



WE ARE COLORING THE FUTURE.



SAKURA COLOR PRODUCTS CORPORATION

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Plasma Indicator Division

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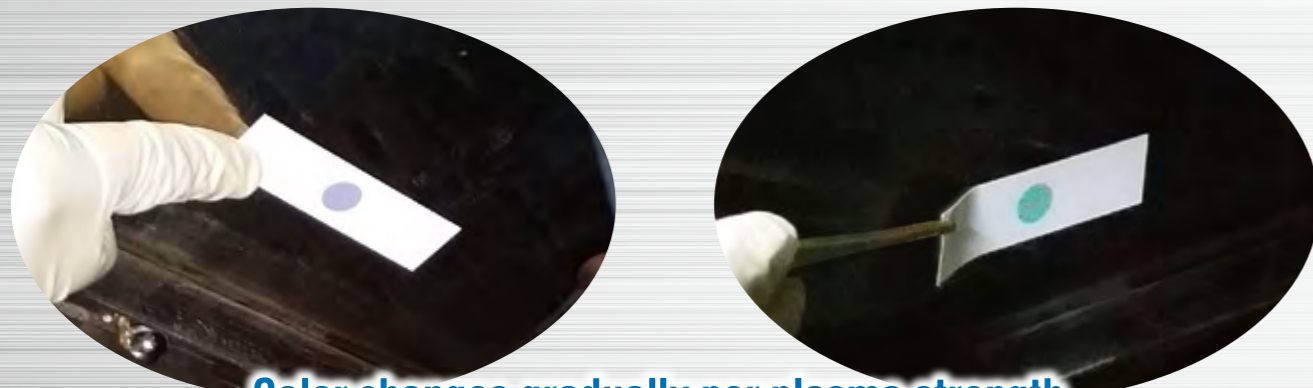
Certified Osaka Factory ISO 9001 JP13/062546 ISO 14001 JP08/070472

2018.5 ver.4.1E

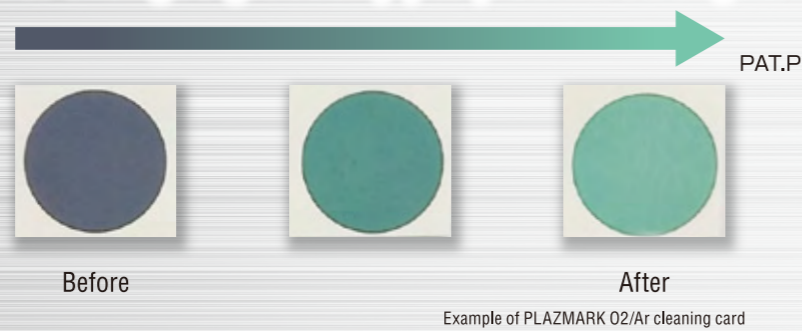
PLAZMARK™

Plasma Indicator™

Plasma Indicator™ PLAZMARK™:
Easy to use evaluation tool to
react to radicals and ions!
No need of expensive equipment
or special skill!

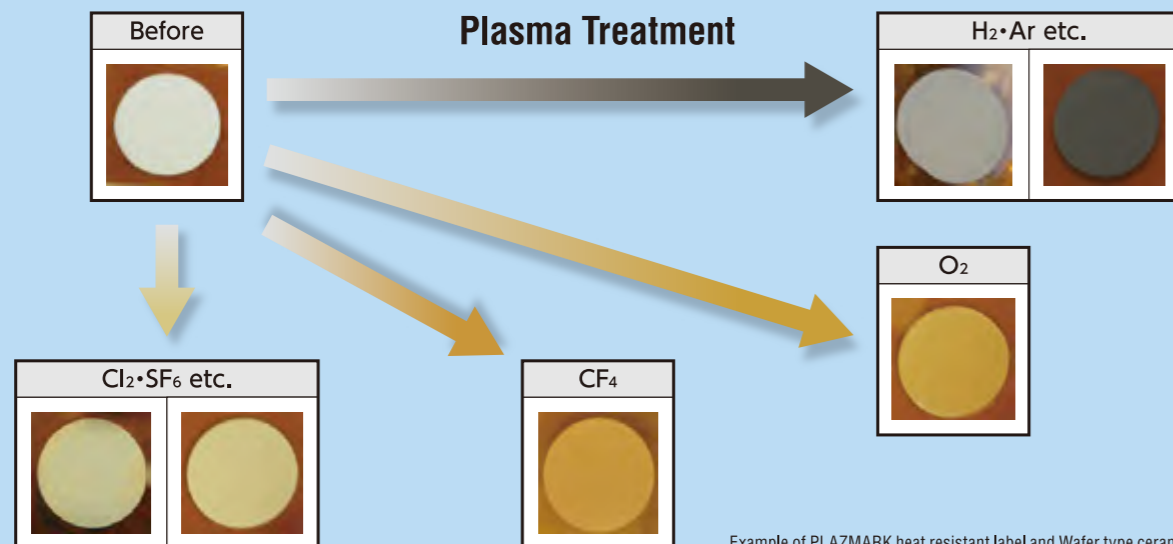


Color changes gradually per plasma strength.



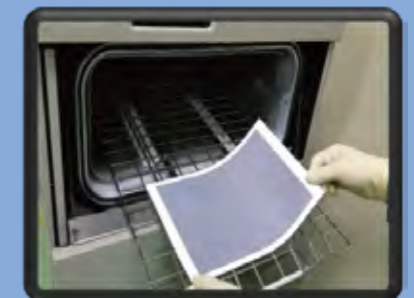
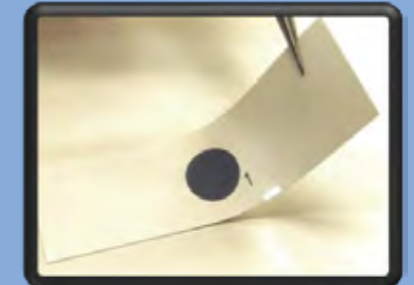
The plasma effect can be easily evaluated by "COLOR"

PAT.P



PLAZMARK is trademark of SAKURA COLOR PRODUCTS CORPORATION. PLAZMARK is registered trademark in Japan, EU, U.S.A and other countries.

Already adopted in wide range of industries.



PLAZMARK™ Product Line-up

[Series Name]

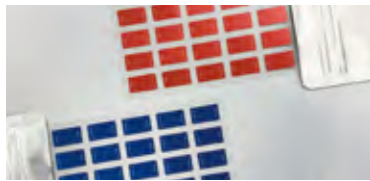
For Atmospheric Plasma

P.10



For Desmear

P.13



For O₂ cleaning

For Ar cleaning

P.7~P.8



Heat-resistant Label

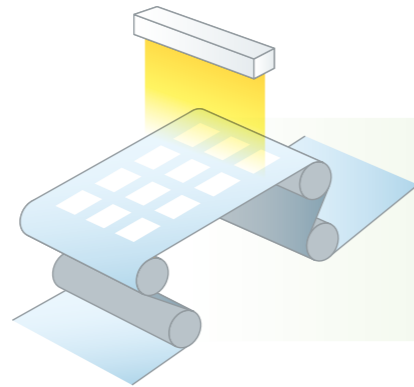
P.9



Wafer Type

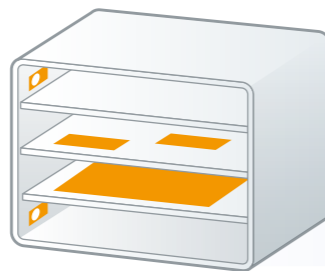
P.11~P.12

Atmospheric process



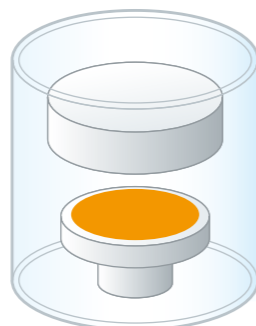
- Surface treatment
- Cleaning, etc.

Vacuum process



- Preprocess,
- Cleaning,
- Surface treatment, etc

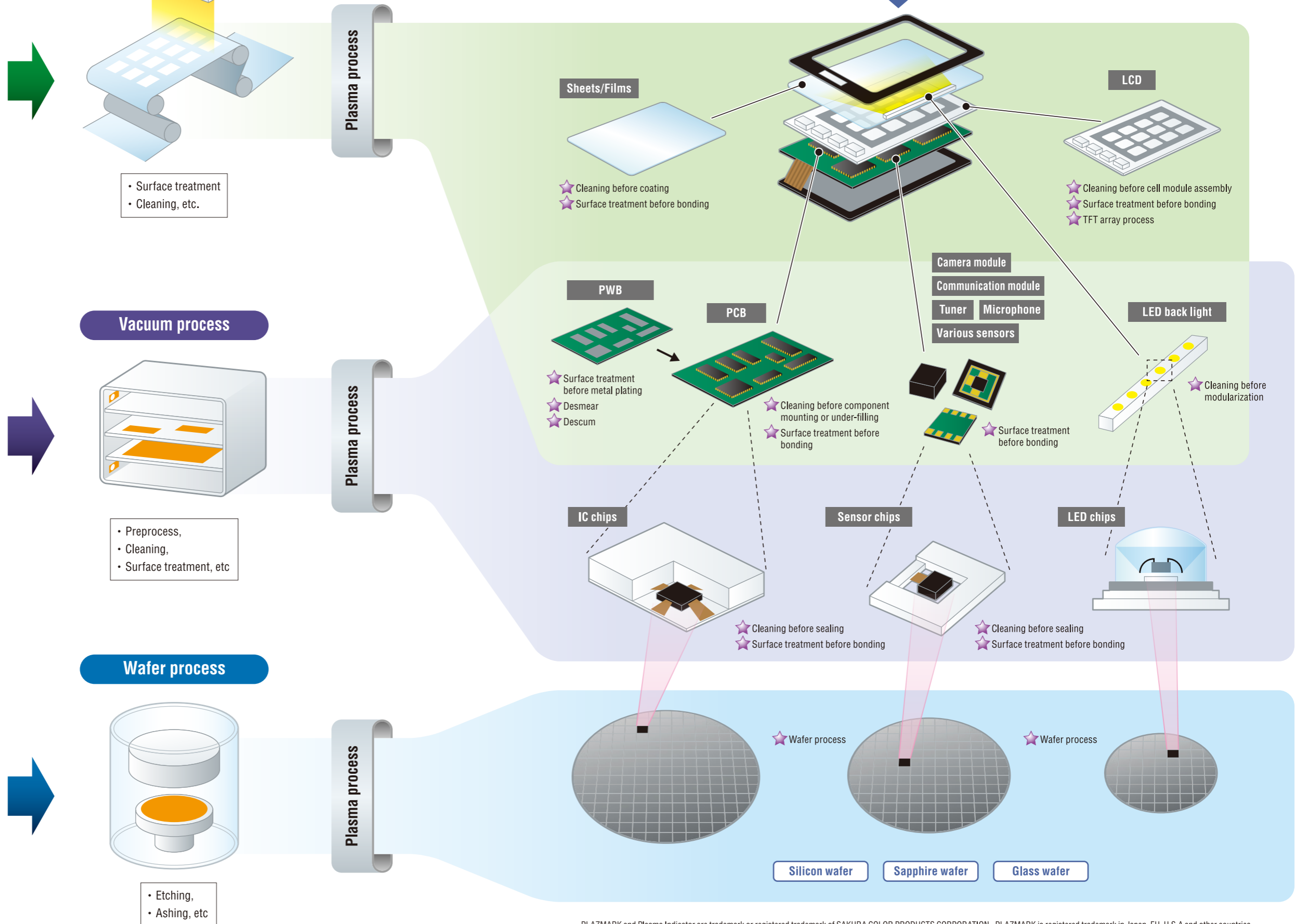
Wafer process



- Etching,
- Ashing, etc

Plasma is widely used in electronics industries

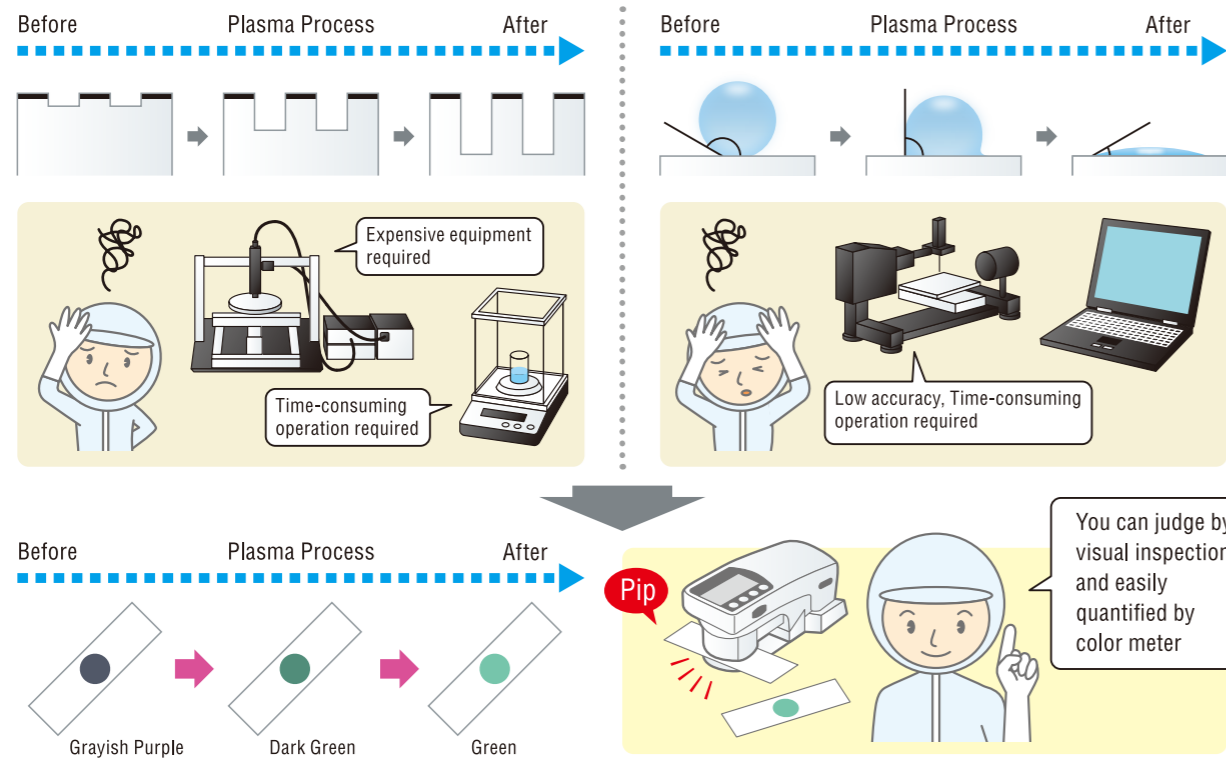
In a case of smart phone, for example...



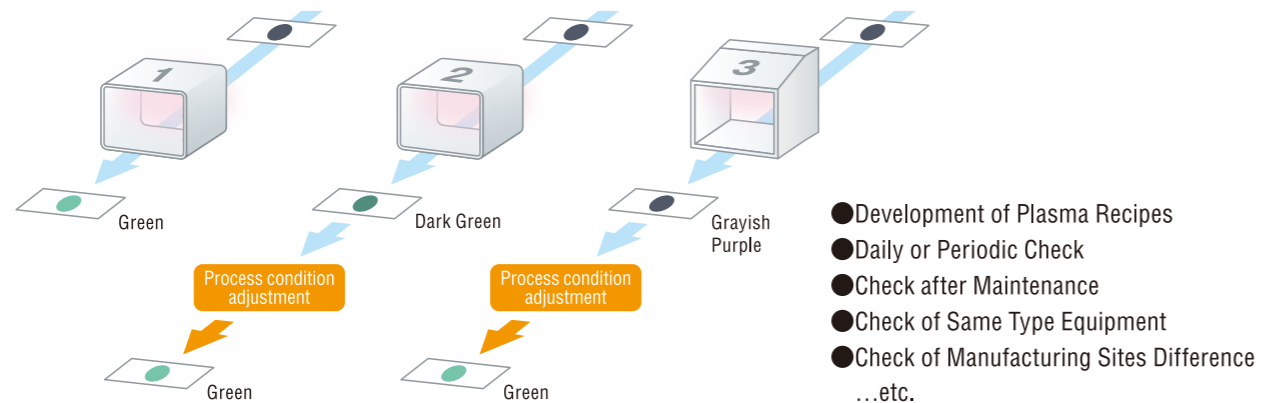
Visualize The Plasma Process

Use Scene of PLAZMARK™

Time Reduction of Quality Management

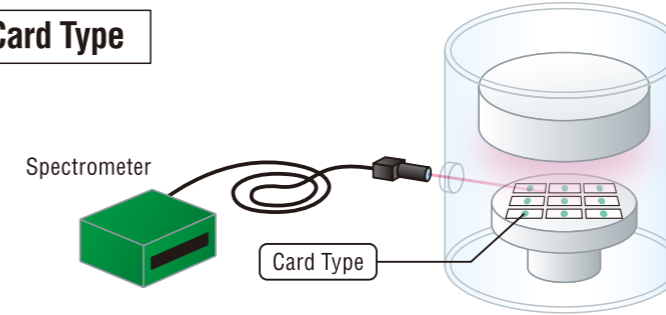


Check of Plasma Equipment



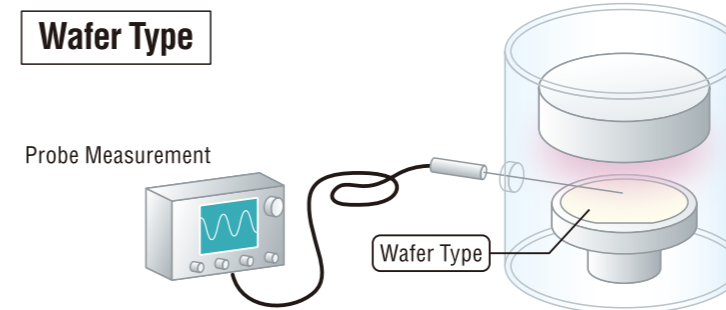
The Plasma Process Uniformity Evaluation

Card Type



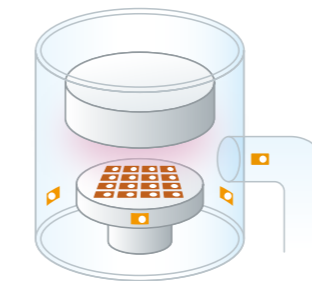
2-D uniformity evaluation is difficult to be measured by the optical method, but it can be easily evaluated by using PLAZMARK™

Wafer Type

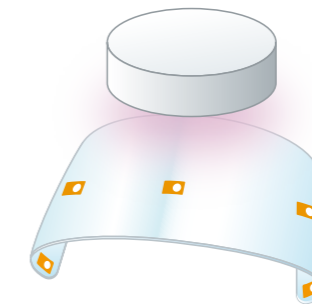


You can evaluate a larger area (entire surface of the wafer) than the electrical probe measurement.

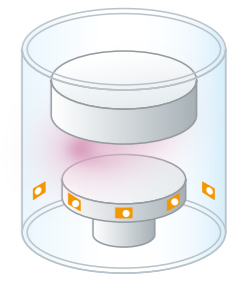
Other applications



Can be used for a difficult location to other measurement.



Can be used for 3-D works.



Can be used for a detection of abnormal discharge.

The Comparison Table of Plasma Evaluating Method

Plasma Evaluating Method	Cost	Operation	Uniformity Evaluation	Features
PLAZMARK™	Better	Better	Better	Evidence remains, Easy 2-D Uniformity Evaluation
Electrical Measuring	Average	Average	Average	Time-consuming Operation Required, Limited 2-D Uniformity Evaluation
Optical Measuring	Average	Good	Bad	Needs Viewing Port, Small Spatial Resolution
Thickness Measuring	Average	Good	Better	Expensive Measuring Instruments Required
Contact Angle Measuring	Good	Average	Average	Low Accuracy
Surface Tension Measuring Inks	Better	Better	Bad	Evidence does not Remain, Low Accuracy

For O₂ Cleaning / Ar Cleaning

Best for mounting process and assembly process



- Surface treatment before metal plating
- Surface treatment of wire bonding or flip chip bonding
- Cleaning before under-filling, after the surface mount process
- Cleaning before sealing of electronic components, such as LSIs, memories, MEMS, or LEDs



LINE UP

For O₂ Cleaning

3 sensitivity types

Optimal for plasma process where radicals are mainly working, such as O₂, N₂, Air, CF₄, H₂, NH₃ (Sometimes Ar also, under certain condition)

Also adoptable for UV or UV ozone cleaning, as it is responsive to Oxygen radicals.



"Just place it", Card type

"Adhesive" Label type



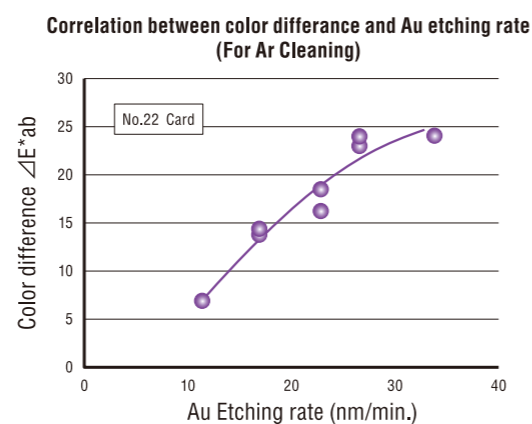
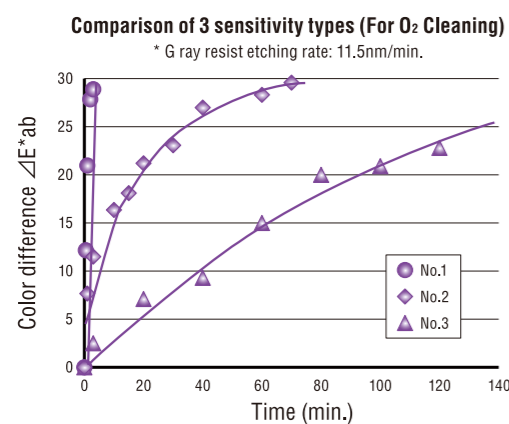
"Evaluate distribution", Sheet type

For Ar Cleaning

3 sensitivity types

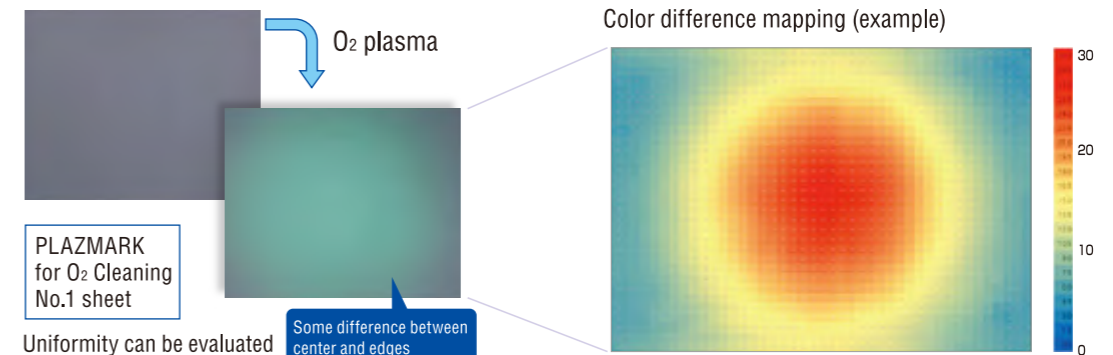
This indicator responds to the plasma where mainly ions are working such as Ar gas, which is difficult to be detected by O₂ cleaning type indicator.

For O₂ / Ar Cleaning : color change characteristics



For O₂ Cleaning / Ar Cleaning

Application for uniformity evaluation



Specification

Series	The efficiency of color change		How to Use		Heat Resistance	Structure	Size	Qty / pack	Prod. NO.
	Processing Gases *	Sensitivity	Shape	Adhesion					
PLAZMARK™ For O ₂ Cleaning Old Name: Card Type "STANDERD"	Plasma generated mainly radicals like O ₂ plasma O ₂ , N ₂ , Air, CF ₄ , H ₂ , NH ₃ , (Ar)	No.1 (High)	Card	No	100°C	Substrate : PET Film Color Change Part : Organic Colorants, Resin	Substrate : 20×70×0.2mm Color Change Part : φ11mm	100 pcs.	PLC0207-01
			Label	Yes			100 pcs.	PLL0207-01	
			Sheet	No			Substrate : 210×297×0.2mm Color Change Part : 190×290mm	5 sheets	PLC2130-01
		No.2 (Middle)	Card	No	100°C	Substrate : PET Film Color Change Part : Organic Colorants, Resin	Substrate : 20×70×0.2mm Color Change Part : φ11mm	100 pcs.	PLC0207-02
			Label	Yes			100 pcs.	PLL0207-02	
			Sheet	No			Substrate : 210×297×0.2mm Color Change Part : 190×290mm	5 sheets	PLC2130-02
		No.3 (Low)	Card	No	100°C	Substrate : PET Film Color Change Part : Organic Colorants, Resin	Substrate : 20×70×0.2mm Color Change Part : φ11mm	100 pcs.	PLC0207-03
			Label	Yes			100 pcs.	PLL0207-03	
			Sheet	No			Substrate : 210×297×0.2mm Color Change Part : 190×290mm	5 sheets	PLC2130-03
PLAZMARK™ For Ar Cleaning	Plasma generated mainly ions like Ar plasma If "PLAZMARK" for O ₂ Cleaning" can not be detected, please use this product.	No.21 (High)	Card	No	100°C	Substrate : PET Film Color Change Part : Organic Colorants, Resin	Substrate : 20×70×0.2mm Color Change Part : φ11mm	100 pcs.	PLC0207-21
			Label	Yes			100 pcs.	PLL0207-21	
			Sheet	No			Substrate : 210×297×0.2mm Color Change Part : 190×290mm	5 sheets	PLC2130-21
		No.22 (Middle)	Card	No	100°C	Substrate : PET Film Color Change Part : Organic Colorants, Resin	Substrate : 20×70×0.2mm Color Change Part : φ11mm	100 pcs.	PLC0207-22
			Label	Yes			100 pcs.	PLL0207-22	
			Sheet	No			Substrate : 210×297×0.2mm Color Change Part : 190×290mm	5 sheets	PLC2130-22
		No.23 (Low)	Card	No	100°C	Substrate : PET Film Color Change Part : Organic Colorants, Resin	Substrate : 20×70×0.2mm Color Change Part : φ11mm	100 pcs.	PLC0207-23
			Label	Yes			100 pcs.	PLL0207-23	
			Sheet	No			Substrate : 210×297×0.2mm Color Change Part : 190×290mm	5 sheets	PLC2130-23

Sensitivity: The smaller size number in each series means higher sensitivity products, meaning color changes faster by lower power short time plasma process. The numbers of different series have no correlation.

★The gas types listed here are tested by Sakura Color Products and do not represent all applicable gas types, including the mixed gas.

*Specification and appearance of the products are subject to change without notice. Indicator colors in this catalogue are printed and may differ from actual colors.

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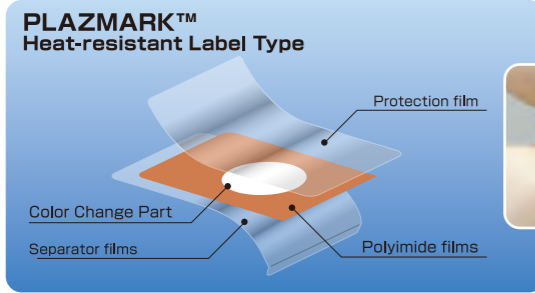
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Heat-resistant Label

Best for high temperature process

It has low outgassing rates and high heat resistance (200°C) composed of the newly developed inorganic color materials and polyimide substrates.

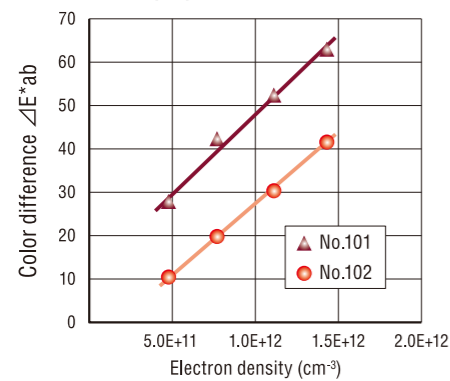


This type has a flexibility and an adhesion, as a result, you can evaluate easily plasma processing status.

2 sensitivity types are available

Correlation between color differences and electron density in plasma

[ICP (Ar)] Ar=10Pa, Power=60~200W, Time=90sec.



sensitivity	Color change vs plasma Density				
	Initial	4.8E+11	7.7E+11	1.1E+12	1.4E+12
High (No.101)					
Low (No.102)					

Color Changes by the Plasma of Various Gases

Initial	After plasma treatment					
	Ar	O ₂	H ₂	CF ₄	SF ₆	Cl ₂

2 sensitivity types are available

Series	The efficiency of color change		How to Use		Heat Resistance	Structure	Size	Qty / pack	Prod. NO.
	Processing Gases *	Sensitivity	Shape	Adhesion					
PLAZMARK™ Heat-resistant Label	Ar, O ₂ , H ₂ , CF ₄ , SF ₆ , Cl ₂	No.101 (High)	Label	Yes	200°C	Substrate : Polyimide Film Color Change Part : Inorganic Colorants, Resin	Substrate : 16mm×25mm×80μm Color Change Part : φ10mm	10 pcs.	PLL0203-101
		No.102 (Low)	Label	Yes				10 pcs.	PLL0203-102

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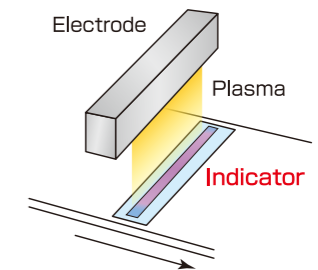
For Atmospheric Plasma

For Normal-pressure Process / For Cleaning Process

By a newly developed organic colorant, radicals in atmospheric plasma can be checked.

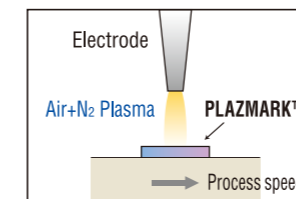
It is optimal for the check of large area treatments of atmospheric (normal-pressure) plasma process, PCB Industry, FPD Industry and surface modification of film.

It is applicable to UV cleaning and UV Ozone cleaning.



Color Changes by the Atmospheric Plasma of Various Scan Speed

2 sensitivity types are available

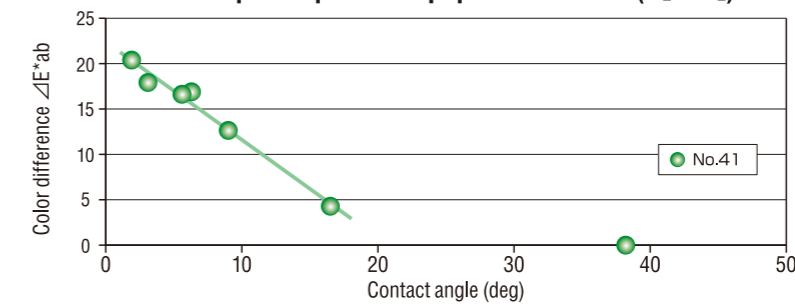


	PAT.P					
	Initial	300mm/sec	100mm/sec	60mm/sec	40mm/sec	25mm/sec
High sensitive type for high-speed transport No.41						
Normal sensitive type for low-speed transport No.42						

High density radical atmospheric plasma equipment (air +N₂)

Correlation between color differences and contact angle (Glass surface)

Atmospheric plasma equipment For FPD (N₂ + O₂)



Series	The efficiency of color change		How to Use		Heat Resistance	Structure	Size	Qty / pack	Prod. NO.
	Processing Gases *	Sensitivity	Shape	Adhesion					
PLAZMARK™ For Atmospheric Plasma	O ₂ , N ₂ , Air	No.41 (High)	long Label	Yes	100°C	Substrate : Clean Paper Color Change Part : Organic Colorant, Resin	Substrate : 300×35×0.2mm Color Change Part : 300×15mm	20 pcs.	PLL0430-41
			Sheet	No			Substrate : 210×300×0.2mm Color Change Part : 190×300mm	5 sheets	PLC2130-41
		No.42 (Low)	long Label	Yes	100°C	Substrate : Clean Paper Color Change Part : Organic Colorant, Resin	Substrate : 300×35×0.2mm Color Change Part : 300×15mm	20 pcs.	PLL0430-42
			Sheet	No			Substrate : 210×300×0.2mm Color Change Part : 190×300mm	5 sheets	PLC2130-42

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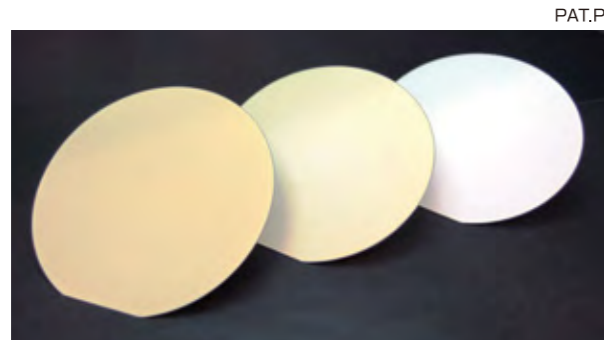
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Wafer Type

Best for wafer process

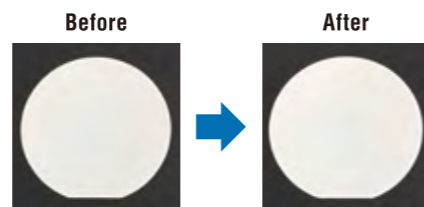


- The indicator is coated on the wafer surface so that it can be handled in the same manner as the real wafers.
- Evaluation of plasma uniformity is so easy.
- Low outgass, clean product.

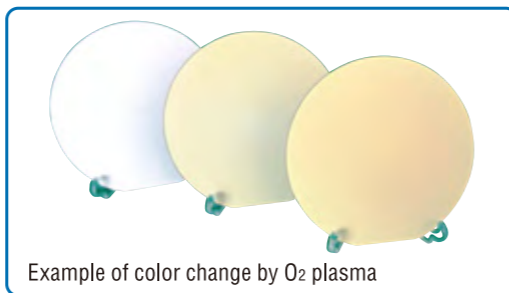
LINE UP

Ceramic Type (φ4inch / 6inch)

- Ceramics coat without organic materials enables heat resistivity up to 400°C, can be used in high temperature process.
- Clean product, good for LED or MEMS manufacturing process.
- Si and Sapphire Substrate available.
- The hue after plasma treatment differs per gas type.



Example of heat test
30min : 450°C
Sample : 4inch Si



Example of color change by O₂ plasma

Under Development



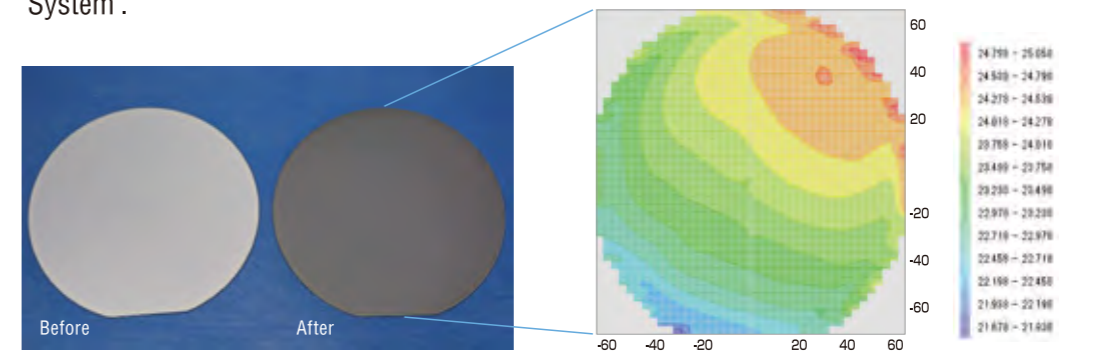
Metal Free Type (φ200mm / 300mm)

- Eliminate metal ingredient to the utmost level to achieve higher level of cleanness.
- Good for clean process, such as Si semiconductor front end process.

Wafer Type

Application for uniformity check

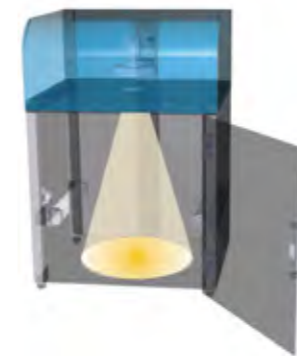
- The color difference can be quantified by utilizing a proprietary "Plasma Indicator Evaluation System".



Example of Ar gas Plasma

Example of evaluation by automatic mapping system

- Even a slight difference which is difficult to recognize by human eyes can be detected. The uniformity can be visually and numerically evaluated easily.
- It is so easy and quick.



This "Plasma Indicator Evaluation System" is the product of Otsuka Electronics Co.,Ltd

Features

- Up to 300mm wafer can be measured in less than 10sec.
- Max resolution : 1mm
- Easily quantify color difference in ΔE^*ab , ΔL^* , Δa^* , Δb^*

Specification

Series	The efficiency of color change		Shape	Heat Resistance	Structure	Size	Q'ty / pack	Prod. NO.
	Processing Gases *	Sensitivity						
PLAZMARK™ Wafer Type Ceramics	Ar, O ₂ , H ₂ , CF ₄ , SF ₆ , Cl ₂	—	Wafer	400°C	Substrate : Silicon	Diameter : φ4 inch	1	PLW100SI
					Coating : Inorganic	Coating thickness : 10 μm		
					Substrate : Sapphire	Diameter : φ6 inch		
					Coating : Inorganic	Coating thickness : 10 μm		
PLAZMARK™ Wafer Type Metal Free	T.B.D	T.B.D	T.B.D	T.B.D	Substrate : Silicon/Sapphire	Diameter : φ200mm/300mm	1	T.B.D
					Coating : organic, resin	Coating thickness : T.B.D		

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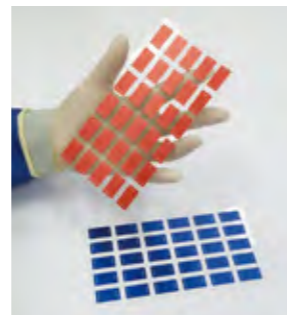
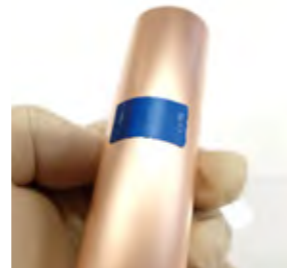
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For Desmear

Overview

It is possible to manage the plasma desmear process without the time-consuming weight measurement.

- It is optimal for the plasma desmear of the printed wiring board via hole.
- Compatible with O₂+CF₄ based mixed gas often used in plasma desmear.
- It can also be used for powerful plasma process with high power and long time where other PLAZMARK™ lineups will over range.
- It is a label type that can be stuck.
- Due to its flexibility, it can be stuck to a flexible substrate and transported by roll-to-roll plasma desmear equipment.



Product Line-up

- High sensitivity type No.61 (Red) = For mild desmear treatment
- Low sensitivity type No.62 (Blue) = For powerful desmear treatment

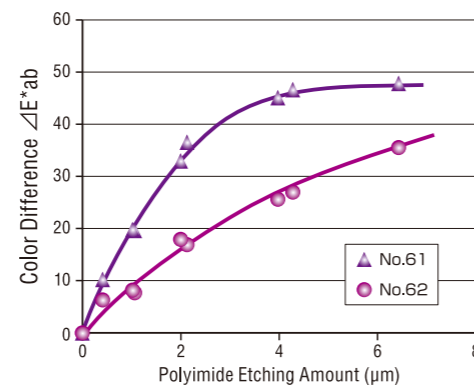
Color Changes by the plasma desmear

RF plasma equipment :
O₂+CF₄ gas (mixing ratio 10:1), 25Pa, 100W PAT.P

	Initial	Processing Time				
		5min	10min	20min	30min	50min
Polyimide Etching Amount*	—	1.0μm	2.0μm	4.0μm	6.0μm	10.0μm
High sensitivity type No.61						
ΔE*ab	0.0	19.2	33.1	49.7	54.5	55.6
Low sensitivity type No.62						
ΔE*ab	0.0	11.0	16.2	26.9	35.5	42.9

*Use single-sided FCCL (Flexible Copper Clad Laminate) and calculated as a test piece of 80 × 80 mm by weight measurement method with precision balance.

Correlation between color difference and polyimide etching amount*



Series	The efficiency of color change		How to Use		Heat Resistance	Structure	Size	Q'ty / pack	Prod. NO.
	Processing Gases *	Sensitivity	Shape	Adhesion					
PLAZMARK™ For Desmear	O ₂ +CF ₄	No.61 (High)	Label	Yes	100°C	Substrate: Composite material obtained by laminating aluminum foil and Polyethylene terephthalate(PET) Color Change Part: Organic Colorants Backing Film: PET	Substrate(Color Change Part) : 12mm×21mm×0.2mm ·With 30 pcs. of label for each backing film	120 pcs.	PLL0102-61
		No.62 (Low)							PLL0102-62

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PLAZMARK™ Line Up

Series	The efficiency of color change		How to Use		Heat Resistance	Structure	Size	Q'ty / pack	Prod. NO.		
	Processing Gases *	Sensitivity	Shape	Adhesion							
PLAZMARK™ For O ₂ Cleaning Old Name: Card Type"STANDERD"	Plasma generated mainly radicals like O ₂ plasma O ₂ , N ₂ , Air, CF ₄ , H ₂ , NH ₃ , (Ar)	No.1 (High)	Card	No	100°C	Substrate: PET Film Color Change Part: Organic Colorants, Resin	Substrate: 20×70×0.2mm Color Change Part: φ11mm	100 pcs.	PLC0207-01		
			Label	Yes				100 pcs.	PLL0207-01		
			Sheet	No				5 sheets	PLC2130-01		
		No.2 (Middle)	Card	No	100°C	Substrate: PET Film Color Change Part: Organic Colorants, Resin	Substrate: 20×70×0.2mm Color Change Part: φ11mm	100 pcs.	PLC0207-02		
			Label	Yes				100 pcs.	PLL0207-02		
			Sheet	No				5 sheets	PLC2130-02		
		No.3 (Low)	Card	No	100°C	Substrate: PET Film Color Change Part: Organic Colorants, Resin	Substrate: 20×70×0.2mm Color Change Part: φ11mm	100 pcs.	PLC0207-03		
			Label	Yes				100 pcs.	PLL0207-03		
			Sheet	No				5 sheets	PLC2130-03		
PLAZMARK™ For Ar Cleaning If "PLAZMARK for O ₂ Cleaning" can not be detected, please use this product	Plasma generated mainly ions like Ar plasma	No.21 (High)	Card	No	100°C	Substrate: PET Film Color Change Part: Organic Colorants, Resin	Substrate: 20×70×0.2mm Color Change Part: φ11mm	100 pcs.	PLC0207-21		
			Label	Yes				100 pcs.	PLL0207-21		
			Sheet	No				5 sheets	PLC2130-21		
		No.22 (Middle)	Card	No	100°C	Substrate: PET Film Color Change Part: Organic Colorants, Resin	Substrate: 20×70×0.2mm Color Change Part: φ11mm	100 pcs.	PLC0207-22		
			Label	Yes				100 pcs.	PLL0207-22		
			Sheet	No				5 sheets	PLC2130-22		
		No.23 (Low)	Card	No	100°C	Substrate: PET Film Color Change Part: Organic Colorants, Resin	Substrate: 20×70×0.2mm Color Change Part: φ11mm	100 pcs.	PLC0207-23		
			Label	Yes				100 pcs.	PLL0207-23		
			Sheet	No				5 sheets	PLC2130-23		
PLAZMARK™ For Atmospheric Plasma	O ₂ , N ₂ , Air	No.41 (High)	long Label	Yes	100°C	Substrate: Clean Paper Color Change Part: Organic Colorant, Resin	Substrate: 300×35×0.2mm Color Change Part: 300×15mm	20 pcs.	PLL0430-41		
			Sheet	No				5 sheets	PLC2130-41		
		No.42 (Low)	long Label	Yes	100°C	Substrate: Clean Paper Color Change Part: Organic Colorant, Resin	Substrate: 300×35×0.2mm Color Change Part: 300×15mm	20 pcs.	PLL0430-42		
			Sheet	No				5 sheets	PLC2130-42		
		PLAZMARK™ Heat-resistant Label	Ar, O ₂ , H ₂ , CF ₄ , SF ₆ , Cl ₂	No.101 (High)	Label	Yes	200°C	Substrate: Polyimide Film Color Change Part: Inorganic Colorants, Resin	Substrate: 16mm×25mm×80μm Color Change Part: φ10mm	10 pcs.	PLL0203-101
				No.102 (Low)						10 pcs.	PLL0203-102
PLAZMARK™ Wafer Type Ceramics	Ar, O ₂ , H ₂ , CF ₄ , SF ₆ , Cl ₂	—	Wafer	—	400°C	Substrate: Silicon Coating: Inorganic	Diameter: φ4 inch Coating thickness: 10μm	1	PLW100SI		
							Diameter: φ6 inch Coating thickness: 10μm	1	PLW150SI		
							Substrate: Sapphire Coating: Inorganic	Diameter: φ4 inch Coating thickness: 10μm	1	PLW100SA	
								Diameter: φ6 inch Coating thickness: 10μm	1	PLW150SA	
PLAZMARK™ Wafer Type Metal Free	—	T.B.D	T.B.D	T.B.D	Substrate: Silicon/Sapphire Coating: organic, resin	Diameter: φ200mm/300mm Coating thickness: T.B.D	1	T.B.D			
PLAZMARK™ For Desmear	O ₂ +CF ₄	No.61 (High)	Label	Yes	100°C	Substrate: Composite material obtained by laminating aluminum foil and Polyethylene terephthalate(PET) Color Change Part: Organic Colorants Backing Film: PET	Substrate(Color Change Part) : 12mm×21mm×0.2mm ·With 30 pcs. of label for each backing film	120 pcs.	PLL0102-61		
								No.62 (Low)			120 pcs.

Sensitivity: The smaller size number in each series means higher sensitivity products, meaning color changes faster by lower power short time plasma process. The numbers of different series have no correlation.

★The gas types listed here are tested by Sakura Color Products and do not represent all applicable gas types, including the mixed gas.

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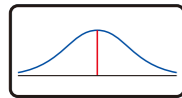
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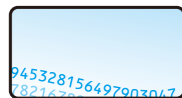
How to use



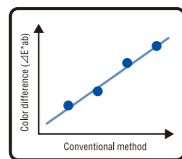
- As a checker for plasma process
To visually confirm by the color change whether the process was completed as expected.



- For a uniformity evaluation
By using a sheet type or multiple card or label type PLAZMARK™s, uniformity in a surface can be visually checked by a gradation of color changes.



- How to evaluate the color change value
The color change can be quantified by spectrophotometer, colorimeter or color-difference meter, which are commonly available in the market. There is no peripheral tester proprietary for the PLAZMARK™.



- Replacement and coexistence with conventional ways
Customers are requested to confirm if or not the measurement range of conventional methods such as contact angle or etching amount measurement and the range of color change are meeting. As the range of color changes depends on each customer's actual usage condition (gas type, gas flow, time, power, etc.), only customer can test and confirm it. If the measurement ranges are meeting, then the number measured by the conventional methods can be converted to color difference, by preparing a calibration curve.

To select the PLAZMARK™

- Wide variety of PLAZMARK™ are now available to meet customers' needs. Choose from different types, sensitivities and shapes per your application. Following is a simple tip how to find your best product.
- Type
Process up to 100 degree C: try Cleaning types or Atmospheric Plasma type
Over 100 upto 200 degree C: use Heat resistant label
Over 200 degree C: contact us
- If you cannot tell which one is good for you, under 100 degree C, try O₂ cleaning #1 which can be most commonly used and has high sensitivity.
- For sensitivity, please try higher one first, and if the color difference is saturated, then consider the less sensitive one next.
- Shape shall be selected per your purpose. To check uniformity, the sheet may be best.
- To find your best PLAZMARK™, get free trial samples from us. Request for samples, or any other inquiry, send e-mail to sjk@craypas.co.jp

NOTICE

CAUTION IN USAGE

- Do not deform the color change part such as cutting or bending. The efficiency of color change and/or durability may deteriorate.
- Use at lower than heat resistance temperature of each product.
- The efficiency of color change is different on your plasma equipment or your product to be treated.
- This product is designed to be used in a vacuum. However it is not free from out-gas.
- Inquire carefully into the possibility of contamination of your plasma equipment or object to be treated before to use this product.
- This indicator changes color by surface reaction. Therefore, in case of CVD process, color change may not occur or the level of color change cannot be checked. Under such condition, customers are kindly requested to consider other operation, for example, just to test the plasma condition only by using a carrier gas only.
- Inquire to us when to use this product on an extraordinary condition.

LABEL TYPE

- Wipe out water, oil, dust or any other objects and clean up the area where the indicators are supposed to be attached.
- Please make sure to put the label type PLAZMARK™ with no air for uniform color change.

HEAT-RESISTANT SERIES

- The indicator of this series has a characteristics of chronological color change after plasma process and is not recommended to keep as a sample or evidence. Customers are requested to record the data of color change meter, as necessary. Please refer to the specification sheet for the time period of stable measurement.

STORAGE & LIFE

1. Store avoid direct sunlight, high temperature (Recommended 35 °C below) and high humidity without unsealing or with resealing.
2. Life of the product is displaying the product packaging, at the above-mentioned conditions. The color change capability may deteriorate earlier than the life time if it is kept unsealed.
3. Store separately from acids, alkalis, reducing agents and other reactive substances. The indicator may change color or its capability and durability may deteriorate by such reactive substances despite no visually change.

OTHERS

- The indicator card or label does not include any toxic substance. Dispose as industrial wastes accordingly to self-government rules

Sakura Color Products Corp. has more than 90 years of history, working around colorants, and has been carrying on the development of new technologies and new products, such as new drawing and writing materials, indicator inks, industry purpose markers, etc.



The technologies in the colorants have enabled Sakura Color Products Corp. to continue releasing the new products to meet the needs of its era for 90 years.

Not only the colorants such as pigments and dyes, but also their combination with the vehicle, water and solvent has made it possible for us to satisfy various requirement from the valued customers.

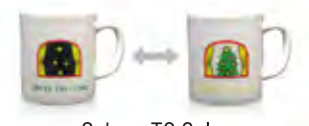


In the field of markers, we have "Solid Marker", a solid paint which is now indispensable to the industries. Yet we are making another steps forward.

"Low Halogen Marker" which has less halogen or other impurities, and "Metal Marker" which are best solution for shipyards, are the remarkable examples of its kind.



Sterilization Indicator



Sakura TC Color



Plasma Indicator™
PLAZMARK™

Also, Sakura Color Products Corp. has been in the medical industries for long time by introducing "Sterilization Indicator", which is another application of its colorant technologies. Medical equipments are sterilized with the Sterilization Indicator and the indicator tells by color change whether the equipments were properly sterilized as they should be. As the method of sterilization evolves, Sterilization Indicator also evolves from time to time.

And the newest application of our colorant technologies and know-how is the Plasma Indicator™, which is expected to be used in the wide varieties of industries, not only the electronics, but also automobile, aero space and materials.

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History

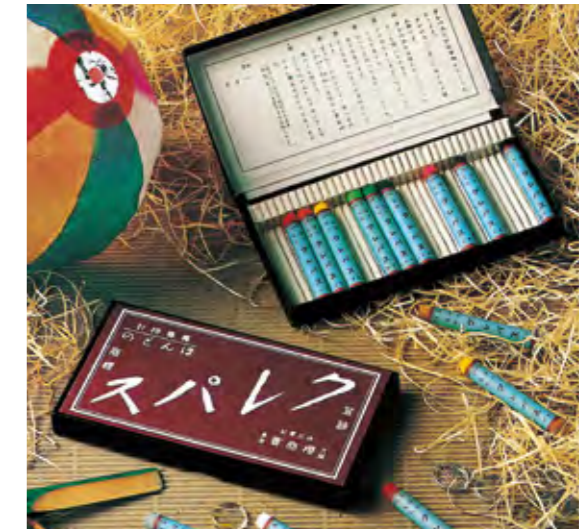
Corporate History

Year	History and Development of Sakura
1921	Foundation of the company.
1925	Invented "Cray-pas" (oil pastel) and filed the patent globally.
1948	Sales Network (Agent) all over Japan has been established.
1950	Invented and launched Semi-transparent Water Color.
1961	Invented and launched Wood block ink.
1969	Launched "Sakura Sign Pen", "Plastic Pen" and "My Name". Invented and launched a Slid Mechanical Pencil.
1973	Released "Coupy Pencil", a plastic-type crayon.
1978	Invented and launched "Solid Marker", a tough industrial marker.
1982	Invented and launched "Pigma", a world new sign pen by pigment ink.
1984	Invented and launched "Ballsign", a water-based gel ink ball point pen.
1986	"Sakura of America" has been established in Hayward, California.
1990	"Pigmax", a water-based opaque pigment marker was introduced.
1991	Acquired the Dutch fine art material "Royal Talens BV" and Sakura became the world No.1 largest maker of art materials. As commemoration of 70th Anniversary of foundation, Osaka head office has been re-built and also started the first annual "All Japan amateur art grand prize contest".
1993	"Shanghai Sakura Stationery Co., Ltd." has been established in Shanghai China.
1995	As Tube revolution," Lead tube" of Water color has been changed to "Polythene tube". Also as "Laminated tube" has been introduced.
1997	Acquired the Dutch pencil maker "Bruynzeel BV" and Sakura became the only company that can produce and sell full range of color art materials from color pencils to oil color.
1998	Started the series of new products "Eco-feel" based on Ecology.
2000	"Japanese patent office governor prize" was awarded to the invention of special Gel ink for Ballsign. Osaka Factory acquired certification of environmental management "ISO14001". Released "Washable Indian Ink". New Business, "Memorabliart" (Scrapbooking) started.
2001	New Business, "Educe" (Mail-order business) started.
2002	Established "Talens Chile" (Joint venture Royal Talens & Artel in Santiago,Chile) and also established "Shanghai Sakura International Trading Co., Ltd." in China.
2003	Launched "Glaze", a 3D gloss color pen.
2004	Released "Mat Water Colors Multi" suitable not only on paper but on wood and plastic.
2006	New Business, "Corusupport" (Dispatch art teachers to schools) started.
2007	Established "Shanghai Talens Fine Art Material Co., Ltd." in Shanghai (Joint Venture with Royal Talens).
2008	"Artist Material Suppliers Co., Ltd." has been established in Japan to supply fine art & color products as whole-seller. "Shanghai Talens" acquired certification of quality management system "ISO9001".
2013	"Osaka Factory" & "Kagoshima Factory" acquired certification of quality management system "ISO9001".

Corporate Motto

Contribution to Education and Culture

Its historic origin is our invention of Cray-pas (oil pastel) as a new coloring material in 1925. Since then, we have been offering color products based on the needs of teachers and schools for development of education and culture till now.



Corporate Profile

Company name SAKURA COLOR PRODUCTS CORPORATION

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Fax : +81 6 6910 8834
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ISO 9001:2008 certificated
ISO 14001:2004 certificatedSGS



■ **KAGOSHIMA FACTORY**
2834-1 Roku Aira-cho, Kanoya, Kagoshima, JAPAN

ISO 9001:2008 certificated
ISO 14001:2004 certificatedSGS



■ **SHANGHAI SAKURA STATIONERY CO., LTD.**
9F/H1, Shanghai Hi-Tech King World No.668,
Beijing East Road, Shanghai, China 200001

ISO 9001:2008 certificated

President NISHIMURA Hikoshiro

Establishment 1921

Capital 90 Million Yen

Employees 1,200 (worldwide consolidated basis)

Group SAKURA COLOR PRODUCTS OF AMERICA, INC.
bruynzeel-sakura b.v.
Royal Talens B.V.
SHANGHAI SAKURA INTERNATIONAL TRADING CO., LTD.