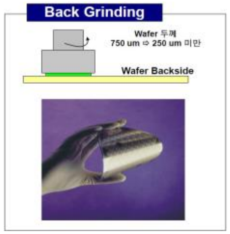
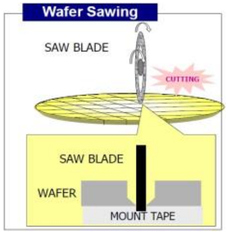
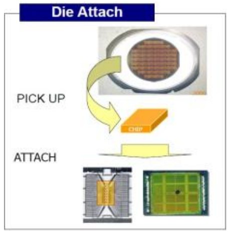
Back Grind Tape Introduction

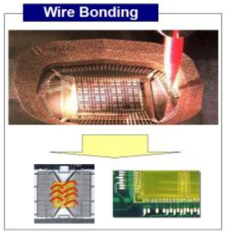
[Process Flow]

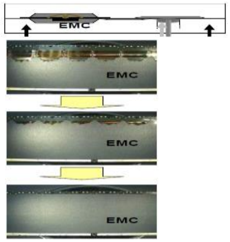
Back Grinding → Wafer Sawing → Die Attach → Wire Bonding → Molding



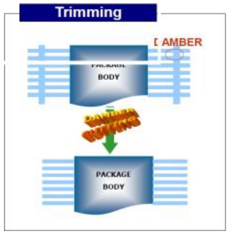


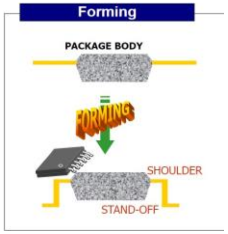


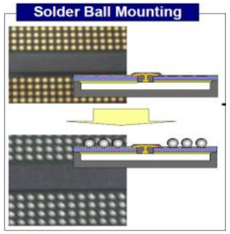


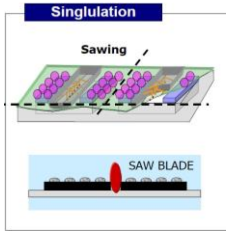


Trimming → Forming → Solder Ball Mounting → Singulation









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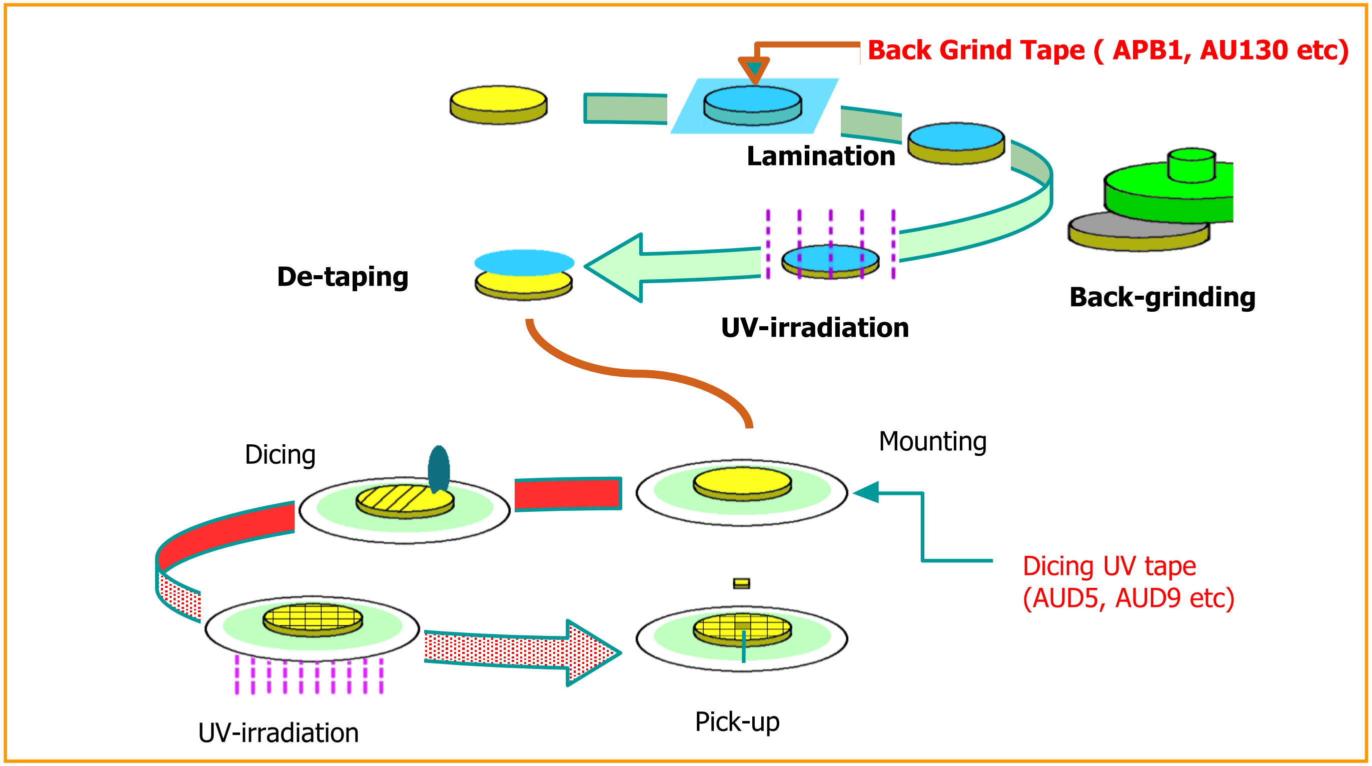
[Process Flow]



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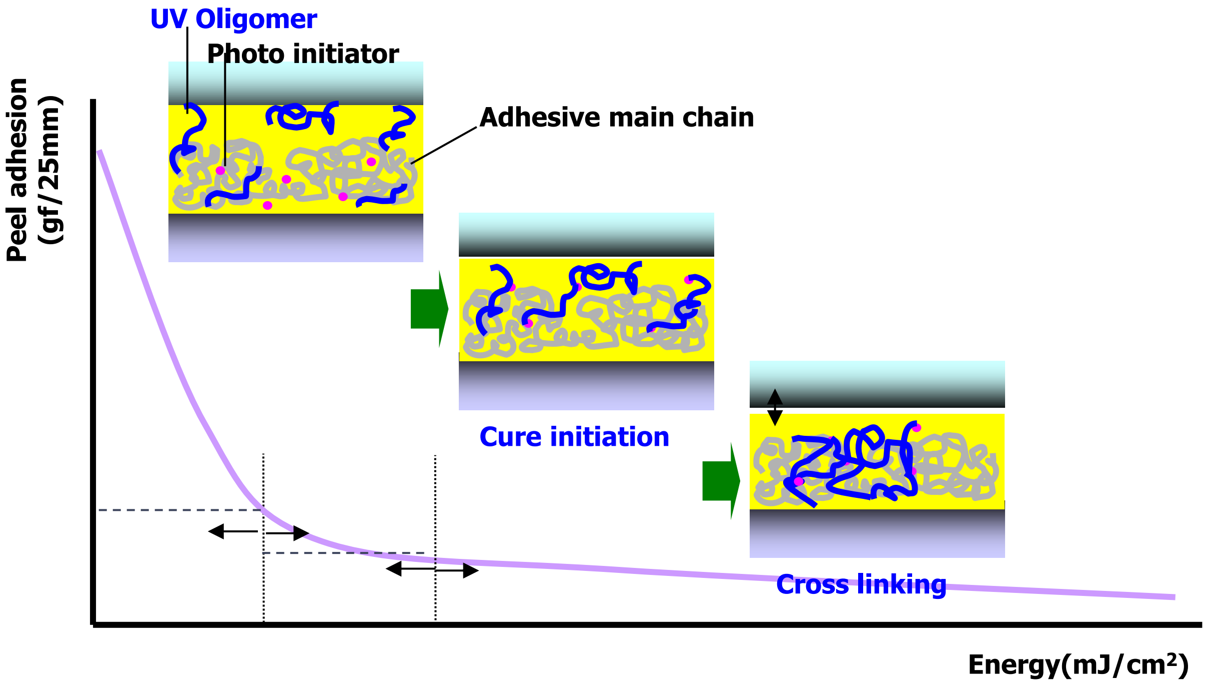
[UV cure mechanism in film adhesive]



Light intensity x Irradiation time = Irradiation energy
(mW/cm²) (sec) (mJ/cm²)

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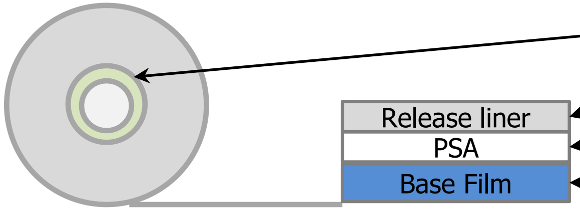
[Requirements for Back Grind Tape]



Core tube : plastic

Release liner : PET silicone coated

Pressure-sensitive adhesive : acrylic, UV cure type also available

Base Film (or Carrier) : EVA, PO, PET

Required Function

Structure	Function	Purpose
Base Film Carrier	Cushion	Protect from Grinding impact
	Accurate thickness	Even wafer thickness after grinding
	No defect (ex. fisheye)	Prevent the damage to wafer
Adhesive	Low contamination	Low transferring from adhesive
	Light peeling	Easy peeling from fragile wafer
	Accurate thickness	Even wafer thickness after grinding
Liner	Protect adhesive	To keep adhesive clean. Prevention from dust or contamination
	Flatness of adhesive	Flatness of adhesive surface

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[Wafer Thinning Issues]

Wafer Breakage

- Edge Chipping（sharp edge）
- Grinding Damage
- Wafer Warpage

Wafer Handling

- Wafer Warpage

Die Breakage

- Die Level Warpage
- Dicing damage
- Chipping

[Production process]

Base Film Production process

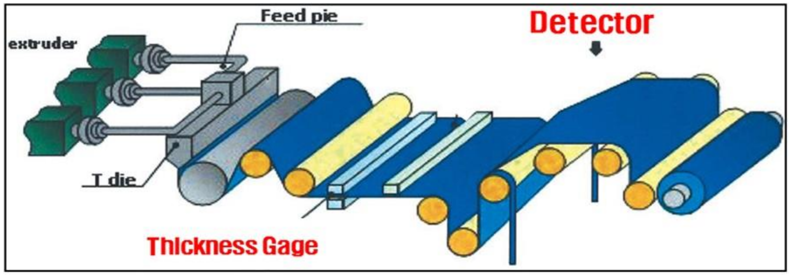

Base film raw material

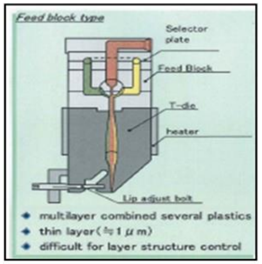

Base film production


TTV Scanning Equipment


Sensing Probe


detector equipment





- multilayer combined several plastics
- thin layer(≒1 μm)
- difficult for layer structure control

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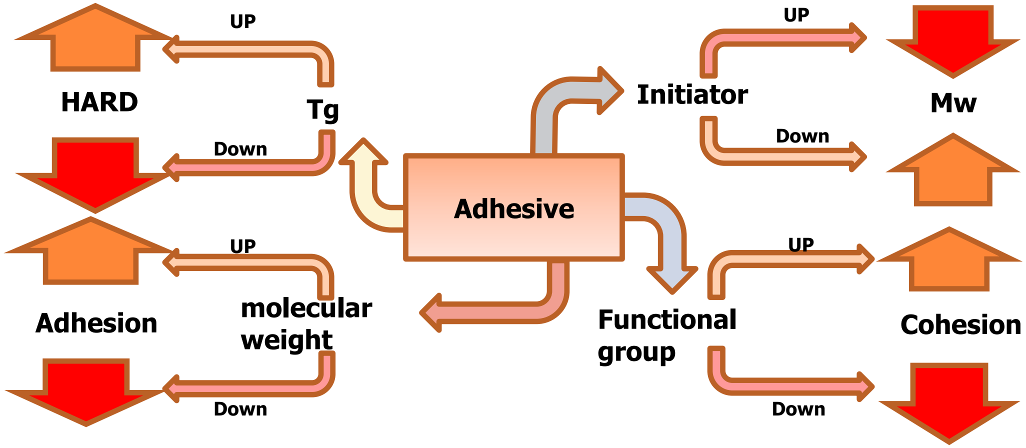
[Production process]

Adhesive Production process



UP

HARD

Tg

Down

UP

Adhesion

molecular weight

Down

Adhesive

Initiator

UP

Mw

Down

Functional group

UP

Cohesion

Down

Reactor

Adhesive Raw material

Adhesive Blending

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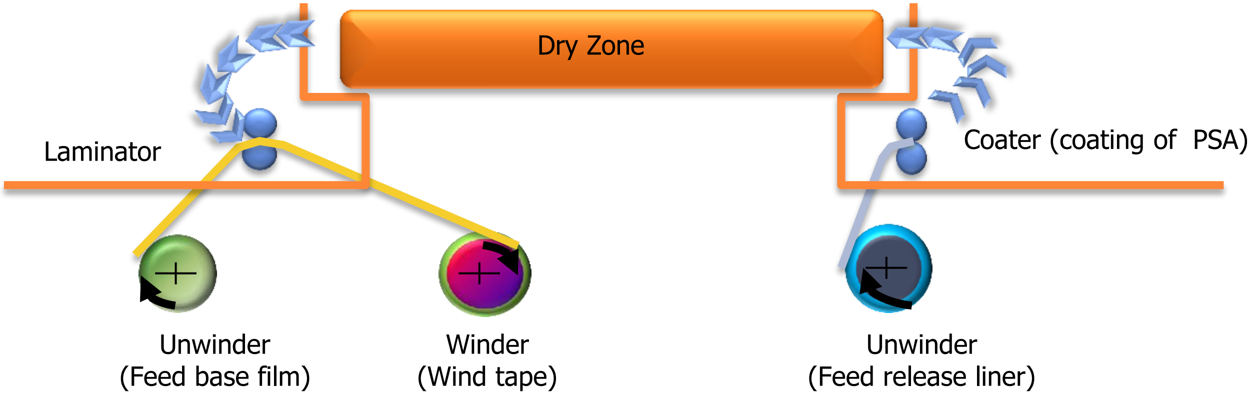
[Production process]

Tape Production process



Dry Zone

Laminator

Coater (coating of PSA)

Unwinder
(Feed base film)

Winder
(Wind tape)

Unwinder
(Feed release liner)

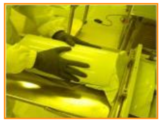
Adhesive coating

Inspection

Aging

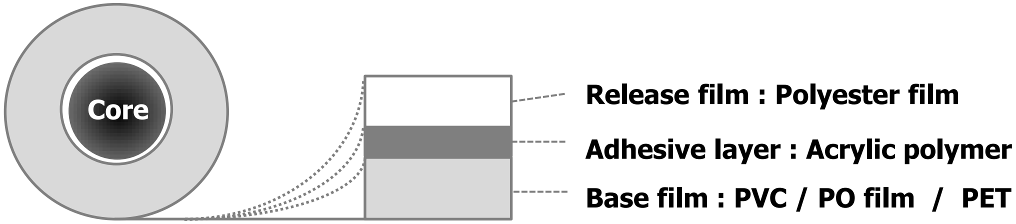
Measuring

Slitting



Packaging

[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
APB1	PO	Light Blue	130㎛	100	Normal wafer Back Grinding
APB3	PO	Light Blue	150㎛	150	Small size chip (under 2mm)
APB5	PO	Light Blue	170㎛	135	Small size chip (under 2mm)
AP205	PO	Light Blue	205㎛	150	Small size chip (under 2mm)
AU130-SC	PO	Light Blue	130㎛	330 (30)	Normal wafer Back Grinding
AUB4	PO	Milky White	130㎛	1,000 (20)	Small size chip (under 2mm)

*. ( ) refers to adhesive strength after UV

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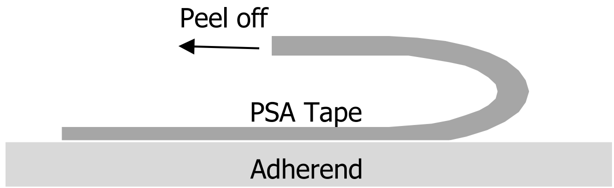
[Tape Test]

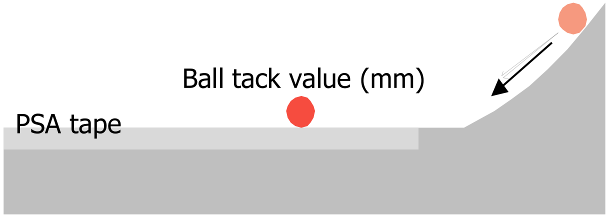
Adhesion (gf/25mm)

- 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



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[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

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Thank You!