ULTRON SYSTEMS
Dicing Tape

minitron
elektronik gmbh

Type	Description	Adhesion	Page
	Silikontrennmittelfreie Folien		
1003R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free, High Adhesive Strength, 135 µm thick, no backing film. Mainapplication: Dicing of Silicon and Ceramicsubstrates	370 / 550 *	**6**
1004R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free,Medium- High Adhesive Strength, 130 µm thick, no backing film- Mainapplication: Dicing of Silicon and Ceramicsubstrates	170 / 250 *	**7**
1005R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free, Medium-High Adhesive Strength, 125 µm thick, no backing film Mainapplication: Dicing of Silicon and Ceramicsubstrates	100 / 150 *	**8**
1007R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free, Medium Adhesive Strength, 80 µm thick, no backing film Mainapplication: Dicing of Silicon wafers	76 / 130 *	**9**
1008R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free, Medium-High Adhesive Strength, 80 µm thick, no backing film Mainapplication: Dicing of Silicon wafers	100 / 160 *	**10**
1009R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free, Low Adhesive Strength, 80 µm thick, no backing film Mainapplication: Dicing of Silicon wafers	34 / 85 *	**11**
1011R	Blue Adhesive Plastic Film (PVC), Silicone Release Agent-Free, Very-Low Adhesive Strength, 80 µm thick, no backing film Mainapplication: Dicing of Silicon wafers	19 / 32 *	**12**
1030R	Hochreine „Fisheye-free“ Sägefolie aus PVC, Klebkraft: niedrig, Dicke 80µm, mit Schutzfolie, Hergestellt in Klasse 100 Reinraum Mainapplication: Wafers backgrinding	50 / 70 *	**13**

* Adhesion after 30min and 24h mesured on Si, in g/25mm

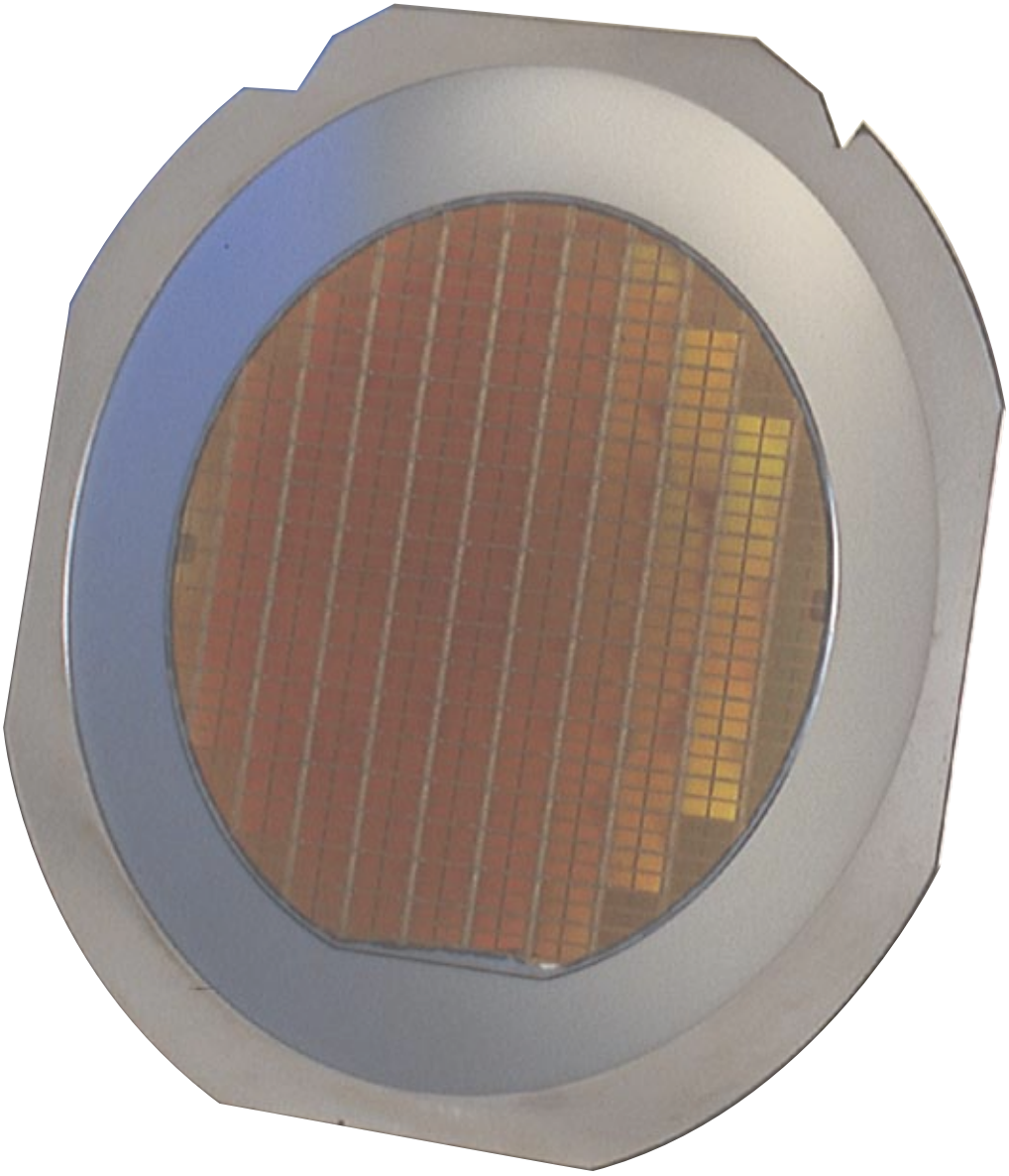
Type	Description	Adhesion	Page
	UV-sensitive Tape		
1020R	UV-sensitive tape (PVC), 95 µm thick, with backing film. Mainapplication: Dicing of Silicon wafers	before/after UV 30min: 320 / 15 24Std: 247 / 12	**18**
1020R-NAS	**Anti-static** UV-sensitive tape (PVC), 95 µm thick, with backing film. Mainapplication: Dicing of Silicon wafers	before/after UV 30min: 332 / 18 24Std: 276 / 11	**19**
1042R	**Anti-static** UV-sensitive tape (Poly Olefin), 98 µm thick, with P.E.T. Backing. Mainapplication: Dicing and Backsidegrinding of thin wafers	before/after UV 30min: 300 / 10 24Std: 600 / 10	**20**
1043R	**Anti-static** UV-sensitive tape (Poly Olefin), 168 µm thick, with P.E.T. Backing. Mainapplication: Dicing and Backsidegrinding of thin wafers	before/after UV 30min: 350 / 14 24Std: 600 / 16	**21**
1044R	**Anti-static** UV-sensitive tape (Poly Olefin), 268 µm thick, with P.E.T. Backing. Mainapplication: Dicing and Backsidegrinding of thin wafers	before/after UV 30min: 400 / 15 24Std: 700 / 15	**22**

* Adhesion after 30min and 24h mesured on Si, in g/25mm

Manufacturing processes for semiconductors are synonym for automation efficiency, yield and productivity. One of it's fundamental production steps is wafer dicing, which not only has to separate the dies, but also has to keep the chips within tight tolerances regarding dimensions, edges, orientation and position. Dicing on tape has proven to be most successful in this regard.
ULTRON SYSTEMS is one of the most innovative producers for dicing tapes and is eager to please the requirements of semiconductor and MEMS-manufactures.
Two groups of film dedicated to dicing are available:

Silicon free adhesive plastic film
As successors to the proven „blue-tapes" **ULTRON SYSTEMS** has developed dicing tapes free of any silicon release agents, for applications where highly clean wafer backsides are required.

UV-sensitive dicing tapes
The distinct advantage of UV-curable film is a high adhesive strength for the ideal securing of wafers/ dies during dicing, which is significantly reduced upon exposure to UV light to facilitate die handling/ film removal. Substantially increased yield results from lower die/wafer stress. UV-sensitive tapes are recommended to be used if the dies are stored on



Wafer on film and frame, ready for processing

Silicone Free Film

No more contamination by silicone release agents. **ULTRON SYSTEMS** new line of dicing tape contains NO silicone release agents, resulting in a cleaner process and more consistent adhesive properties.
When looking for contamination, usually the first thing seen on the wafer is silicone release residue, not adhesive. The adhesive itself generally transfers later, after the adhesive level has greatly increased.
This silicone release agent is common in most adhesive plastic films and facilitates film unwinding. After mounting a wafer on tape, the adhesive strength increases greatly over the first 24 hours and, after 24 hours, the adhesive level continues to increase slowly until at some point the adhesion to the wafer is as strong as the adhesion to the backing plastic, resulting in adhesive transfer to the die.

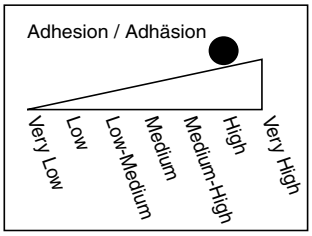
The silicone free tapes from **ULTRON SYSTEMS** allow longer „on tape times“ than many other tapes, but if dies / wafers have to be kept on tape during a longer period of time, we recomend the use of UV-sensitive film.

All dicing tapes are supplied in 100m length of roll.

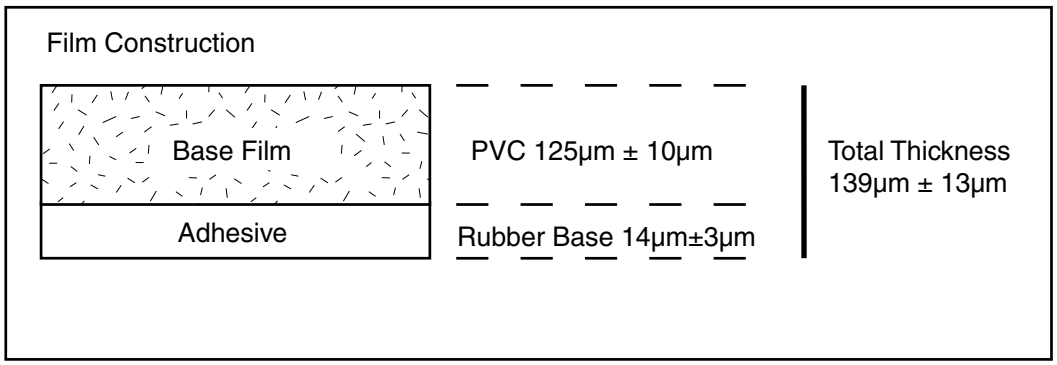
Please note!
Compared to films with silicone release agent, the unwinding force of our silicone free films will seem to be much higher.

It does not mean that the tack strength of the film is higher.

Dicing Tape 1003R: Silicone Free



Silicone release agent free, smooth high tack adhesive film for direct lamination to the wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with a rubber base adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1003 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	125 µm
Color:	blue
Adhesive:	rubber
Adhesive thickness:	14 µm
Adhesion (to stainless steel SS):	350g / 25mm
Adhesion (to Si):	370g / 25mm
Unwinding force:	250g / 25mm

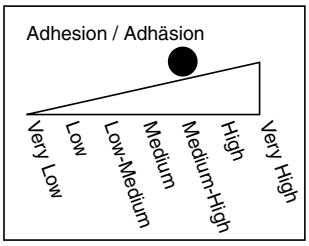
	Horizontal	Vertical
Elongation:	200 %	240 %
Tensile strength:	8.0 kg / 25mm	9.7 kg / 25mm

Adhesion (@300 mm / min speed)	Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
	SS	350	380	390	420	490	520
	Si	370	390	400	460	500	550

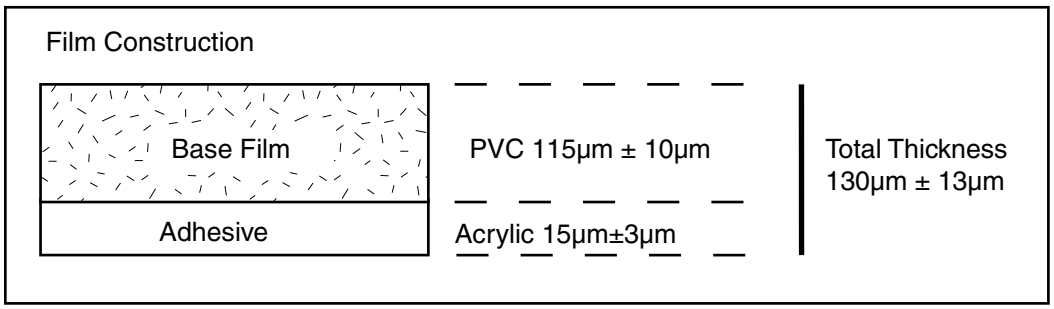
SS: Stainless Steel

figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1004R: Silicon free



Silicon release agent free smooth medium-high tack adhesive film for direct lamination to the wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with an acrylic adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1004 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	115 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	15 µm
Adhesion (to stainless steel SS):	160g / 25mm
Adhesion (to Si):	170g / 25mm
Unwinding force:	300g / 25mm

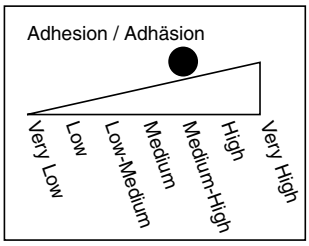
	Horizontal	Vertical
Elongation:	min. 200 %	min. 240 %
Tensile strength:	7.5 kg / 25mm	9.0 kg / 25mm

Adhesion (@300 mm/min speed)	Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
	SS	160	170	170	190	230	270
	Si	170	170	180	200	210	250

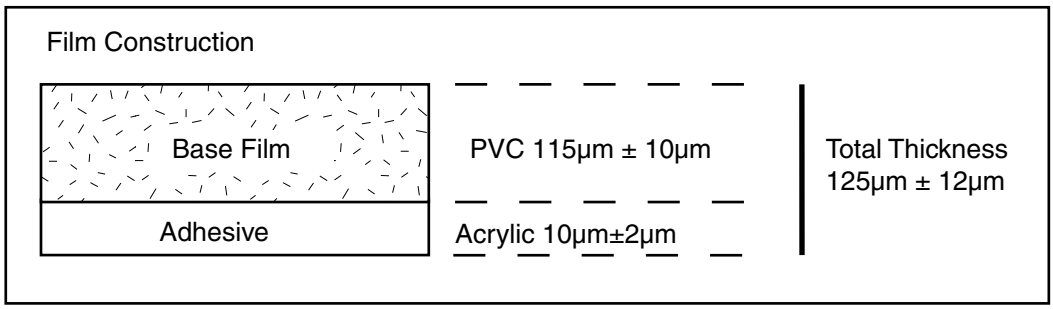
SS: Stainless Steel

Figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1005R: Silicon free



Silicon release agent free, smooth medium tack adhesive for direct lamination to the wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with an acrylic adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1005 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	115 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	10 µm
Adhesion (to stainless steel SS):	90g / 25mm
Adhesion (to Si):	100g / 25mm
Unwinding Force:	150g / 25mm

	Horizontal	Vertical
Elongation:	min. 200 %	min. 240 %
Tensile strength:	7.5 kg / 25mm	9.0 kg / 25mm

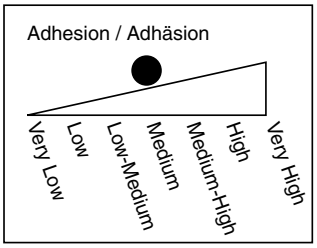
Adhesion (@300 mm / min speed)

Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
SS	90	95	95	110	140	170
Si	100	105	110	115	135	150

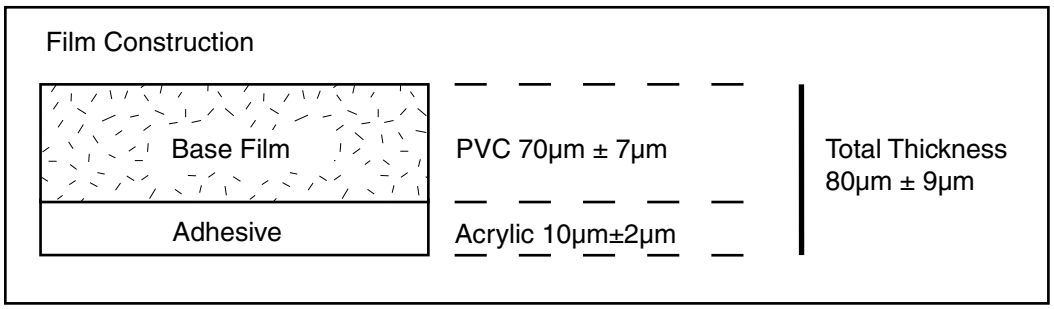
SS: Stainless Steel

Figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1007R: Silicon free



Silicon release agent free uniform thickness medium tack adhesive film for direct lamination to the wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with an acrylic adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1007 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	70 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	10 µm
Adhesion (to stainless steel SS):	70g / 25mm
Adhesion (to Si):	76g / 25mm
Unwinding force:	150g / 25mm

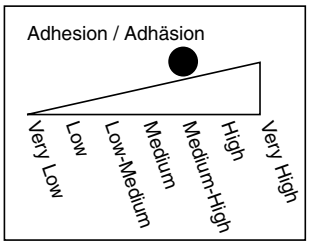
	Horizontal	Vertical
Elongation:	160 %	200 %
Tensile strength :	3.0 kg / 25mm	4.0 kg / 25mm

Adhesion (@300 mm / min speed)	Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
	SS	70	75	75	95	110	135
	Si	76	79	82	101	115	130

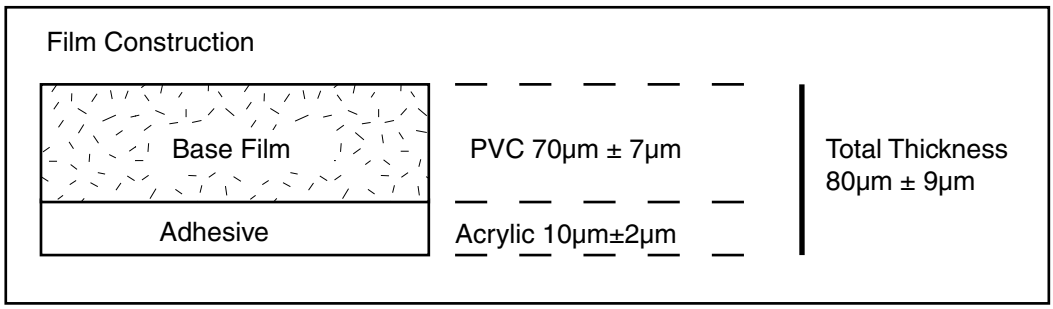
SS: Stainless Steel

Figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1008R: Silicon free



Silicon release agent free uniform thickness medium-high tack adhesive film for direct lamination to the wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with an acrylic adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1008 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	70 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	10 µm
Adhesion (to stainless steel SS):	95g / 25mm
Adhesion (to Si):	100g / 25mm
Unwinding force:	150g / 25mm

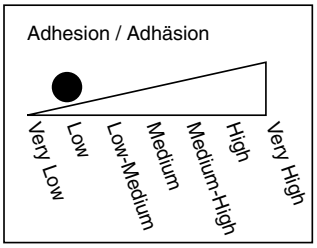
	Horizontal	Vertical
Elongation:	min. 160 %	min. 200 %
Tensile strength:	3.0 kg / 25mm	4.0 kg / 25mm

Adhesion (@300 mm / min speed)	Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
	SS	95	95	105	115	150	170
	Si	100	103	110	120	135	160

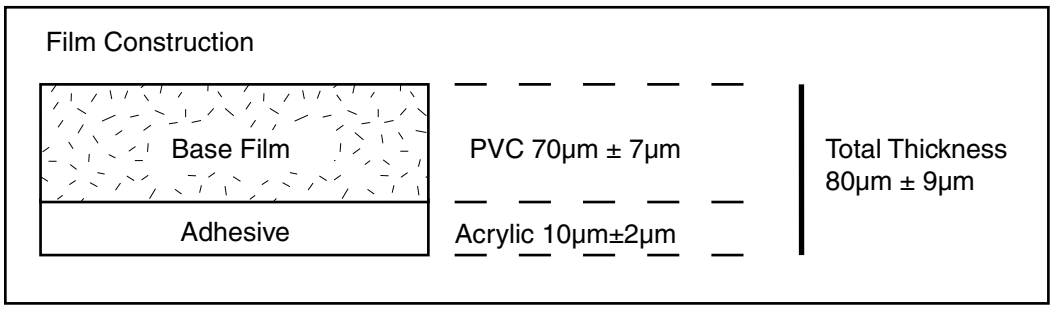
SS: Stainless Steel

Figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1009R: Silicon free



Silicon release agent free uniform thickness low tack adhesive film for direct lamination to the wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with an acrylic adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1009 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	70 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	10 µm
Adhesion (to stainless steel SS):	30g / 25mm
Adhesion (to Si):	34g / 25mm
Unwinding force:	150g / 25mm

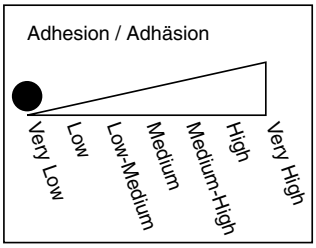
	Horizontal	Vertical
Elongation:	160 %	200 %
Tensile strength:	3.0 kg / 25mm	4.0 kg / 25mm

Adhesion (@300 mm / min speed)	Testmaterial	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
	SS	30	30	36	42	51	68
	Si	34	35	49	65	67	85

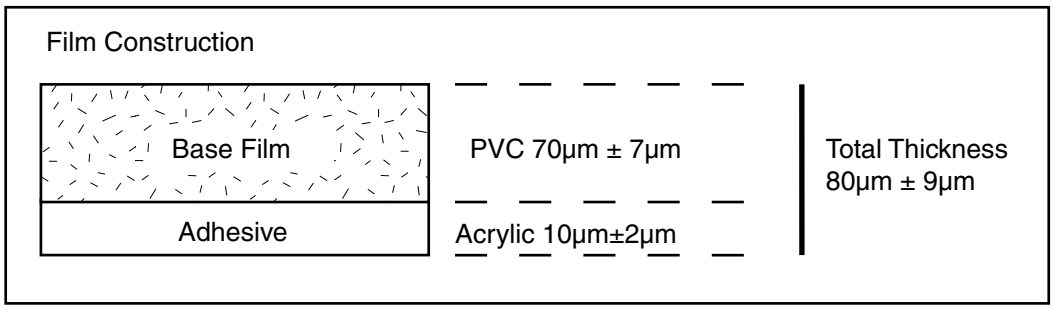
SS: Stainless Steel

Figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1011R: Silicon free



Silicon release agent free, uniform thickness extra low tack adhesive film for direct lamination to wafer backside. Suitable for use in wafer dicing operations. The base film is of PVC with an acrylic adhesive. Film is supplied in 100-meter rolls without backing liner.



Specification:

Type:	1011 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	70 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	10 µm
Adhesion (to stainless steel SS):	18g / 25mm
Adhesion (to Si):	19g / 25mm
Unwinding force:	150g / 25mm

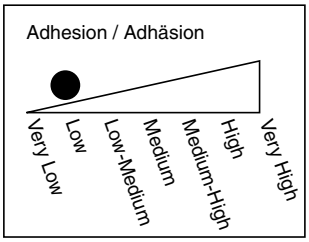
	Horizontal	Vertical
Elongation:	160 %	200 %
Tensile strength :	3.0 kg / 25mm	4.0 kg / 25mm

Adhesion (@300 mm / min speed)	Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
	SS	18	19	18	18	18	22
	Si	19	21	22	26	27	32

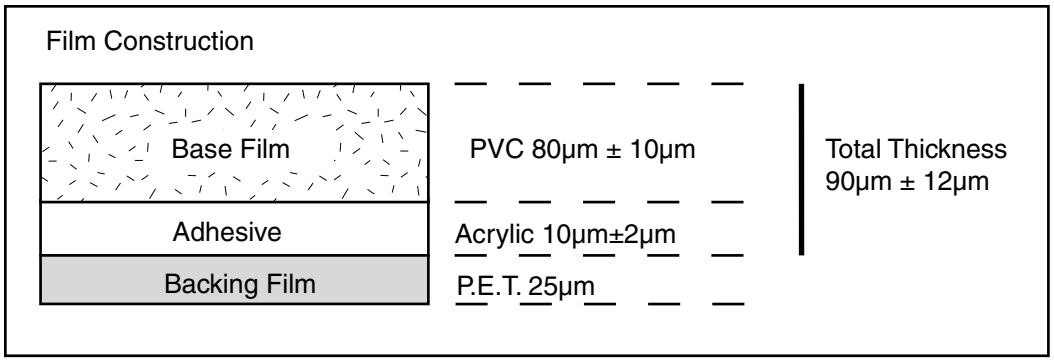
SS: Stainless Steel

Figures in g / 25 mm, 180° peeling angle @ 300 mm / min

Dicing Tape 1030R



Ultra smooth, high quality **Fisheye-free** film for direct lamination to the wafer surface to provide protection during the backgrinding process. The base film is of cast PVC with an Acrylic adhesive. Film is **manufactured in Class 100 Clean Room** and is supplied in 100m rolls with a P.E.T. backing liner to ensure the adhesive remains dust-free.



Specification:

Type:	1030 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	80 µm
Color:	blue
Adhesive:	acrylic
Adhesive thickness:	10 µm
Adhesion (to stainless steel SS):	80g/25mm
Adhesion (to Si):	55g/25mm
Unwinding force:	

	Horizontal	Vertical
Elongation:	min. 150 %	min. 150 %
Tensile strength:	3.5 kg / 25 mm	3.5 kg / 25mm

Adhesion (@300 mm / min speed)

Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
SS	80	85	85	87	97	110
Si	55	60	60	65	65	70

SS: Stainless Steel

Figures in g/25mm, 180° peeling angle @ 300mm/min

UV-Sensitive Dicing Tape

UV-sensitive tape is recommended if:

- Very high adhesive strength is needed
- very thin, delecate wafers are separated
- dies of different sizes have to be processed
- the time between dicing and pick-up is very long, or changes often

With a typical „blue“ tape, the adhesive strength has to be carefully selected to match the die size: High enough to firmly hold small chips during dicing, low enough to enable pick-up without harming the die.
UV-sensitive tape requires no compromises:
Uncured the adhesive strength is high enough to hold the smallest dies in place securely, eliminating chipping which is often caused by die movement.
By reducing the adhesive strength to 1/10, during the UV-curing process, even large dies can be picked up without stress or breakage.

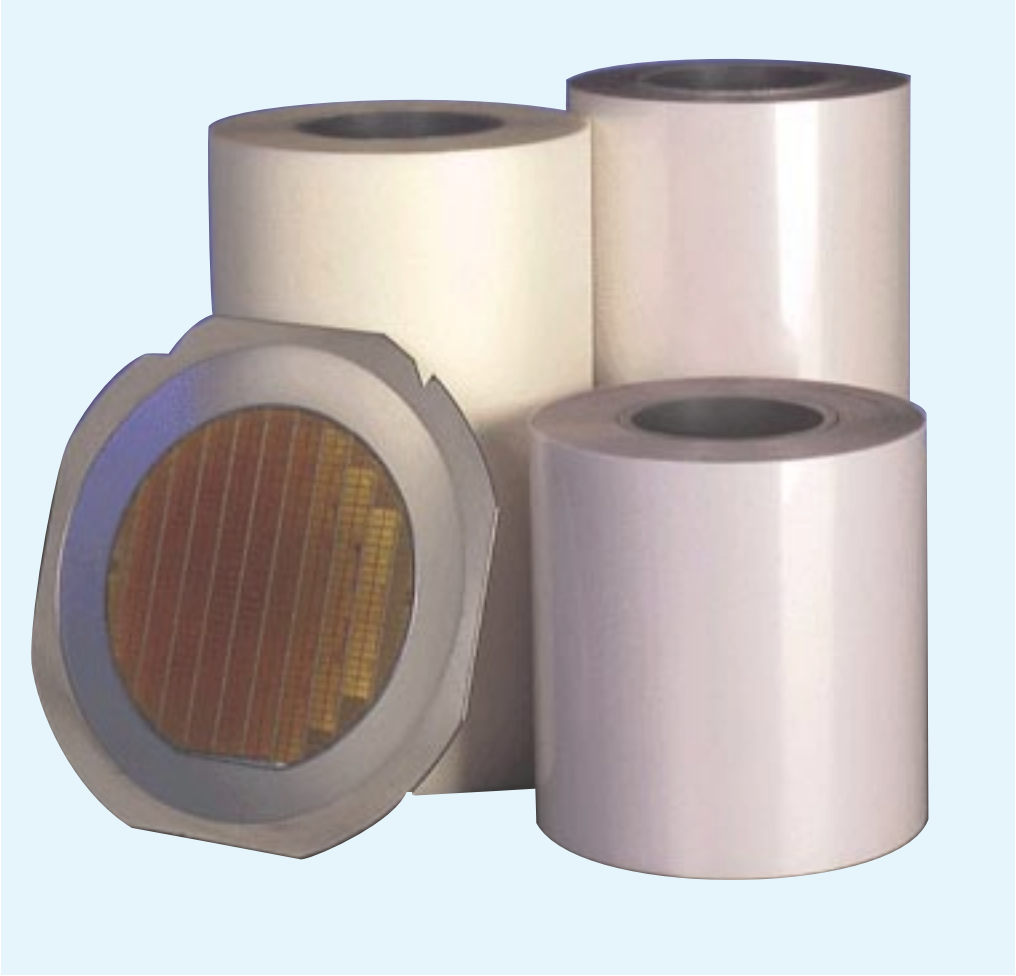
Another advantage of UV-sensitive tapes is, that the adhesion strength remains on a constant level after UV-curing.

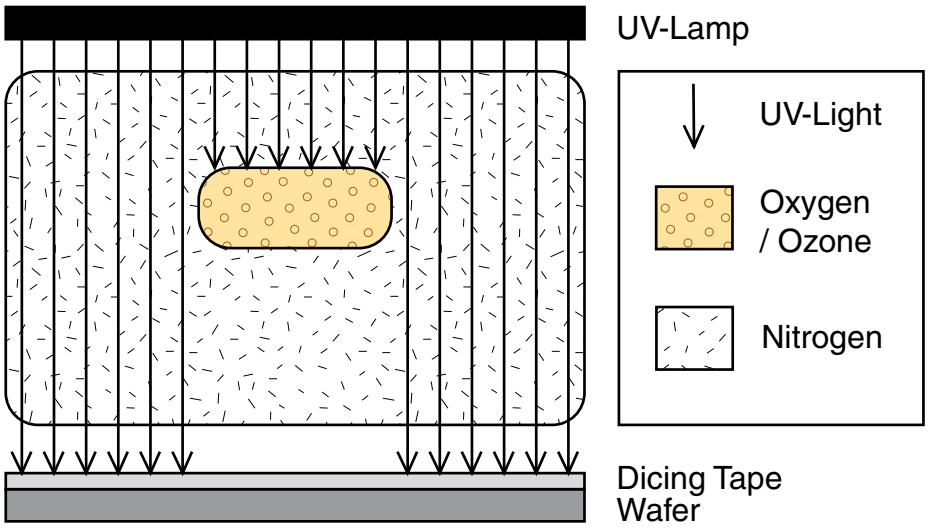
Thus dies can be stored on the tape for a long period of time without increase of adhesive strength.

This is a huge benefit for all applications where only the currently needed dies are picked-up and the rest remain on tape.

To protect even the most delicate chips ULTRON SYSTEMS has developed tapes with an additional anti static layer to eliminate negative charge.

All UV-sensitive tapes are supplied on 100m rolls.

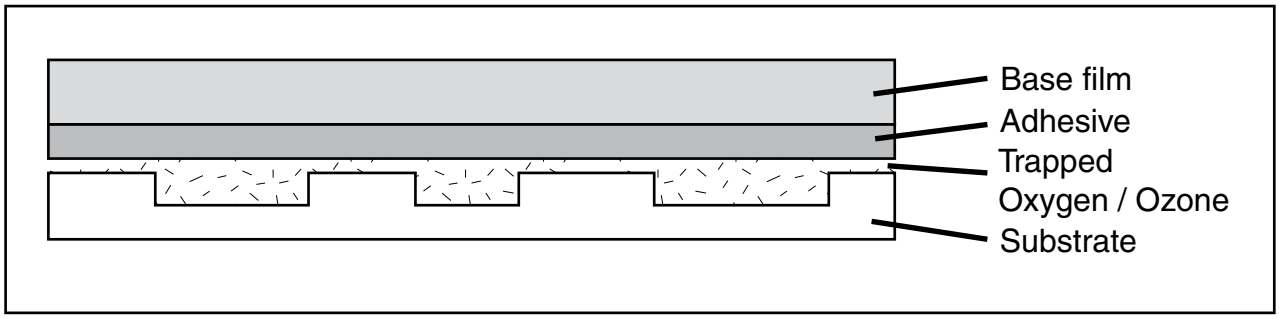




During the UV curing process oxygen (O_2) is ionized by deep UV light, generating small amounts of ozone (O_3). Ozone acts as a filter to the UV light, blocking penetration to the film. That could cause incomplete exposure and adhesive residue on the wafer.
To avoid this, we recommend the use of UV curing sytems from **ULTRON SYSTEMS**, which are equipeded with a nitrogen blanket to remove the oxygen.

UV Curing System UH101 by **ULTRON SYSTEMS**

Trapped Oxygen / Ozone



Tape application:
Any Oxygen trapped between the wafer and adhesive may create microscopic bubbles of ozone when exposed, resulting in adhesive residues. This is especially important if devices have high aspect ratio trenches.
UV-Curing:
Oxygen / Ozone between the UV-lamp and the wafer is ionized and prevents penetration to the adhesive.

Adhesive Properties

Please note the following changes to the adhesive properties of the film as follows:

- The adhesive strength will decrease if the film is mounted on the wafer at cooler temperatures. It may be difficult to mount, and air bubbles and wrinkles may occur. It is recommended that the film is mounted at a temperature between 20 - 60 °C, and should not exceed 75 °C.
- If a higher temperature is required to mount the film, sample wafers should first be tested at the required temperatures.
- If the wafer is left in an area of high temperature after the film is mounted, adhesive may remain on the back of the wafer.

UV Exposure

The following is recommended when exposing the UV film:

- Expose the film from the base film side (not the adhesive side).
- Not enough exposure of UV ligth may result in die pick-up failure.
- Do not expose only a section of the UV film in use; rather, expose the entire surface.
- For best results, restrict UV exposure in an air-free atmosphere. UV exposure in a nitrogen atmosphere is very effective.

Film storage

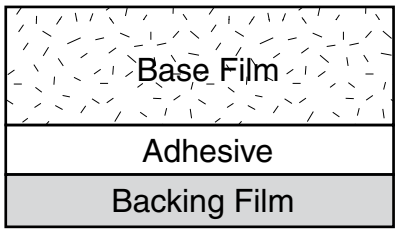
The UV films from **ULTRON SYSTEMS** have a guaranteed shelf life of 6 months from the date of manufacture providing the following storage conditions are met:

- Film must be stored away from direct sunlight or any other forms of UV radiation.
- Film must be stored at ambient temperature not exceed 25 °C.
- Film rolls must be stacked vertically to prevent deformation. Film should not be stacked higher than four rolls.
- When storing film mounted on a wafer frame and/or wafer, keep away from any form of UV radiation to prevent a change in the adhesive properties of the film.

Dicing Tape 1020R: UV-sensitive

This is the most versatile UV-sensitive dicing tape from **ULTRON SYSTEMS**.
It is highly expandable. If higher adhesive strength is needed, the modified version 1020R-AS with an additional anti-static protection layer is available.

Film Construction



PVC 80µm ± 8µm
Acrylic 15µm ± 2µm
P.E.T. 38µm ± 3µm

Total Film Thickness
95µm ± 10µm

Specification:

Type:	1020 R
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	80 µm
Backing film material:	P.E.T. (Polyethylene terephthalate)
Backing film thickness:	38 µm
Color:	transparent, clear
Adhesive:	Acrylic UV-sensitive
Adhesive thickness:	15 µm
Adhesion before UV-curing (to Si):	260g / 25mm
Adhesion after UV-curing (to Si):	20g / 25mm
Unwinding force:	25g / 25mm

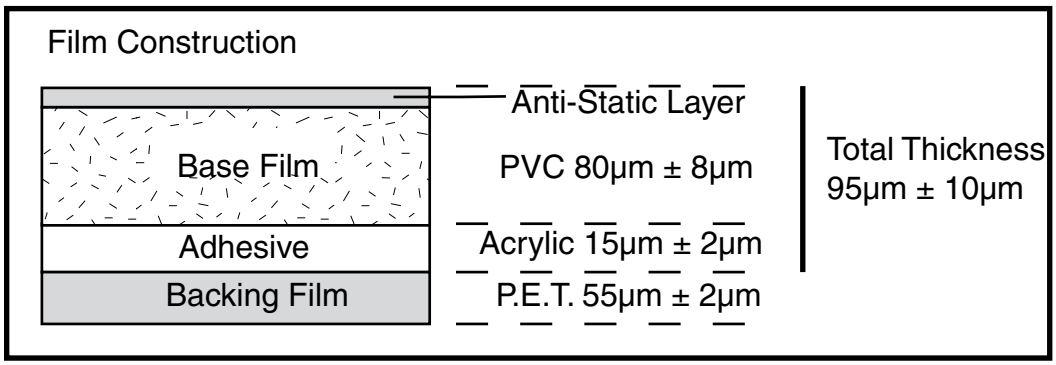
After UV-curing	Horizontal	Vertical
Elongation:	300 %	260 %
Tensile strength:	2.5kgf / cm^2	3.0 kgf / cm^2

Adhesion (@300 mm/ min speed)	Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr	48 hr	72 hr
	SS (before UV)	375	380	380	362	315	308	305	385
	SS (after UV)	20	16	16	16	13	14	15	15
	Si (before UV)	320	310	305	286	248	247	269	299
	Si (after UV)	15	13	12	14	12	12	12	12

SS: Stainless Steel
Figures in g / 25mm, 180° peeling angle @ 300mm / min UV Source: 200mJ / cm^2

Dicing Tape 1020R-NAS: UV-sensitive, antistatic

Very similar to 1020R, but with higher adhesive strength and the benefit of an additional antistatic layer to eliminate negative charge „build-up“.
Expands very well.



Specification:

Type:	1020 R-NAS
Base film material:	PVC (Polyvinyl Chloride)
Base film thickness:	80 µm
Backing film material:	P.E.T. (Polyethylene Terephthalate)
Backing film Thickness:	55 µm
Color:	transparent, clear
Adhesive:	Acrylic UV-sensitive, antistatic
Adhesive thickness:	15 µm
Adhesion before UV-curing (to SS):	383 g / 25 mm
Adhesion after UV-curing (to SS):	20g / 25 mm
Unwinding force:	25 g / 25 mm
Surface resistivity: (Adhesive)	4,1 x 10^7 Ω

	Horizontal	Vertical
Elongation:	300 %	240 %
Tensile strength:	25 N / cm^2	30 N / cm^2

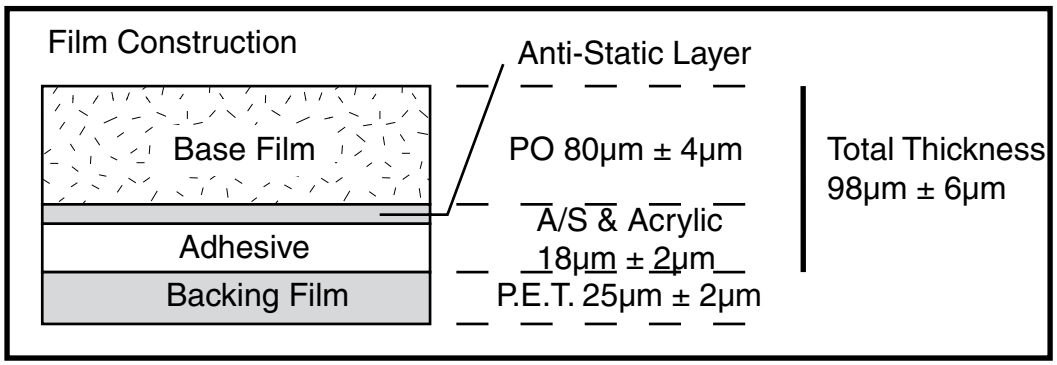
Adhesion (@300 mm/min speed)

Test material	30 min	1 hr	2 hr	4 hr	8 hr	24 hr
SS (uncured)	383	390	389	371	326	315
SS (UV cured)	20	19	17	16	15	14
Si (uncured)	332	335	320	308	278	276
Si (UV cured)	18	15	15	14	12	11

SS: Stainless Steel
Figures in g / 25mm, 180° peeling angle @ 300mm / min
UV Source: 200mJ/cm^2

Dicing Tape 1042R: UV-sensitive, antistatic

ULTRON SYSTEMS tape with best value for money. Made with a Polyolefin Base.



Specification:

Type:	1042 R
Base film material:	PO (Polyolefin)
Base film thickness:	80 µm
Backing film material:	P.E.T. (Polyethylene Terephthalate)
Backing film thickness:	25 µm
Color:	transparent, clear
Adhesive:	Acrylic UV-sensitive, antistatic
Adhesive thickness:	18 µm
Adhesion before UV-curing (to SS):	300g/25mm
Adhesion after UV-curing (to SS):	25g/25mm
Unwinding force:	25g/25mm

	Horizontal	Vertical
Elongation:	700 %	600 %
Tensile Strength:	400 kgf/cm^2	400 kgf/cm^2

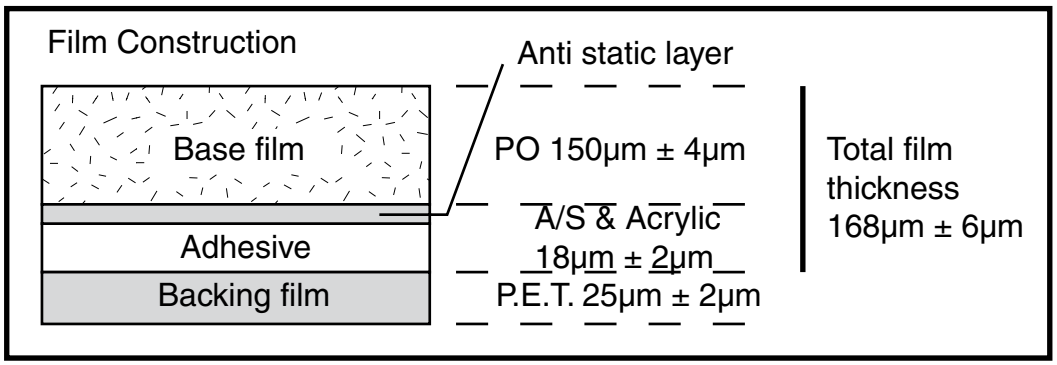
Adhesion (@300 mm/min speed)

Test material	30 min	1 hr	2 hr	4 hr	8 hr	12 hr	24 hr
SS (before UV)	300	330	350	400	500	540	550
SS (after UV)	25	25	26	26	26	26	28
Si (before UV)	300	350	400	460	550	560	600
Si (after UV)	10	10	10	10	10	10	10

Figures in g/25mm, 180° peeling angle @ 300mm/min
UV source: 200mJ/cm2

Dicing Tape 1043R: UV-sensitive

Similar to 1042R, 1043R is very well suited for wafer dicing applications, as well as for wafer backgrinding applications.



Specification:

Type:	1043 R
Base film material:	PO (Polyolefin)
Base film thickness:	150 µm
Backing film material:	P.E.T. (Polyethylene Terephthalate)
Backing film thickness:	25 µm
Color:	transparent, clear
Adhesive:	Acrylic UV-sensitive, antistatic
Adhesive thickness:	18 µm
Adhesion befor UV-curing (to SS):	350g / 25mm
Adhesion after UV-curing (to SS):	14g / 25mm
Unwinding force:	25g / 25mm

	Horizontal	Vertical
Elongation:	820 %	680 %
Tensile strength:	320 kgf/cm^2	350 kgf/cm^2

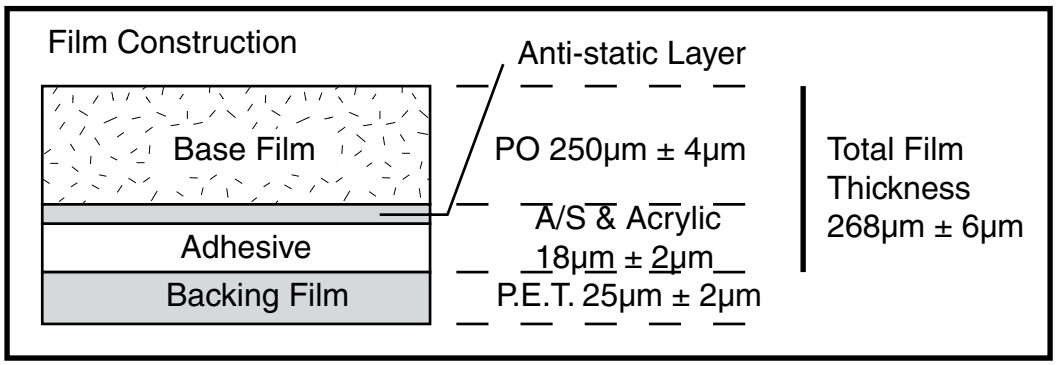
Adhesion (@300 mm/min speed)

Test material	30 min	1hr	2 hr	4 hr	8 hr	12 hr	24 hr
SS (before UV)	320	330	380	390	400	450	480
SS (after UV)	27	27	27	27	27	27	28
Si (before UV)	350	380	550	560	580	600	600
Si (after UV)	14	14	14	15	15	15	16

Figures in g/25mm, 180° peeling angle @ 300mm/min
UV source: 200mJ/cm2

Dicing Tape 1044R: UV-sensitive, antistatic

With it's 250µm thick base film 1044R is most suitable for thick wafers and hard materials, where cutting deep into the tape is required to overcome the blades rounded edge problem.



Specification:

Type:	1044 R
Base film material:	PO (Polyolefin)
Base film thickness:	250 µm
Backing film material:	P.E.T. (Polyethylene Terephthalate)
Backing film thickness:	25 µm
Color:	transparent, clear
Adhesive:	Acrylic UV-sensitive, antistatic
Adhesive thickness:	18 µm
Adhesion before UV-curing (to SS):	400g/25mm
Adhesion after UV-curing (to SS):	15g/25mm
Unwinding force:	25g/25mm

	Horizontal	Vertical
Elongation:	830 %	740 %
Tensile strength:	350 kgf/cm^2	340 kgf/cm^2

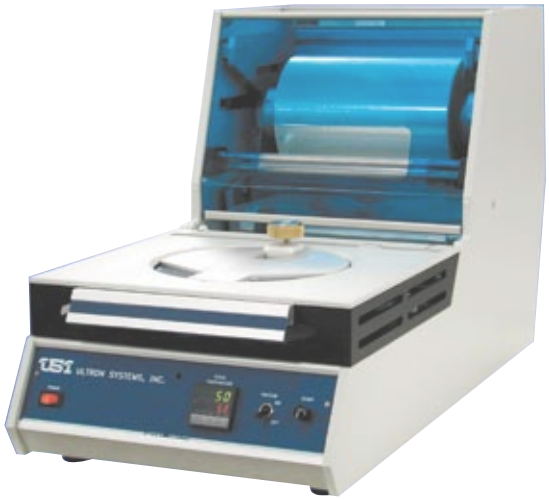
Adhesion (@300 mm/min speed)

Test material	30 min	1 hr	2 hr	4 hr	8 hr	12 hr	24 hr
SS (before UV)	350	370	600	620	640	650	650
SS (after UV)	29	29	29	29	28	29	35
Si (before UV)	400	450	500	560	670	680	700
Si (after UV)	15	15	16	16	16	16	15

Figures in g/25mm, 180° peeling angle @ 300mm/min
UV source: 200mJ/cm^2

ULTRON SYSTEMS Wafer Mounter

For precise, bubblefree lamination of wafers to the dicing film, we can offer you a complete range of manual or semiautomatic wafer mounters.

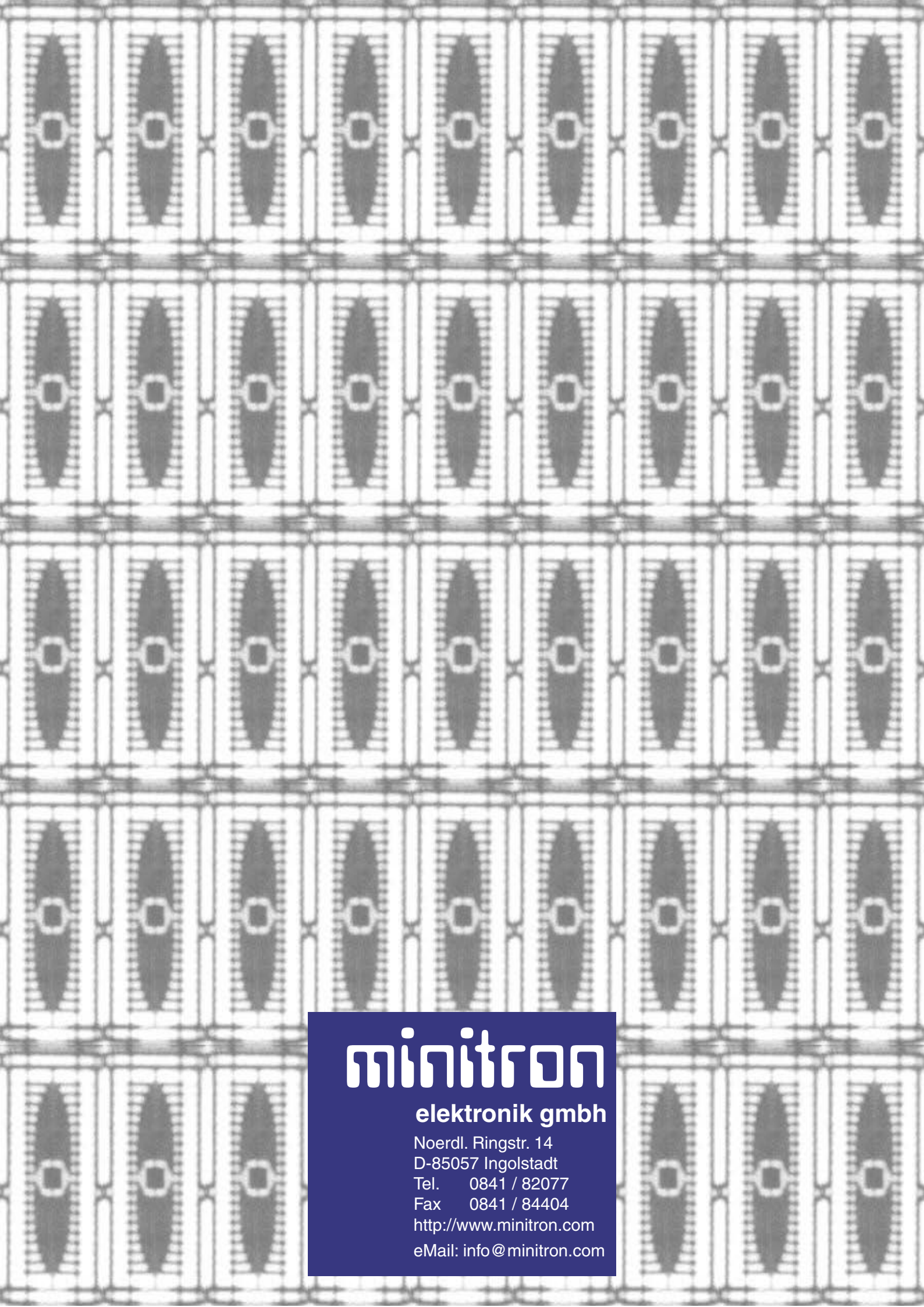


ULTRON SYSTEMS Die-Matrix-Expander

Outstanding value for money, easy operation and the possibility to adapt to many different tapes, wafer sizes, film frames and grip rings make the UH130 by **ULTRON SYSTEMS** the first choice die-matrix-expander.

ULTRON SYSTEMS UV-Curing Systems

Ranging from manual to fullyautomatic, ULTRON SYSTEMS has the right UV-curing system for every application. All systems offer curing in a nitrogen atmosphere, powerful mercury vapor lamps and easy operation for reproducible results.



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