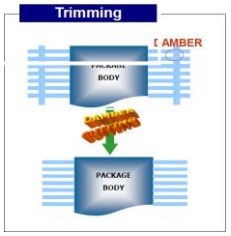


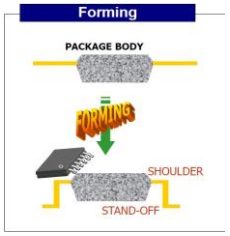


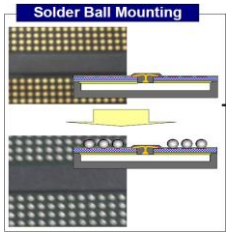


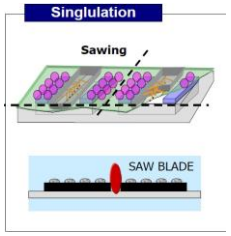


Trimming > Forming > Solder Ball Mounting > Singulation

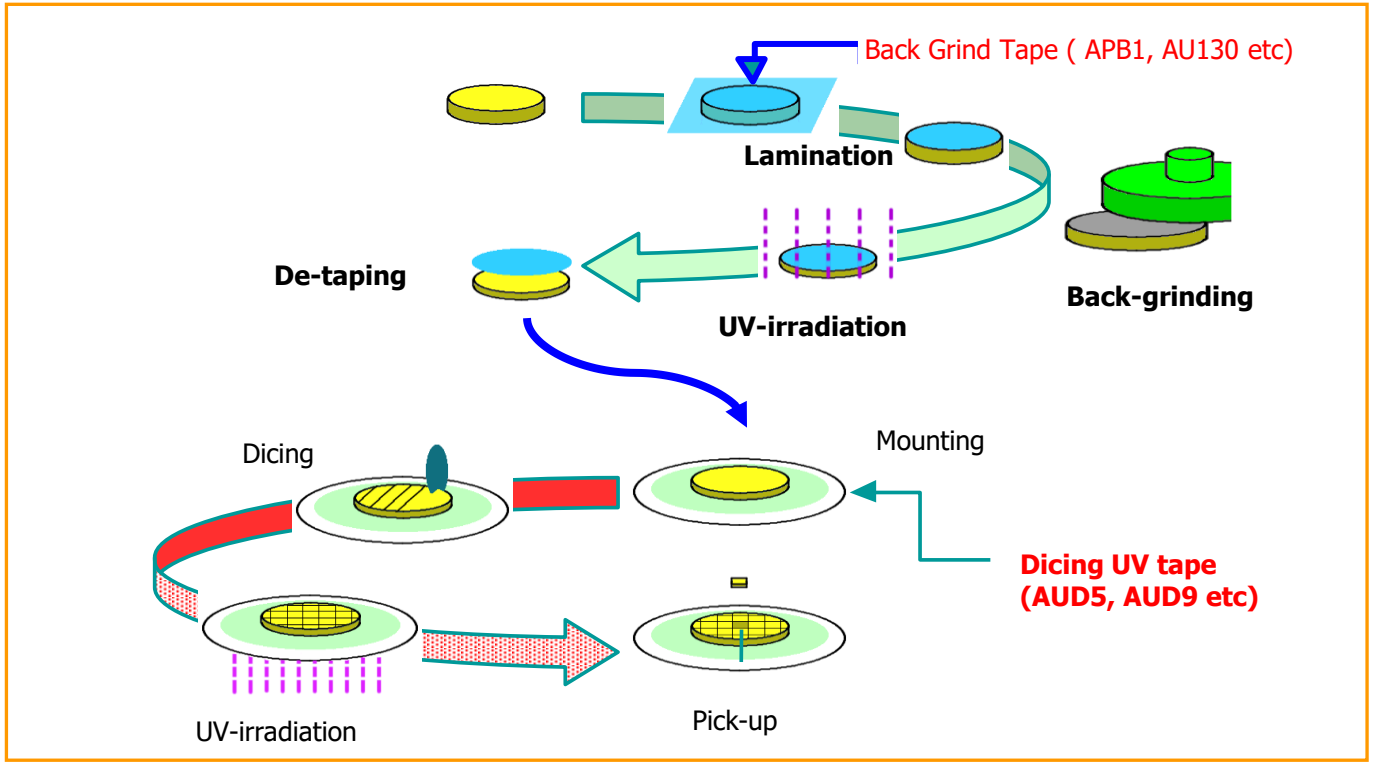




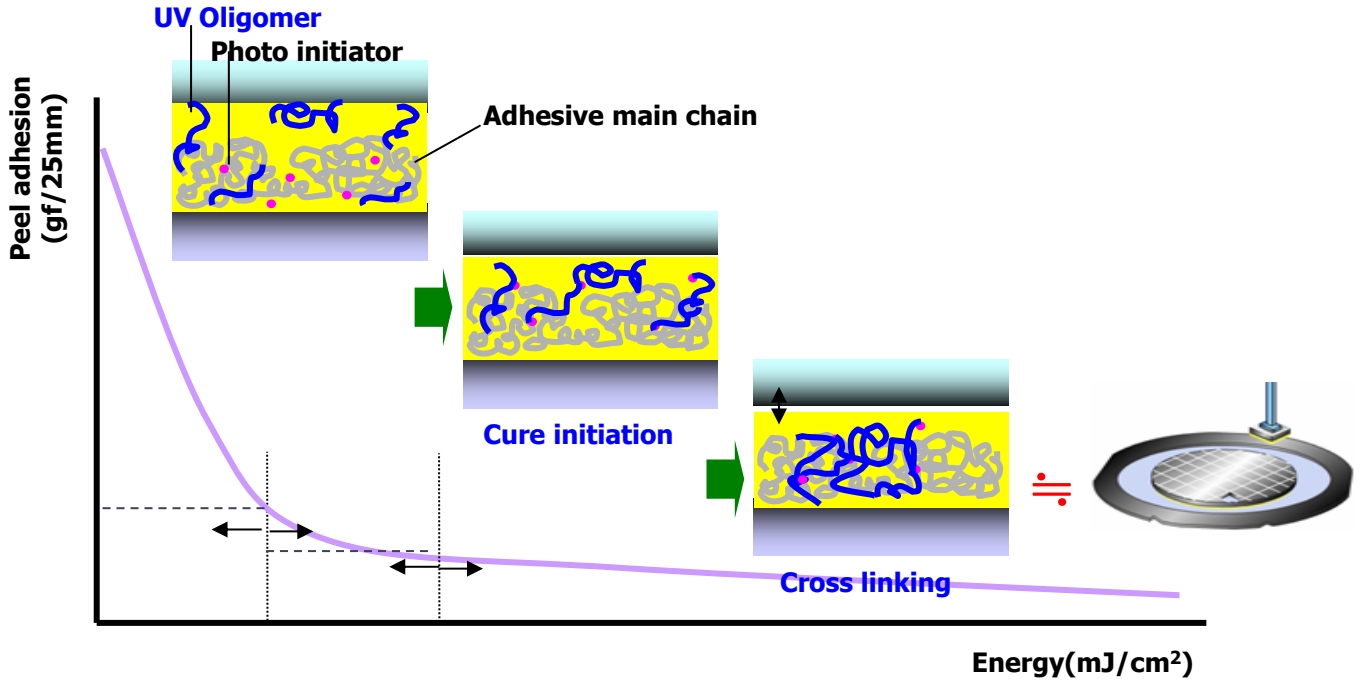




[Process Flow]

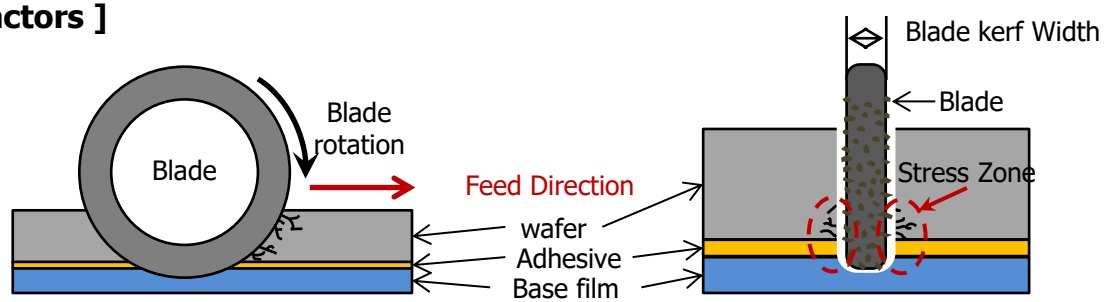


[UV cure mechanism : in film adhesive]



Light intensity x Irradiation time = Irradiation energy
(mW/cm^2) (sec) (mJ/cm^2)

[Summary of the backside chipping factors]



< Wafer cutting front view >

	Large chipping	Factors	Small chipping
Adhesive	Weak	Adhesive force	Strong
	Thick	Adhesive layer thickness	Thin
	Soft	Adhesive layer hardness	Hard
	Weak	Cohesive	Strong
	Bad	Wettability	Good
Base film	Soft	Base film hardness	Hard

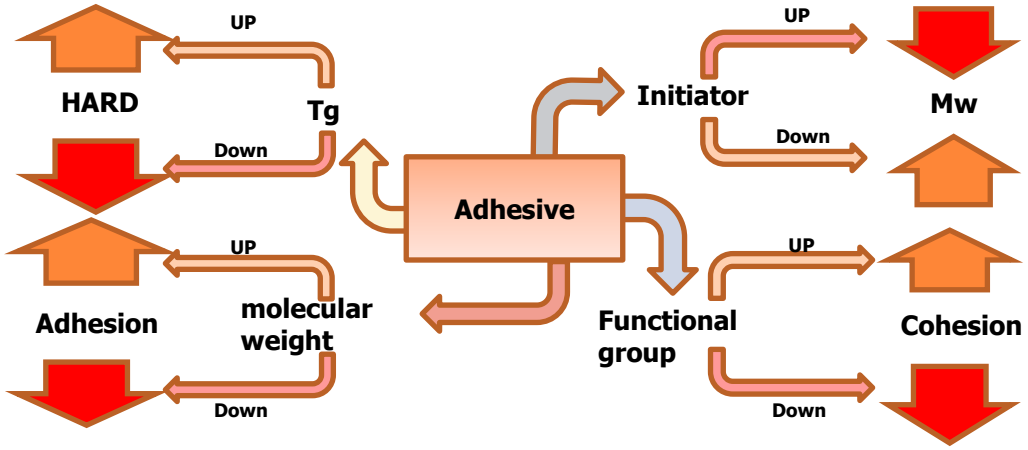
[Dicing Tape Selection]

Before choosing Dicing Tape, we need below information:

1) Application and device
2) Chip size & wafer thickness
3) Metallization layer yes/no
4) Surface roughness
5) Cutting depth into the tape & blade width
6) Expansion amount (Required expandability yes/no)
7) Process temperature and exposure time
8) The problem the customer wants to solve
9) Understand the process flow where the tape is used

[Production process]

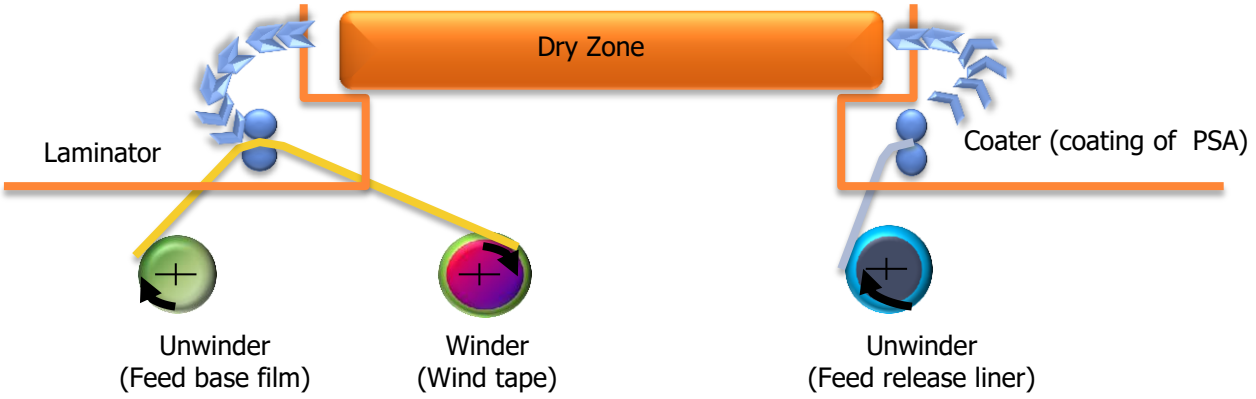
Adhesive Production process

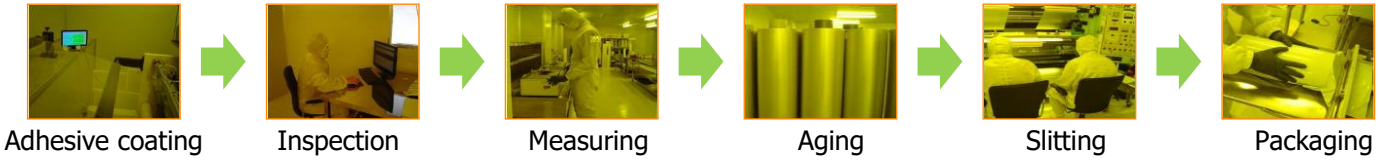


Reactor | Adhesive Raw material | Adhesive Blending

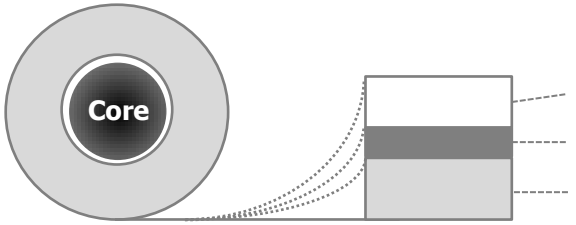
[Production process]

Tape Production process





[Structure & Physical Property]



Release film : Polyester film

Adhesive layer : Acrylic polymer

Base film : PVC / PO film / PET

Item	Base film	Color	Thickness	Adhesive Strength (gf/25mm)	Characteristics
AUD1	PVC	Milky White	90㎛	80 (10)	Normal wafer sawing
AUD5	PVC	Milky White	90㎛	80 (7)	CIS (CMOS image sensor)
AUD7	PVC	Light Blue	90㎛	120 (13)	Small size chip (under 1mm)
AUF3	PO	Milky White	90㎛	1000 (8)	PCB sawing
AU105-HA	PO	Milky White	105㎛	550 (12)	Wafer sawing, Glass protect
AU165-HC	PO	Milky White	165㎛	1700 (30)	Small PKG sawing
AU170-HC	PO	Milky White	170㎛	1800 (30)	Normal PKG sawing
AUP1	PO	Milky White	175㎛	2200 (40)	Power QFN Package
AUP4	PO	Milky White	170㎛	1900 (30)	No odor after UV
AUG2	PET	Transparent	150㎛	1800 (10)	Glass sawing

*. ( ) refers to adhesive strength after UV

[Dicing Tape Introduction]

AUD1 : Normal dicing PVC tape

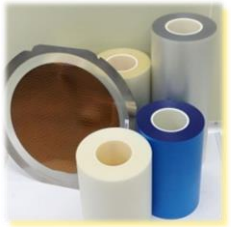
- AUD1 is a general purpose wafer dicing tape.
- Prevent seepage, chip flying, chipping and easy to pick up after UV irradiation.

AUD5 : CIS (CMOS Image sensor) dicing PVC tape

- This tape is widely used in South Korea because there are good yield for CIS chip.
- Prevent seepage, chip flying, chipping and easy to pick up after UV irradiation.

AUD7 : Small die chip dicing PVC tape

- PVC dicing tape with blue color for Small chip dicing.
- Good to mark by laser through the tape.



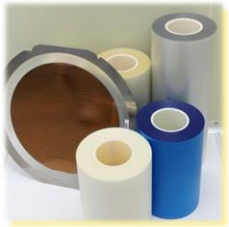
[Dicing Tape Introduction]

AUF3 : PCB & wafer dicing PO tape

- Tape with strong adhesion and suitable for PCB dicing.
- Good to Environment because of using PO film.

AU105-HC : Wafer dicing & glass filter protection PO tape

- PO tape for wafer dicing and suitable for a packing glass during long time.
- Especially after UV, no residue and smudges although long-term keeping.



[Dicing Tape Introduction]

AUP1 : Power QFN dicing tape

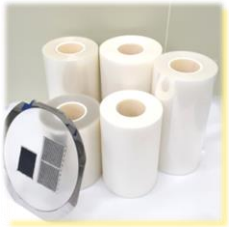
- AUP1 can be kept holding while sawing the thick package like a PQFN, Ceramic etc.
- After UV irradiation, Chip can be easily released from the tape without any residue.

AUP4 : Small die package dicing tape & low odor type

- This product is applicable to products with a packaging size of 3 * 3mm or less.
- Provides a comfortable working environment with less odor after UV irradiation

AU165-HC : Small die chip dicing tape & excellent marking readability

- The high permeability of the tape makes the barcodes more readable.
- It is possible to saw PACKAGE CHIP as small as 0.6 * 0.3mm without any problems.



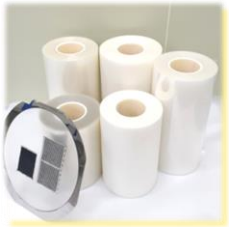
[Dicing Tape Introduction]

AU170-HC : Normal PKG dicing tape

- This is a general package dicing tape which has high adhesion.
- After UV irradiation, Chip can be easily released from the tape without any residue.

AUG2 : Glass & LED dicing PO tape

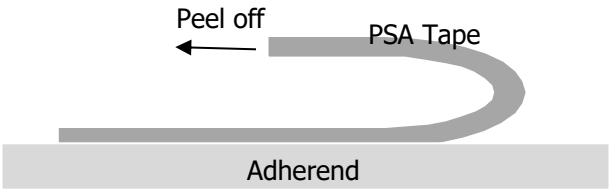
- This tape has a strong adhesion using PET FILM.
- It can be applied to materials that more require firmly keeping the chip during sawing, such as GLASS or LED material.



[Tape Test]

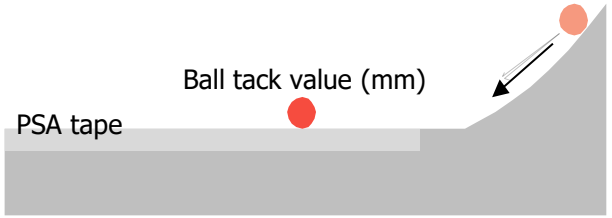
Adhesion (gf/25mm)

- Sample : 25mm × 350mm, 4ea
- Substrate : SUS Plate (#280 polished)
- laminating : 1cycle with 2kg Rubber Roller
- Remove speed : 300mm/min (180o)



Ball Tack (mm)

- Sample : 50mm × 400mm
- Height : 15mm, Length : 100mm
- SUS Ball Size: 4.76mm



[Tape Test : Measurement equipment]

Analysis & Measurement Equipments

- DSC : Polymer analysis (Tg & Tm)
- UTM : Tensile strength & Elongation
- Texture Analysis : Probe Tack
- Brookfield viscometer(RV, HT) : measuring viscosity
- Microscope : surface Inspection
- TMA : Measure of thermal expansive coefficient & Modulus

Thank You!