

A Materials Design House And More





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Display Materials

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Key Raw Materials

- Functional Monomer
 - Dianhydride
 - Monoacrylate
- Specialty Polymer
 - Modified Acrylate
 - Modified Siloxane
 - High-Purity Polymer

Instrument Analysis





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Mission

Products

for Customized

Best Solution Provider

Vision To Be a Leading Company for Materials Innovations

4.513

4,296

4.531

About DAXIN

Daxin Materials Corporation is a design house for chemical materials. We develop customized products including specialty chemicals for semiconductor ,display, and key raw materials. With our value in fundamental knowledge, diverse talents, and expertise in materials design, equipment technology and process development, we provide innovative and value-added solutions for our customers.

Founded in 2006, Daxin is continuously pursuing innovation, ambition and sustainability, aiming to become an advanced foundry for materials innovations.

Foundation	July 12th, 2006
Paid-in capital	1.03 billion NTD
Chairman	Dr. Cheng-Yih Lin
President	Jeremy, Tsung-Hsing Kuo
Mission	To Be a Leading Company for Materials Innovations
Headquarters	R&D Center, Taichung, Taiwan
Employees	380 (RD >50%)
Product Domain	 Specialty Chemicals for Semiconductor, Display, and Key Raw Materials Instrument Analysis Services
GOLD PANEL	Polyimide wins "Gold Panel Awards 2010"

Research & Development

Core Technologies and Product Development

All the innovations are the extension of fundamental science. From the basic photochemistry to color simulation, molecular simulation, dispersion science, surface chemistry, organic and inorganic hybrid materials design, monomer & polymer synthesis/formulation, and precision manufacturing and advanced purification technologies, Daxin links all these technologies to provide superior and customer-oriented products in different Semiconductor and Liquid Crystal Display (LCD) fields.



Best Solution Provider for Customized Products

To contribute to our customers' success, we always keep close relationships with clients to design products as desired. Combining our strength in materials expertise and One Stop Shopping strong manufacturing ability, we aim to be the best solution provider worldwide. Engineering Supports in Production Ramp-up **Customized Products** Customers Cutting Edge Performance and Cost Effectiveness Quick Responses and Services

Consistent Innovation & Intellectual Property Protection

To defend our innovation and ensure the right for production, we are working to improve intellectual property protection and enforcement for our company in markets around the globe. Our patents include all ranges: from specific chemical formula, better solution to current technology, to the improvements of products. Until 2022 the approved patent license number was more than 302, the application number was more than 433. With intellectual property protection, it gives us exclusive right granted for invention and protects our corporate value in the market.

Semiconductor Materials

Photosensitive Dielectric/Passivation

Dielectric for Redistribution Layer

Applications

Varnish-type photosensitive dielectrics for the advanced chip packaging (WLP/PLP) are designed, which could be spin or slit-coated into thin film on the substrate and is photosensitive, able to be patterned into multi-layer redistribution layer (RDL). Low curing temperature, excellent Cu adhesion and electric properties are achieved for the varying chip applications.





Features of General Type

- Low temperature curing
- O Excellent Cu adhesion
- O Low CTE
- High resolution
- Excellent chemical resistance



⊢a	n-c	Jut	PC	P



Features of Low Dk/Df Type

- Low temperature curing
- O Low Dk/Df
- High resolution
- Excellent chemical resistance

Product Name		RDLT series			RPH series
Features		Negati Low curing PS	ve-type temperature SPI	Negative-type Low Df PSPI	Positive-type PSPBO
Non-Volatile Matter Content	wt%	~40	~40	~40	~25
Curing Temperature	°C	230	180	230	250
UV dosage (i/g/h line)	mJ/cm ²	230~300	230~300	200~250	150
Young's Modulus	GPa	2.13	2.04	2.03	1.9
Elongation (RT)	%	50	40	60	12
T _g	°C	230	200	208	269
CTE(50~100°C)	ppm/K	48.5	48.1	60.4	40.1
Dk/Df (1GHz)	-	3.45/0.024	3.35/0.022	3.06/0.0072	3.01/0.020
Reliability * HTS 175°C 168hr * HAST 96hr * TST 200 cycles	-	5B	5B	5B	5B

Buffer Layer

Applications

Daxin's photosensitive dielectrics, which possess excellent mechanical properties and thermal stability, can be used as buffer layers for the front-end wafer process. Buffer layers can protect low K dielectric layer from stress induced by package processes and increase the reliability of ICs. Also, its high resolution can meet the requirements of low dimension connections and simplify the manufacturing, which can increase the yields and performances of products.



Features

○ High resolution	0
 Excellent mechanical properties 	0
 Excellent thermal stability 	

Specifications

Product Name		
Viscosity	cP	
Non-Volatile Matter Content	%	
Young's Modulus	GPa	
Tensile strength (at break)	MPa	
Elongation (at break)	%	
CTE(50~175°C)	ppm/K	
T _g	°C	
Td (5% weight loss)	°C	
Shrinkage	%	
Aspect ratio	-	



Excellent Cu adhesion Low CTE

IMPI series	
1000~3500	
15~40	
4.0~5.0	
150~200	
20~40	
20~35	
280~310	
300~320	
30~50	
0.95~1.5	

Laser Release Layer

Multi-functional Release Layer

Applications

Temporary bonding of wafer to glass carrier has emerged as a viable method for various electronic device processing. Laser debonding enables the use of laser release layer (RL) that can withstand high temperatures above 300°C. The processed devices are finally debonded and separated from the carriers easily.



Features

- \odot Excellent thermal resistance and stability over 300° C
- O Easily stripped by laser
- O Applicable under various laser wavelength (308/355/532/1064nm) with high absorption
- Optical alignment (Tunable IR absorption or transmittance)

Specifications

Product Name			LRA-2 series	Remarks
Field of Applications		Semiconductor		
Features			High laser absorption efficiency IR absorption	
Versieh	Non-Volatile Matter Content	wt%	10	Customized
varnisn	Viscosity	ср	100-200	Customized
	Coating Method	-	Slit or Spin	
Process Conditions	Pre-bake	°C ; min	90;10	
	Post-bake	°C ; min	250;30	
Thermal Properties	Td (1%Loss)	°C	~300	TGA
Optical Properties	Transmittance	%	<2	1µm
	b*	-	>2	
Chemical Resistance	Stripper Aqua Regia Metal Etchant	-	NO damage	

Release Layer For Transfer Bonding Applications

It is used in temporary bonding & debonding process for wafer/panel level packaging (WLP/PLP). It offers stable adhesion through subsequently physical or chemical processes. It can be debonded by laser easily.



Product Name			DAA-series	Remarks
Film Thickness		μm	5~35	
	Pre-bake	°C ; min	50;5 90;5 150;30	
	Bonding Temperature	°C	150~180	
Process Conditions	Bonding Pressure	kg/cm ²	5	
	Bonding Time	min	5	
	Post-bake	°C ; min	230;30	
Adhesion		N/mm ²	2	Pull test @glass
Thermal Brenerties	CTE	ppm/K	7~8	40~70°C
Thermal Properties	Td (5% weight loss)	°C	290	By TGA
Chemical Resistance	Cross-Cut Test	-	5B	@Glass Stripper, 80°C, 10min
Laser Debond Wavelength		nm	355~1064	
Cleaning Method			Plasma	



Protection Materials

Temporary Protection Layer

Applications

Temporary Protection Layer is applicable in die singulation process, to protect device surface by spincoating on the wafer, capable of avoiding die chipping or defects during wafer dicing and grinding. Complete removal of Temporary Protection Layer is achieved by wet cleaning after process.



Specifications

Product Name	TPL-series		
Field of Applications	Advanced Packaging		
Varnish	Viscosity	cP	1000~5000
Vanish	Non-Volatile Matter Content	wt%	10~40
Process Conditions	Coating Method	-	Spin/Slit
	Pre-bake	°C ; min	90;10
	Post-bake	°C ; min	230;30
Thermal Properties	T,	°C	250
Mechanical Properties	Modulus	GPa	3
	CTE	ppm/K	65

Taping protection layer

Applications

It is used in transfer bonding & grinding processes for wafer back-end processes. This material can protect device surfaces and prevent residue of temporary adhesive which may caused electrical problems. This protection layer can be removed by wet cleaning easily.



Specifications

Product Name		PRO-series	Remarks
Field of Applications		Advanced packaging	
/iscosity	cP	2~50	
Non-Volatile Matter Content	wt%	2-5	
Baking condition	°C ; min	120~140;5	
Nater Resistance		No film loss	10min soaking @25°C
Cleaning Method		Wet cleaning	2.38% TMAH @25°C
Cleaning Time	sec	<10	Thickness=50~100 µm



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De-taping & Wet cleaning

No residue on the wafer surface

Passivation Layer

Applications

Passivation layer is used as an effective strategy to protect the active semiconductor surface from the impact by the surrounding environment. Moreover, the feasibility of laser patterning can be retained.



Specifications

Product Name		PL series
Appearance	-	Transparent/Black
Non-Volatile Matter Content	wt%	10-20
Curing Temperature	°C	230
Young's Modulus	GPa	2~4
Elongation (RT)	%	50~60
T _g	°C	230-250
Td 5% Weight Loss	°C	>400
CTE (50~100°C)	ppm/K	30-50

High-Purity Specialty Chemicals for Wet Clean Process

Strippers Removers

Applications

Daxin's formulated strippers and removers are designed for effective removal of photoresist (PR) or bottom anti-reflection coating (BARC) with high protection and compatibility to metal or silicon congaing substrate, which are applicable in advanced IC process.



Features

- O Effective removability of thick resist
- Effective removability of PERs/PARs
- Low metal etching rate
- O Non-NMP/DMSO solvent system
- O High flash point
- High purity (metal ions<1ppb)





Removers

Applications

With the development of new-generation process technologies, the 3D structures in semiconductor processes are constantly evolving, and the materials in integrated circuits are becoming more complex.

To address the inter-mixing between different materials and the development of selective deposition structures, Daxin provides customized removers to meet the needs of microstructure fabrication, which can include the removal of metal-organic materials and the by-products formed during the dry etching process.

Features

- High wettability
- High selectivity
- Customized materials design
- Low inter-mixing effect
- High purity/Low metal ions



Selective Etchants

Applications

The specifications and purity of wet chemicals are continuously increasing due to the leading technology. Daxin provides a variety of solutions for different etch selectivity between materials.

Daxin's selective etchants can demonstrate high metal loading and can be applied during the reclaim mode process. Without environmentally hazardous substances, not only the process cost but also chemical waste can be reduced.

Furthermore, various advantageous properties such as low undercut and high uniformity can be achieved by crystal orientation-dependent etching so that it can be applied to fine-pitch packages.



High-Purity Specialty Chemicals for Nanolithography

High-Purity Solvent

With advanced purification technologies, Daxin provides high purity solvent which can be used in the semiconductor/display industries and fulfills the needs of low metal ions and low particle content.

Topcoat

Applications

Daxin provides topcoat materials for immersion lithography, which can prevent photoresist from composition change due to substances dissolving into liquid (ex: water). In addition, topcoat materials can used for refractive index adjustment. A variety of specialty chemicals for nanolithography process are under development.

Features

- Good water-repellent
- Good dissolution in developer
- No intermixing and dissolution with photoresist



Specifications

Product Name			DTC-series	Remarks
Versieh	Non-Volatile Matter Content wt%		2.5	Customized
Varnish	Viscosity	сР	0.8	Customized
Process condition	Pre-bake	°C ; min	80;1	
Film Properties	Refractive Index at 193 μm	-	1.53~1.60	
	Extinction Coefficient at 193 μm	-	<0.01	Thickness=500Å Customized
	Receding Angle	degree	70~75	
	Dissolution Rate	µm/sec	200~400	2.38%TMAH



Design House for Chemical Materials

Display Materials

LCD Materials

Black Matrix Resist

Applications

Black matrix is arranged in the form of stripes, grids or mosaics between color patterns of RGB in color filter for LCD panel. This product is designed for high light-shielding properties to increase the contrast ratio of LCD panel.

Features

- High optical density
- High coating uniformity, high sensitivity, excellent adhesion, excellent developing performance
- Excellent reliability in heat, light, and chemical resistance with good shelf-life
- $\bigcirc\,$ New: Black matrix resist for LCD panel with high resolution



Specifications

Product Name			ABK406X	ABK408X	Remarks
Field of Application		Full High Definition	Ultra High Definition		
Features			Standard	High Resolution High Resistance	
Viscosity		cP	3.0±0.5	3.0±0.5	
Non-Volatile Matter (Content	wt%	13~15	13~15	
Line Width		μm	6~30	4~8	
Remaining Film Thic	kness	%	75~85	75~85	After PB/Before PB (PB: 230°C×20min)
	Pre-bake	°C;sec	70~120;90	70~120;90	
Expos Process Conditions Devel	Exposure Energy	mJ/cm ²	40~100	45~100	
	Development		KOH/Buffer	KOH/Buffer	At 23°C-25°C
	Post-bake	°C ; min	230;20	230;20	
Optical Density		1/ µ m	4.5~4.0	4.0~3.0	
Surface Resistivity		Ω/\Box	1×10°	>1×10 ¹⁴	
	IPA				After25°C Dip 5min +120°C ×2min
Chemical Resistance	NMP	$(OD_{Before}\text{-}OD_{After})/\mum$	<0.1	<0.1	After25°C Dip 5min + 240°C X 15min
	y-buthyrolactone				
Weight Loss		%	<3	<3	After PB + 230°C \times 60min by TGA
Pressure Cook Test			5B	5B	After PB + 230°C ×180min 121°C, 2atm, RH100% for 24hr



Zoom in

Black Matrix

ITO

Red

Glass Substrate

Photo Spacer

Applications

Via adjusting electric field between two glass substrates, the arrangement of liquid crystal materials can be controlled to make LCD exhibit expected pictures. Photo Spacer acts as a key component in TFT LCD which is used to maintain the cell gap's uniformity.

Features

- High sensitivity
- Good coatability
- High elastic recovery ratio
- O Excellent mechanical properties
- O New:

High resolution photo spacer for fast response panel Applicable for ultra-high LCD cell thick panel



SA028 mask size: 20*20)

Product Name			Normal PS	Low Cell Gap-HPS	Ultra High PS
Field of Applications			TN/VA/PSA/COA	AFFS	3Ddisplay/electro-chromic glass
Features			Widely used in different process conditions Wide LC margin, Excellent pressure resistance	 Applicable in fast response high-resolution screens Stable with low volatility 	 High aspect ratio, thickness can be achieved tp 45 μ m High taper angle
	Viscosity	сP	4.3±0.3	3.25±0.3	5.1±0.3
	Non-Volatile Mater Content	wt%	18.7±0.5	23.2±0.5	23.3±0.5
Physical Properties	Remanent	%	88.5±2	86±2	90±2
	Resolution μ m		10*10	5*5	20*20
	Height diff. between main & sub PS	μm	0.3~0.7	0.3~0.5	-
	(460nm) Transmittance	%	>96	>96	>96
Optical Properties	(540nm) Transmittance %		>97	>97	>97
Sensitivity		mJ	40~50	40~50	70
	Hardness		5H	8H	6H
Mechanical Properties	Recovery Ratio	%	>88 (40 mN, mask size: 20×20µm)	>80 (40 mN, mask size: 10 × 10 µ m)	>90 (50 mN, mask size: 28 × 28 µ m)
	Adhesion Test		5B	5B	5B
Electrical Properties	Dielectric Constant		3.7	3.7	3.7
Liectrical Properties	Voltage Holding Ratio	%	>95	>95	>95
Chemical Resistance	Heat water/KOH/TMAH/IPA/GBL		Pass	Pass	Pass



PI Alignment Layer (PSA-mode)

Applications

The main function of Polyimide alignment film material is to control the orientation of liquid crystal molecules and provide a pretilt angle for the liquid crystal. The PSA-mode provided by Daxin Materials is mainly used in the alignment film material for TVs, enabling the liquid crystal components to have excellent performance and wide processability conditions.

Features

- No image sticking
- High VHR and excellent reliability
- Stable pre-tilt angle
- Drop mura free
- O Excellent adhesion
- Excellent coating properties



Specifications

Product Name		DA-90X	DA-63X	DA-91X
Field of Application		Nor	Pioneer ESG	
Features		1. Drop Mura Free 2. No Image Sticking	Suitable for PFA Type PSA-LCD	Low hard bake temperature
Viscosity	cP	6~25	6~25	14~22
Non-Volatile Matter Content	wt%	3.0~7.0	3.0~7.0	6.0~7.0
Water Content	ppm	<2000	<2000	<2000
Ionic Impurities	ppb	<500 (Na, K, Cu, Fe)	<500 (Na, K, Cu, Fe)	<500 (Na, K, Cu, Fe)
Pre-Bake	°C ; min	70~90;2	70~90;2	70~90;2
Post-Bake	°C ; min	210~230;15~60	21~230;15~60	180;30
Pre-tilt Angle	0	88~90	88~90	88~90
Voltage Holding Ratio, VHR	%	>90	>90 (Normal) >80 (After PCT 12hr)	> 90
Ion Density	рС	<5000	<5000	<5000
Residue DC	mV	<100	<100	<100
Volume Resistivity	$\Omega\cdot\text{cm}$	10 ¹¹ ~10 ¹³	10 ¹¹ ~10 ¹³	10 ¹¹ ~10 ¹²

PI Alignment Layer(FFS-mode)

Applications

The main function of Polyimide alignment film material is to control the orientation of liquid crystal molecules and provide a pretilt angle for the liquid crystal. The FFS-mode provided by Daxin Materials is mainly used in the alignment film material for TVs, enabling the liquid crystal components to have excellent performance and wide processability conditions.



- D, (TO) (
- Faster charge releasing
- No image sticking
- Suitable for IJP process

Specifications

Product Name	DA-110X	
Field of Application	Normal type	
Features		 Good Rubbing Resistance High transmittance
Viscosity	cP	40~45
Non-Volatile Matter Content	wt%	6.5~7.5
Water Content	ppm	<2000
lonic Impurities	ppb	<200 (Na, K, Cu, Fe)
Pre-Bake	°C;S	80
Post-Bake	°C ; min	230;30
Exposure dose	mJ/cm ²	-
Pre-tilt Angle	٥	1.5~3.0
Voltage Holding Ratio, VHR	%	>90
Ion Density	рС	<10000
Flicker-RDC	-	Faster charge releasing Free image sticking
Volume Resistivity	Ω·cm	10 ¹³ ~10 ¹⁴

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- O Photo-alignment
- O High Transmittance
- Suitable for IJP process

DA-160X	DA-115X
High-wear resistant type	Photoal ignment type
1. Faster charge releasing 2. No Image Sticking 3. Inkjet Printing	1. High transmittance 2. Excellent Printing Performance and Electric Properties
11~13	6~9
2.5~3.5	2~4
<2000	<2000
<200 (Na, K, Cu, Fe)	<200 (Na, K, Cu, Fe)
100;130	80
230;20	230;30
-	200-500
1.5-2.5	<1.0
>90	>90
<10000	<10000
Faster charge releasing Free image sticking	Faster charge releasing Free image sticking
10 ¹² ~10 ¹³	10 ¹² ~10 ¹³

Thermal Overcoat

Applications

Thermal overcoat is applied to IPS-like panel and acts a transparent planarization layer on Color resists (RGB) and Black matrix (BM), protecting color filter and providing flat surface to ensure subsequent process uniformity.

Features

- High transparency
- Excellent planarization ability
- Good heat and chemical resistivity
- O Low UV transmittance, which protect RGB from UV damage
- High crosslink ratio



Specifications

Product Name			DTOCVS	DTOCV6	Remarks
Field of Applications		IPS model with Photo Alignment Pl	IPS model with Rubbing type PI		
Features			high hardness good oremical resistiviy	excellent pInanarization ability	
	Flatness (OC THK=1.6 μ m)	μm	0.37	0.25	Max-Min (∆Hx)
Basic Properties	Remanent	μm	0.17	0.10	∆RGB
		%	97.6%	92.3%	230°C/30min
	Adheston (on glass)		4~5B	5B	PCT121°C/2atm/12hr
Machanical Properties	Pencil Hardness	-	6H	5H	@765g
		%	99.8	99.7	@400 μm
Optical Properties	Transmittance	%	46.9	71.1	@313 µm
Properties	%	9.6	33.8	@254 μ m	
	704	%	0.25	0.17	Water Absorption
Heat& Chamial	IGA weight loss	%	0.20	0.25	Out-gassing
Resistance NMP elution test	-	0.000	0.002	OC on Red Resist@520 μm	

Cu/Mo Etchant

Features

- O Hydrogen peroxide type is environmental friendly
- Good stability for very high copper loading (> 10k ppm)
- Good etching uniformity
- Good taper profile after etching.



Cu Stripper

Features

- Non-Corrosive to Cu, Mo, Al, ITO and IGZO
- Water compatible, favorable for post-clean process
- Regenerable and environmental friendly
- Low toxicity, no reproductive toxicity





Specifications

DE-series Test Items Unit Remarks Max.Cu Loading >10k ppm Etching Rate Å/min 4,000~6,000 35°C 3.7~4.4 pH value H_2O_2 Concentration 6~8.5 % 30~70 Taper

Test Items	Unit	GD-series	Remarks
Appearance		Colorless to light yellow	
Density	g/cm ³ 1.062~1.082		
pH value		11	15% aq.
Solubility		Soluble in water	
Operating Temp.	°C	40~50	

Touch Panel Materials

Photo Overcoat

Applications

Photo overcoat is applied in touch sensor a dielectric layer and a insulating layer. Photo overcoat contains good properties of insulation, adhesion, chemical resistance and hardness.

Features

- Optical properties: high transparency and good color hue
- Mechanical properties: good adhesion to bare glass, ITO and metal substrates; good hardness
- \bigcirc Electrical properties: excellent insulating properties
- Chemical properties: excellent chemical resistance
- Process window: easy to coat and high sensitivity



Cover Lens (Glass / Plastic)

Specifications

Product Name				POCA	Remarks
Field of Application			General POC		
				Slit & Spin Type	
Features				Spin or Spray Type	
Viscosity			cP	4~7±1	At25°C, 60rpm
Non-Volatile Matter (Conten	t	wt%	18~25±1	
	Pre-	bake	°C;sec	90~110 ; 90	
	Exp	osure Energy	mJ/cm ²	50~100	
Process Conditions	Mas	k		Soda-lime & Quartz	
	Dev	elopment		КОН	
Post-bake		°C ; min	220~240;30		
Transmittance at 400	nm		%	>95	UV visible (Carry 300)
Refractive index at 6	33nm			1.51~1.52	MP100-M
Surface Resistivity			Ω/ 🗆	1×10 ¹⁴	
Dielectric constant				4.3	f=10 KHz, 1V
Hardness				3H	JIS pencil hardness
Shrinkage			%	88±2.0	250°C x 60min
Remaining Film Thickness		%	85±3.0 (100mJ/cm2)	THK ratio of before/ after Hard-Bake	
Chemical Resistance			5B	ASTM-D3359 After Aqua Regia/ Al Acid/Oxalic Acid 5% NaOH	
		Adhesion on Glass		5B	ASTM-D3359
HT/HH(65°C/90%, 24	0hrs)	Adhesion on ITO			
		Adhesion on Metal		4B	

Optical Clear Resin

Applications

OCR(Optical clear resin) is an optical grade adhesive applied on laminated cover lens, touch panels and LCD modules. OCR can improve visibility and contrast ratio by reducing the reflection light between the interfaces in cover lens, touch panels or LCMs.

Features

- High transmittance
- O Easy to rework
- Excellent adhesion on cover lens, touch panels and LCMs
- Non-yellowing, low dosage
- Fast cure, low dosage

Product Name		OCRP198	Remarks
Field of Application		DGS/LCM&GFF/ LCM&On-cell	
Features		 Low Modulus for Mura Free Easy to rework High Dielectric Constant 	
Viscosity	cP	2,900	Brook Field Viscometer at 25.0±1.0℃, CPE 51
Non-Volatile Matter Content	wt%	100	
Exposure Energy	mJ/cm ²	2,000~5,000	Depend on UV lamp
Operating Environment (Yellow/White Light)		Yellow	
Transmittance at 400nm	%	>95	THK0.3mm G/G
Yellow Index		0.55	THK0.3mm G/G
Haze	%	0.26	THK0.3mm G/G
Tensile Adhesion	kPa	210	THK0.3mm G/G *THK0.15mm G/G
Elongation	%	2,500	
Elastic Modulus	kPa	2.3	
Dielectric Constant		5.2	1MHz





Flexible EPD/OLED Materials

Photosensitive Dielectric/Passivation

Applications

PBO dielectric layers can be used as the pixel defining layer (PDL) over the pixel electrode or the planarization layer (PLN) covering the TFTs in an organic light emitting diode display (OLED) and Electronic Paper Display (EPD).

Insulation

Reliabilty

Water

5

Т%

Absorption

Photo Speed Heat

Resistance

Dielectric

Constant

---- Daxin's PBO

Ref.PI



Features

- Low water absorption
- Low dielectric constant
- Precision planarization capabilities
- O Excellent mechanical and thermal properties Chemical Resistance
- High chemical resistance
- New : UV-resistance

Specifications

Product Name		PE	Remarks			
Pattern Availability		PLN	PDL	PS		
Features		THK 2.0 μm Via5~6 μm Taper50°~60°	THK 2.0 μm THK 1.5 μm THK 1.0 μm Via5~6 μm Via10~15 μm Dot10~15 μm Taper50°~60° Taper<30°			
Water Absorption	%		TGA(RA85/85,24Hr) (1)30°C, 30min (2)120°C, 10min 10°C/min			
Td(1%)	°C					
Weight Loss	%		After250°C/1hr			
Chemical Resistance	-		TMAH, Stripper, Ag etchant, Oxalic acid			
Dielectric Constant	-		@1kHz @1MHz			
Recovery Ratio	%		Bump size: 10 μm× 10 μm THK: 1 μm			
Transmittance	%		94.5		THK 1.5 μm at 550 μm	



MircoLED Materials

Bank Materials

Applications

Black bank / white bank materials are used as the separation of LED chips for Micro LED displays. Black bank with high optical density can increase the contrast. White bank with high reflectance can increase the brightness. Bank materials are available based on the product designs.

Black Bank

Features

- High optical density
- High electrical resistance
- Excellent weather resistance





Specifications

Test Items	Unit	DBB-series	Remarks
Viscosity	cP	10~15	
Optical Density		2.0	@Thickness=10 μm
Surface Resistivity	Ω/□	>10 ¹⁵	
HT/HH Test		5B	60°C , 90%RH, 240h





White Bank

Features

- High reflectance
- High electrical resistance
- Excellent weather resistance







Test Items	Unit	DBB-series	Remarks
Viscosity	cP	10~15	
Reflectance@550nm		>70	@Thickness=10 µm
Surface Resistivity	Ω/□	>10 ¹⁵	
HT/HH Test		5B	60°C , 90%RH, 240h



Key Raw Materials

Functional Monomer

CBDA

Cyclobutane-1,2-3,4-tetracarboxylic dianhydride (CBDA) is an alicyclic dianhydride.

Based on our unique photochemical reaction, we can synthesize the core structure of cyclobutane and the configuration of CBDA can be determined to be cis-trans-cis.

CBDA is widely used as a raw material for polyimide resins or polyamic acid resins because of its high reactivity during polymerization. In the application of display materials, such as alignment films for liquidcrystal-display devices, CBDA provides excellent electrical properties such as high VHR (Voltage Holding Rate) and low RDC (residual DC Voltage Measurement).

Furthermore, polymers made of CBDA offer good transparency and excellence flexibility, and therefore it is a good candidate for flexible substrate applications.

Prope	Structure	
Formula	$C_8H_4O_6$	
CAS Number	4415-87-6	
Molecular Weight	196.11	
Appearance	White Powder	
Melting Point	>300°C	0 N
Ion Content(Na,K,Cu,Fe)	<500 ppb	sis turnes sis forms
Solubility	Soluble in NMP, DMAc Slight soluble in Ac2O	cis-trans-cis form

BDA

Meso-Butane-1,2,3,4-tetracarboxylic dianhydride (BDA) has good dielectric properties and flexibility which makes it widely used in polyimide resins or polyamic acid resins.

Properties		
Formula	C ₈ H ₆ O ₆	
CAS Number	4534-73-0	
Molecular Weight	198.13	
Appearance	white powder	
Melting Point	>240°C	
Ion Content (Na, K, Cu, Fe)	<500ppb	
Solubillity	Soluble in NMP, DMAc	

TCA

3-(Carboxymethyl)-1,2,4-cyclopentanetricarboxylic Acid 1,4:2,3-dianhydride (TCA) is an alicyclic dianhydride, which is widely used as a raw material for polyimide resins or polyamic acid resins in the application of alignment films for liquid-crystal-display devices due to good solubility and thermal stability. Based on our own developed synthetic process, TCA can be obtained in high purity with low ion content.

Properties				
Formula	C ₁₀ H ₈ O ₆			
CAS Number	6053-46-9			
Molecular Weight	224.17			
Appearance	white powder			
Melting Point	>197°C			
Ion Content (Na, K, Cu, Fe)	<500ppb			
Solubillity	Soluble in NMP, DMAc			

Monoacrylate

CHDMMA

1,4-Cyclohexanedimethanol monoacrylate(CHDMMA) is manufactured with high purity by Daxin unique synthesis method and widely applied to coating, photoresist and adhesives.

Properti	es
Formula	C ₁₁ H ₁₈ O ₃
CAS Number	23117-36-4
Molecular Weight	198.26
Appearance	Transparent liquid
Viscosity(25°C)	90-105cPs
Purity	>98%







Specialty Polymer

Modified Acrylate

Daxin is committed to providing a wide range of modified acrylate oligomers and polymers with high performance, such as high reactivity, high adhesion and ability of development, to satisfy customer's requirements of high-end products. Daxin's modified acrylates have been used in the optical adhesives, photoresists for display, UV coatings, and other specialty applications.



Polyurethane Acrylate

Product name	Structure	Functionality	Viscosity (cP @ 25°C)	D _k (@1MHz)	Characteristics	Applications
DAU001		2	54,000~68,000	5.2	Flexibility, High elongation, High Dk	UV adhesives

Multifunctional Acrylate

Product name	Structure	Functionality	Viscosity (cP @ 25°C)	Acid Value (mg KOH/g)	Characteristics	Applications
DAC001	A A A A A A A A A A A A A A A A A A A	≧ 5	42.5 ± 4	14.5 ~ 18	Alkaline-soluble, High mechanical strength, High photo sensitivity	UV ink, UV-coating, Photoresist

Silane-containing Acrylate



Alkaline-soluble Acrylate

Product name	Structure	Functionality	Viscosity (cP @ 25℃)	Characteristics	Applications
DAE001	G: OH or acid groups	560-600	22 ± 4	High thermal stability, Alkaline-soluble	UV coating, photoresist

Modified Siloxane

With its expertise in side-chain design and synthesis approaches, Daxin has developed several modified-siloxane products, including epoxy-modified siloxane and acrylate-modified siloxane, with thermal/UV curable abilities. In addition, special structures introduced in the side chain provides siloxane-based materials unique features, such as flexibility, low shrinkage, amphiphilicity…etc., that make them good candidates for special requirements. The potential applications for these modified siloxanes are sealant, hardener for coating, silicone hydrogel…etc.

Epoxy-modified Siloxane



Acrylate-modified Siloxane



High-Purity Polymer

With the ability of polymer synthesis, precision manufacturing and purification technologies, Daxin can provide the polymers used in photoresists. Our high purity polymers can meet the requirements of well-controlled Mw (molecular weight) /PDI(polymer dispersity index) /copolymer ratio and low metal content. Powder and solution form are both available.

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EEW (g/eg)	(cP @ 25°C)	Characteristics	Applications
178	40 ± 10	High thermal stability, Iow shrinkage, hardness	Thermal curing hardcoat

ty	(cP @ 25℃)	Characteristics	Applications
	40,000	UV/thermal curable, amphiphilicy	Silicone hydrogel, coating,

Instrument Analysis

Development and Improvement of Analytical Techniques and Testing Equipment

O Cold trap-GC/MS (Ex. Evolved Gas Analysis and Thermal Desorption Analysis)

- O Development of testing method for the thermal expansion coefficient of transparent material film
- O Development of technology on the rate of development of thin film material
- Modifications of variable temperature testing

Identification of Chemical Composition

- Separation and purification of mixtures
- Composition identification
- Product failure mode analysis
- O Identification of impurities and source tracking
- Product efficacy difference analysismaterial





Organic Components/Outgas Analysis



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Thermal Analysis

Physical parameter varies with temperature, time, and environment



4. Compatible with UV-light

DAXin

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