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ISO 9001·ISO14001

审查登録

品質・環境マネジメントシステム



QMSEMS
ISO 9001: 2000
ISO 14001: 2004
JSAQ049, JSAE1140



JAB
QMS, EMS
Accreditations
R001, RE005

产品取用时的注意事项

取用时安全注意事项

- 小心取用，远离热源，火星，火源。
- 避免直接接触皮肤及眼睛，避免吸入蒸汽，建议穿戴合适的防护用品。
- 请储存在原密封的存储容器中，并存放在干燥的暗室中。

急救措施

- 如果接触皮肤：用肥皂及清水清洗接触部位。
- 如果接触眼睛：用清水冲洗至少15分钟，并送医。
- 如果被吸入：移至空气新鲜处。

物质安全资料表

- 请确保在使用前阅读过物质安全资料表。

Safety and Handling

- Keep away from heat, sparks, and open flame. Adequate ventilation should be provided in work areas.
- Avoid skin/eyes contact and breathing vapor during the use. It is recommended to wear proper safety gears.
- Keep in a sealed original container and store in a dark cool place.

First Aid

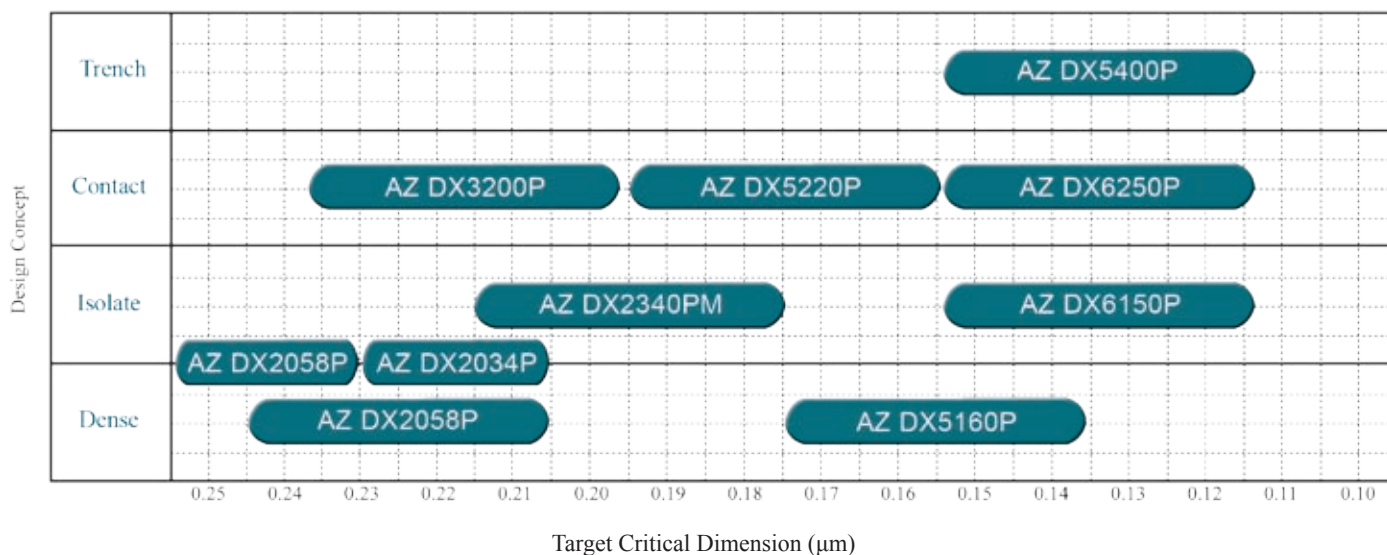
- If skin contact: Wash affected areas with soap and water.
- If eye contact: Immediately rinse with water for longer than 15 minutes and seek medical attention.
- If inhaled: Move into fresh air.

Material Safety Data Sheet

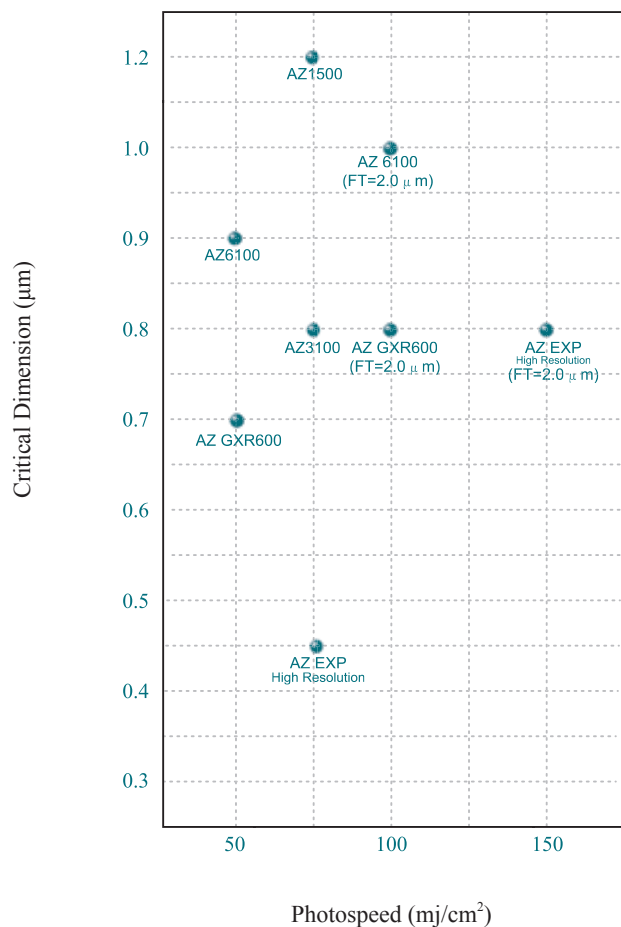
- Be sure to review Material Safety Data Sheet(MSDS) for detailed information prior to use.

AZ 光刻胶蓝图

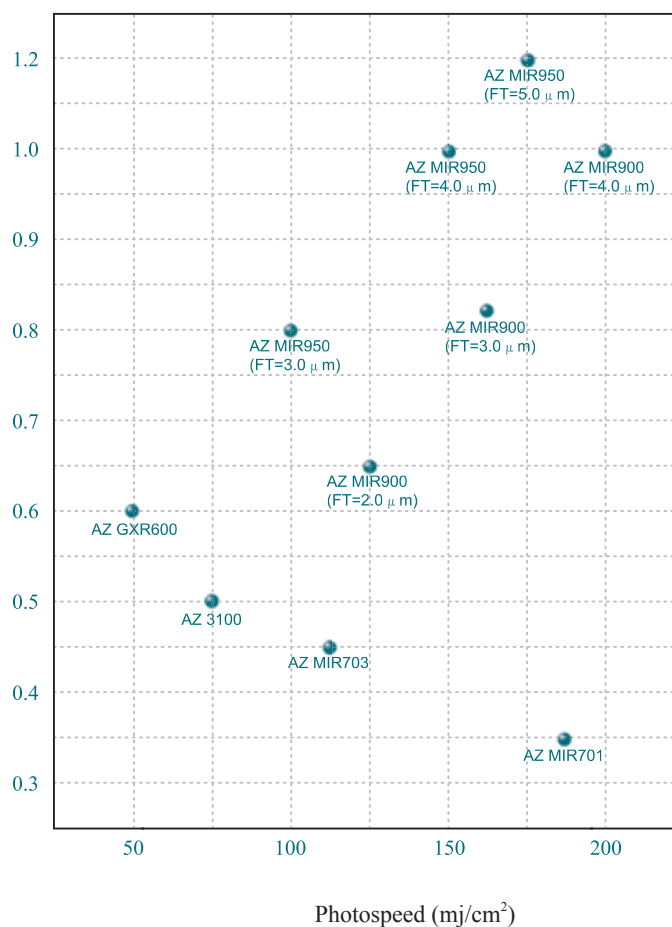
AZ DUV 光刻胶产品蓝图



AZ G-线光刻胶产品蓝图



AZ I-线光刻胶产品蓝图



AZ 1500 系列光刻胶

高感光度标准G线正型光刻胶

为广泛应用于半导体制造领域而优化的高感光度G线正型光刻胶

特征

- 1) 高感光度, 高产出率
- 2) 高附着性, 特别为湿法刻蚀工艺改进
- 3) 广泛应用于全球半导体行业

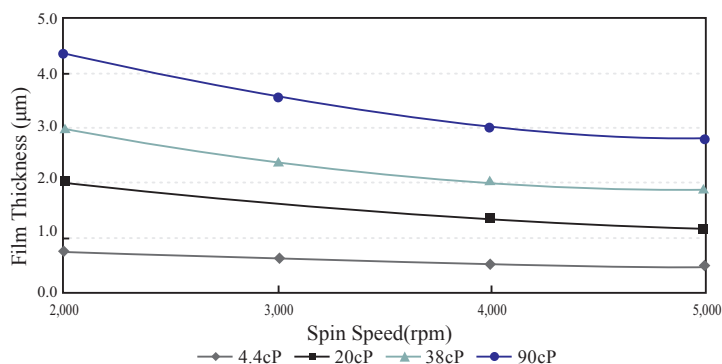
参考工艺条件

前烘	: 100°C 60秒 (DHP)
曝光	: G线步进式曝光机/接触式曝光机
显影	: AZ300MIF (2.38%) 23°C 60秒 Puddle
清洗	: 去离子水30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ1500			
Viscosity	4.4mPa	20mPa	38mPa	90mPa

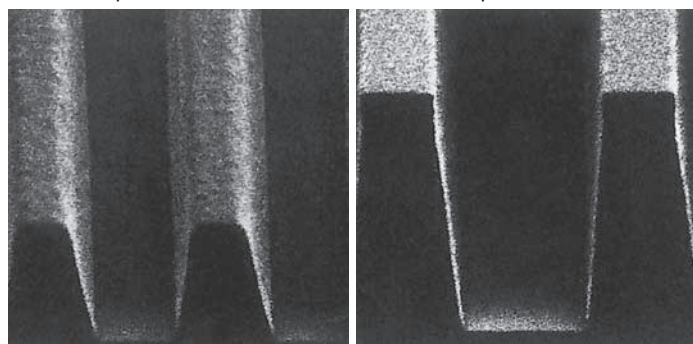
Spin Curve



Pattern Profiles

1.0µm L/S Pattern

1.5µm L/S Pattern



High Sensitivity Standard g-line Positive-tone Photoresist

High sensitivity broad-band, g-line positive-tone photoresist, optimized for wide production of semiconductor

FEATURES

- 1) Achievement for high sensitivity and high throughput
- 2) Improvement for wet etching by high adhesion
- 3) Trust on delivery reference at wide field and industry

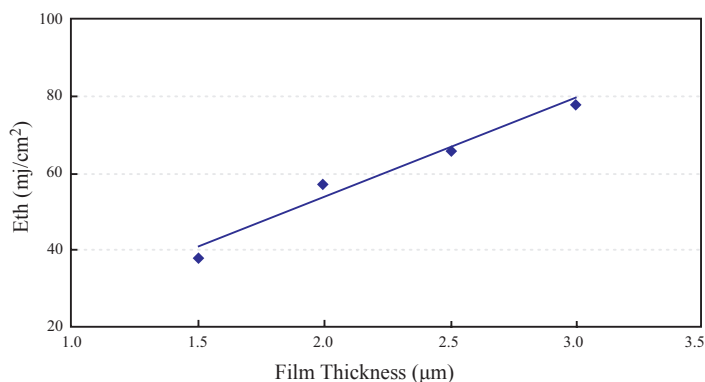
SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 60sec.(DHP)
Exposure	: g-line stepper and/or Contact Aligner
Developing	: AZ300MIF 23°C 60sec.Puddle
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP)
Stripping	: AZ Remover and/or O ₂ plasma-ashing

产品特性(PRODUCT PERFORMANCE)

Eth	Eop	耐热性(Termal Stability)
86msec.	94msec.(1.1xEth)	125°C

Dependency of Eth vs. Resist Thickness



Process Condition

Film Thickness	: 1.5µm (Photo, Left)
	: 3.0µm (Photo, Right)
Substrate	: Bare-si 4" wafer
Pre-bake	: 100°C 90sec.(DHP)
Exposure	: g-line stepper(NA=0.42)
Developing	: AZ 300MIF(2.38%) 23°C 60sec.

AZ 6100 系列光刻胶

g/i/cross-over

高感光度高热稳定性G线正型光刻胶

广泛应用于大规模集成电路的高感光度高热稳定性G线正型光刻胶

特征

- 1) 通过提高光刻胶的热稳定性，从而改善了干法刻蚀的工艺窗口
- 2) 高感光度带来了高产率
- 3) 很宽的膜厚范围

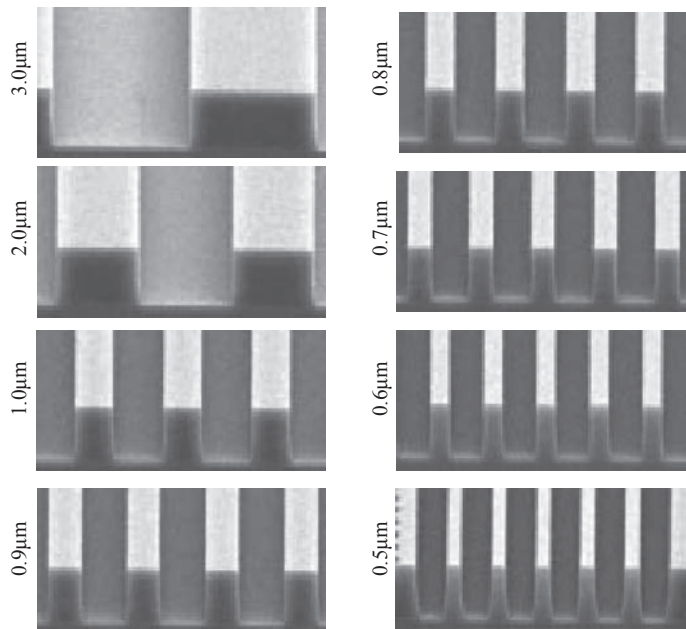
参考工艺条件

- 前烘 : 100°C 60秒 (DHP)
- 曝光 : G线步进式曝光机/接触式曝光机
- 显影 : AZ300MIF (2.38%) 23°C 60秒 Puddle
- 清洗 : 去离子水30秒
- 后烘 : 120°C 120秒 (DHP)
- 剥离 : AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ6112	AZ6124	AZ6130
Viscosity	13mPa	43mPa	69mPa

解像度(Resolution)



Process Condition

- Substrate : Bare-Si 4" wafer
- Film Thickness : 1.3µm
- Pre-bake : 100°C 90sec.(DHP)
- Exposure : g-line Stepper(NA=0.54) 110msec.
- Developing : AZ 300MIF Developer(2.38%) 23°C 60sec.

High Sensitivity & High Heat Stability g-line Positive-tone Photoresist

High sensitivity & high heat stability g-line positive-tone photoresist for general purpose~semi-critical process

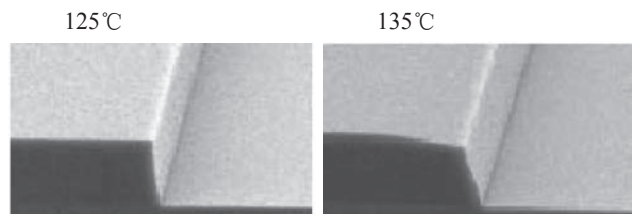
FEATURES

- 1) Improvement of dry etching process margin by high heat stability
- 2) Achievement of high throughput by high sensitivity
- 3) Wide viscosity variation

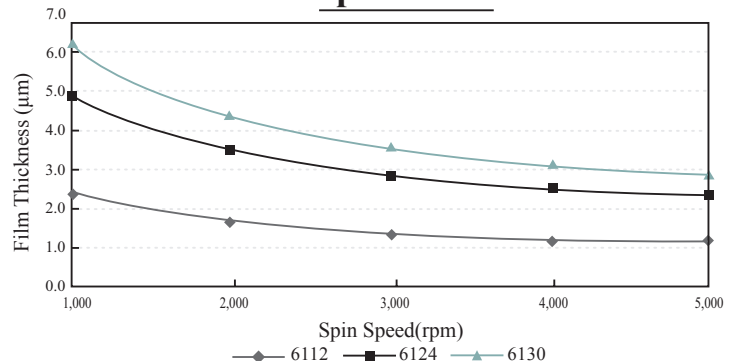
SAMPLE PROCESS CONDITIONS

- Pre-bake : 100°C 60sec.(DHP)
- Exposure : g-line stepper and/or Contact Aligner
- Developing : AZ300MIF (2.38%) 23°C 60sec.Puddle
- Rinse : DI-water 30sec.
- Post-bake : 120°C 120sec.(DHP)
- Stripping : AZ Remover and/or O₂ plasma-ashing

耐热性(Thermal Stability)



Spin Curve



AZ 3100 系列光刻胶

高感光度高附着性G线I线 通用正型光刻胶

G线I线通用高感光度高附着性正型光刻胶，特别为G线的关键层优化

特征

- 1) G线, I线通用
- 2) 通过提高光刻胶的热稳定性, 从而改善了干法刻蚀的工艺窗口
- 3) 通过提高光刻胶的附着性, 从而改善了湿法刻蚀的工艺窗口

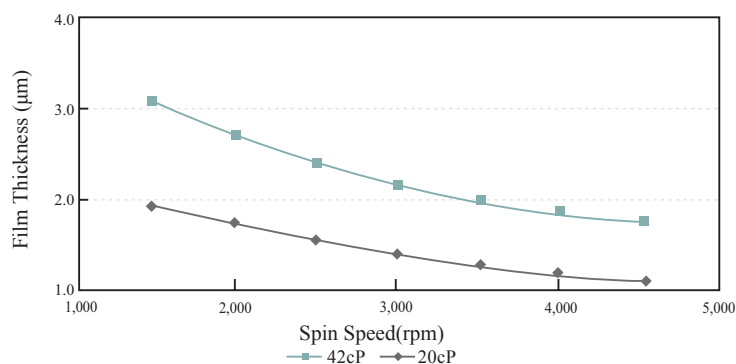
参考工艺条件

前烘	: 100°C 60秒 (DHP)
曝光	: G线/I线步进式曝光机
显影	: AZ300MIF (2.38%) 23°C 60秒 Puddle
清洗	: 去离子水30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液及/或氧等离子体灰化

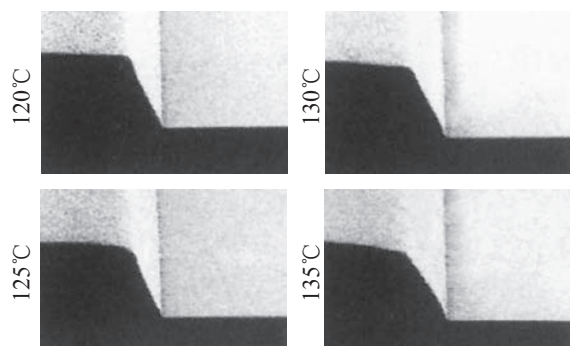
产品型号(PRODUCT RANGE)

Product Name	AZ3100	
Viscosity	20mPa	42mPa

Spin Curve



耐热性(Thermal Stability)



High Sensitivity & High Adhesion g/i Cross-over Positive-tone Photoresist

High sensitivity & high adhesion g/i cross-over positive-tone photoresist, optimized especially for critical-layer on g-line

FEATURES

- 1) Rationalization of product range by exposure of g/i line Cross-over
- 2) Improvement of dry etching process margin by high heat stability
- 3) Improvement of wet etching process margin by high adhesion

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 60sec.(DHP)
Exposure	: g/i-line stepper
Developing	: AZ300MIF 23°C 60sec.Puddle
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP)
Stripping	: AZ Remover and/or O ₂ plasma-ashing

曝光特性比较(EXPOSURE COMPARISON)

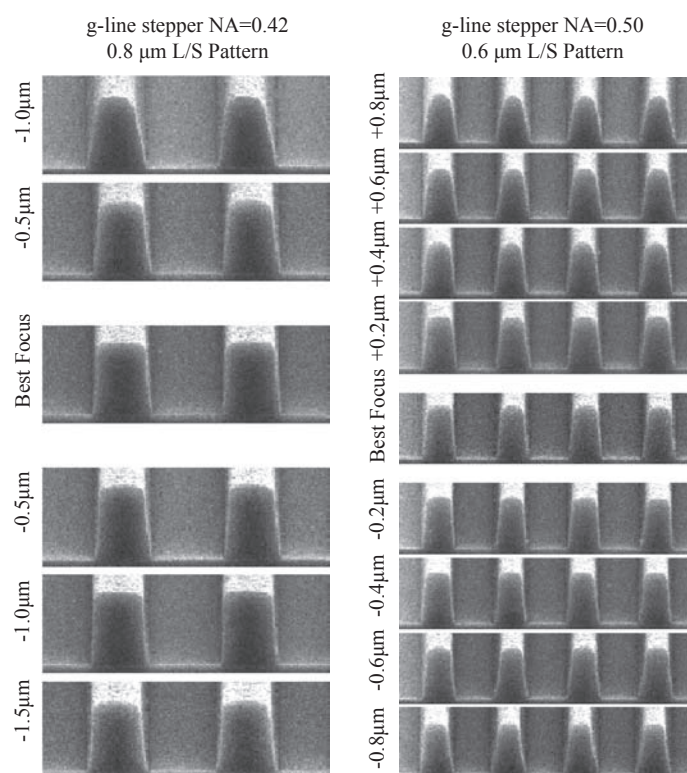
g线露光时 (g-line stepper NA=0.42)

Eth max.@1.395µm thickness	Eth min.@1.230µm thickness	Eop min.@1.305µm thickness
100msec.	75msec.	145msec.

i线露光时 (i-line stepper NA=0.50)

Eth max.@1.085µm thickness	Eth min.@1.140µm thickness	Eop min.@1.085µm thickness
90msec.	75msec.	115msec.

DOF特性(DOF Property)



AZ GXR-600 系列光刻胶

高感光度高附着性G线I线 通用正型光刻胶

AZ GXR600 系列是G线I线通用高感光度高附着性正型光刻胶，特别符合高产出率的需求

特征

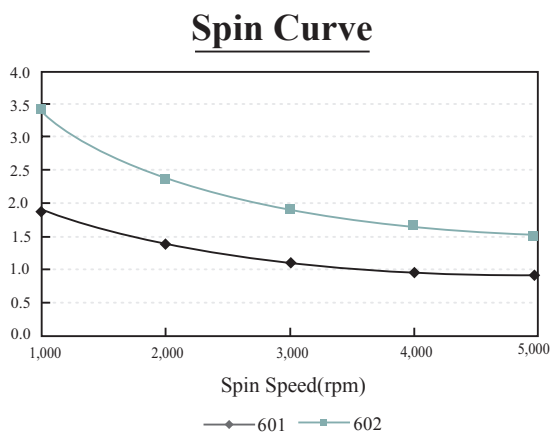
- 1) G线, I线通用
- 2) 高感光度带来了高产出率
- 3) 通过提高光刻胶的附着性和热稳定性, 改善了刻蚀的工艺窗口

参考工艺条件

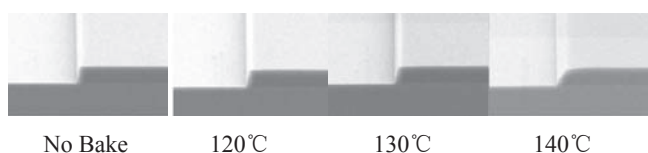
前烘	: 100°C 60秒 (DHP)
曝光	: G线/I线步进式曝光机
曝光后烘烤	: 110°C 60秒 (DHP)
显影	: AZ300MIF (2.38%) 23°C 60秒 Puddle
清洗	: 去离子水30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ GXR-601	AZ GXR-602
Viscosity	12mPa	29mPa



耐热性(Thermal Stability)



High Sensitivity & High Adhesion g/i Cross-over Positive-tone Photoresist

AZ GXR600 series is high sensitivity cross-over positive type photoresist which corresponds to the demand of high throughput

FEATURES

- 1) It is possible to be used with both g-line and i-line
- 2) To achieve high throughput by high sensitivity
- 3) Improvement of etching process margin by high adhesion and high heat stability

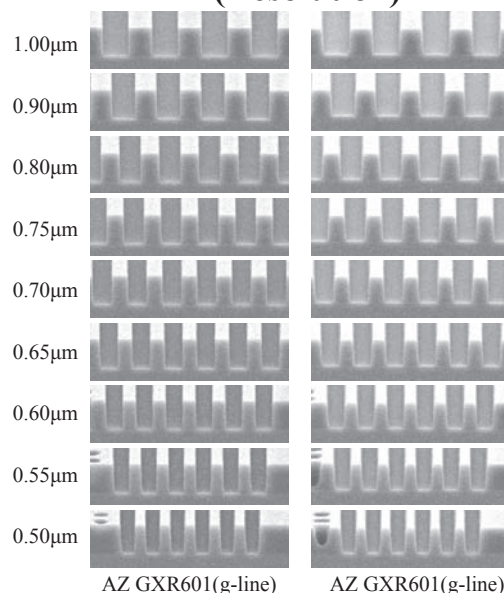
SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 60sec.(DHP)
Exposure	: g-line stepper and/or i-line stepper
PEB	: 110°C 60sec.(DHP)
Developing	: AZ300MIF 23°C 60sec.Puddle
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP)
Stripping	: AZ Remover and/or O ₂ plasma-ashing

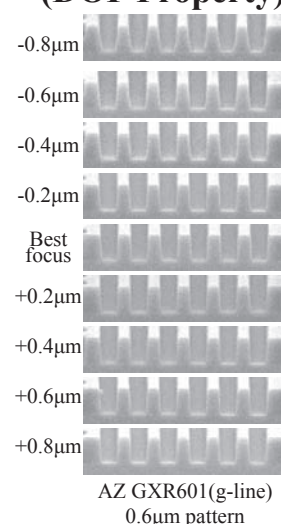
露光特性比较(EXPOSURE COMPARISON)

Product Name	AZ GXR-601	AZ GXR-602
Eop	100msec.(i-line)/180msec.(g-line)	140msec.(i-line)/220msec.(g-line)

解像度 (Resolution)



DOF特性 (DOF Property)



Process Condition

Substrate	: Bare-Si
Resist Film Thickness	: 1.305µm(g-line) 1.108µm(i-line)
Pre-bake	: 90°C 60sec.(DHP)
Exposure	: g-line or i-line stepper (NA=0.54)
PEB	: 110°C 60sec.(DHP)
Developing	: AZ 300MIF Developer (2.38%) 23°C 60sec.(puddle)
Post-bake	: 120sec.

AZ 5200E 系列光刻胶

应用于Lift-off工艺图形 反转正/负可转换型光刻胶

高解像度图形反转正/负可改变型光刻胶，特别为lift-off工艺优化

特征

- 1) 适用于高分辨率工艺(lift-off工艺)
- 2) 适用于正/负图形
- 3) 很宽的膜厚范围

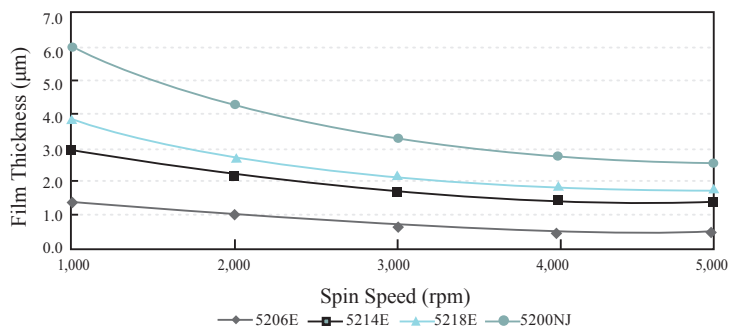
参考工艺条件

前烘	: 100°C 60秒 (DHP)
曝光	: I线步进式曝光机/接触式曝光机
反转烘烤	: 110~125°C 90秒 (DHP);去离子水30秒
全面曝光	: 310~405nm (在曝光光源下全面照射)
显影	: AZ300MIF (2.38%) 23°C 30~60秒Puddle : AZ Developer(1:1)23°C 60秒Dipping : AZ400K(1:4)23°C 60秒Dipping
清洗	: 去离子水30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ5206E	AZ5214E	AZ5218E	AZ5200NJ
Viscosity	7mPa	25mPa	40mPa	85mPa

Spin Curve



AZ 5200NJ Pattern Profiles

Substrate	: bare-Si
Film Thickness	: 6µm
Pre-bake	: 100°C 90sec.(DHP)
Exposure	: PLA 501F (Soft Contact)
Reversal Bake	: 120°C 120sec.
Flood Exposure	: PLA 501F (Proximity)
Developing	: AZ 400K (1:4) 23°C 90sec.dip

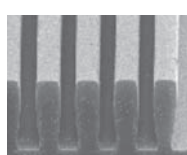
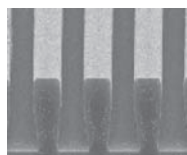
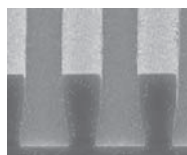
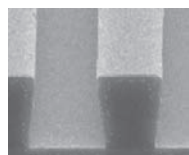
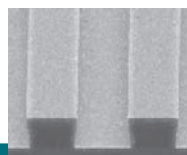


Image Reversal Pattern Posi/Nega Convertible Photoresist

Image reversal pattern positive/negative-tone photoresist,optimized for lift-off process

FEATURES

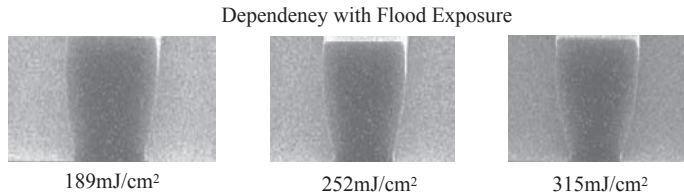
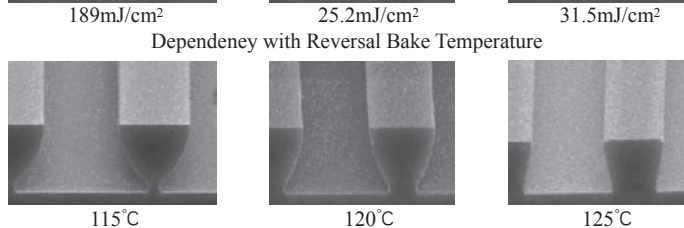
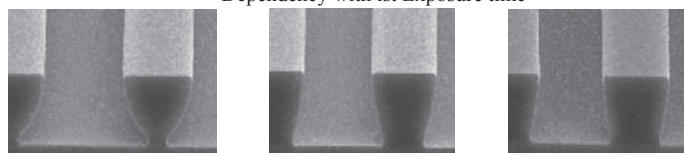
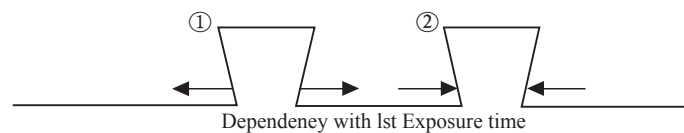
- 1) Suitable for High resolution process(lift-off process)
- 2) Available for positive/negative patterning
- 3) Wide viscosity variation

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 60sec.(DHP)
Exposure	: i-line stepper and/or Contact Aligner
Reversal Bake	: 110~125°C 90sec.(DHP); DI-water 30sec.
Flood Exposure	: 310~405nm (Whole face Irradiation at Exposure light source)
Developing	: AZ300MIF 23°C 30~60sec.Puddle : AZ Developer(1:1) 23°C 60sec.Dipping : AZ 400K(1:4) 23°C 60sec.Dipping
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP)
Stripping	: AZ Remover and/or O ₂ plasma-ashing

工艺条件依赖性(Process Dependency)

	1st Exposure	Reversal Bake	Flood Exposure
High	①	①	②
Low	②	②	①



AZ MIR-700 系列光刻胶

中高解像度I线正型光刻胶

Medium~High Resolution i-line Positive-tone Photoresist

高感光度I线正型光刻胶，符合ULSI和VLSI制造过程中高感光度高分辨率的要求

AZ MIR700series are high sensitivity i-line positive-tone photoresist which correspond to demand of high sensitivity and high resolution in manufacturing ULSI and VLSI

特征

- 1) 高感光度带来了高产出率
- 2) 线条与通孔均可应用
- 3) 推荐与AZ的ARC和RELACS共同使用

FEATURES

- 1) To achieve high throughput by high sensitivity
- 2) Available for line and hole
- 3) Recommendation to use with our ARC&RELACS

参考工艺条件

前烘 : 90°C 60秒 (DHP)
 曝光 : I线步进式曝光机
 曝光后烘烤 : 110°C 60秒 (DHP)
 显影 : AZ300MIF (2.38%) 23°C 60秒 Puddle
 清洗 : 去离子水30秒
 剥离 : AZ剥离液及/或氧等离子体灰化

SAMPLE PROCESS CONDITIONS

Pre-bake : 90°C 60sec.(DHP)
 Exposure : i-line stepper
 PEB : 110°C 60sec.(DHP)
 Developing : AZ300MIF 23°C 60sec.Puddle
 Rinse : DI-water 30sec.
 Stripping : AZ Remover and/or O₂ plasma-ashing

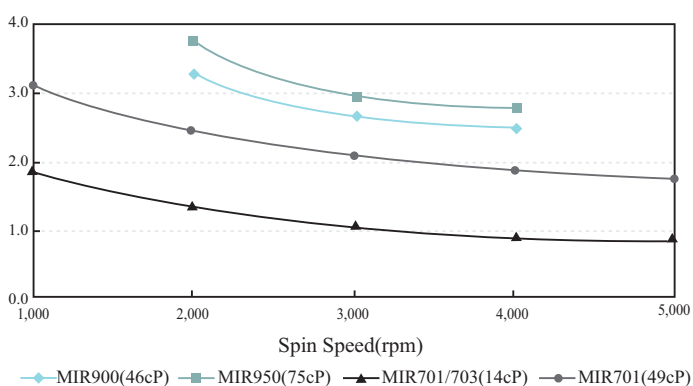
产品型号(PRODUCT RANGE)

Product Name	AZ MIR-701	AZ MIR-703
Viscosity	14mPa	14mPa

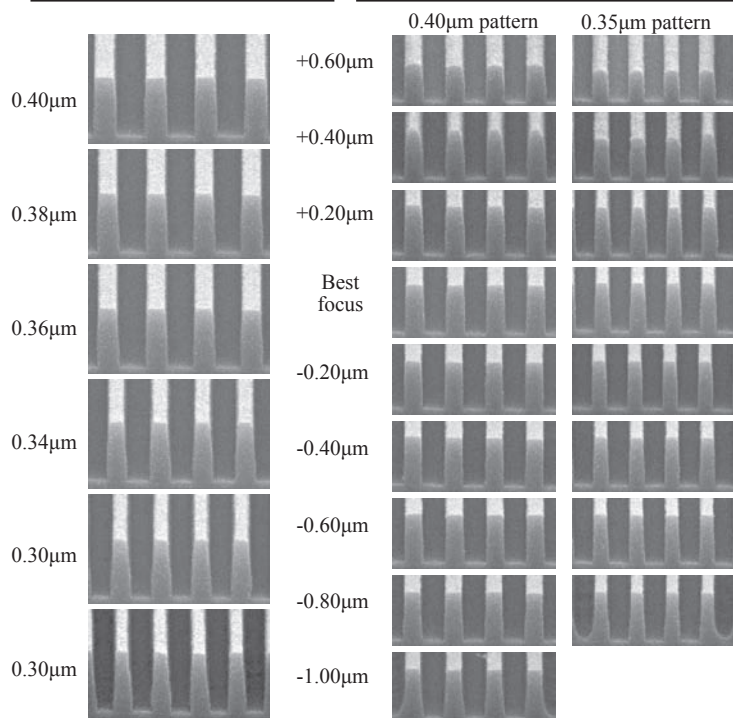
制品感光度(SENSITIVITY)

Product Name	AZ MIR-701	AZ MIR-703
Eop	360msec.	200msec.

Spin Curve of MIR series (MIR-700 & MIR900/950)



解像度(Resolution) DOF特性(DOF Property)



Process Condition

Substrate : Bare-Si
 Resist Film Thickness : 1.08µm
 Pre-bake : 90°C 60sec.
 Exposure : i-line stepper(NA=0.54)
 PEB : 110°C 60sec.
 Developing : AZ 300MIF(2.38%) 23°C 60sec.(puddle)
 Post-bake : 120sec.

AZ MIR900 系列光刻胶

厚膜高解像度高感光度I线正型光刻胶

厚膜，高分辨率高感光度I线正型光刻胶，适用于超高剂量离子注入工艺和厚金属层蚀刻工艺

特征

- 1) 在超厚膜工艺上达成高分辨率和高感光度
- 2) 高对准精度
- 3) 在8um厚度下可使用2.38%TMAH显影液

参考工艺条件

前烘 : 90°C 90秒 (DHP)
 曝光 : I线步进式曝光机
 曝光后烘烤 : 110°C 30秒 (DHP)
 显影 : AZ300MIF (2.38%) 23°C 90秒 Puddle
 清洗 : 去离子水30秒
 后烘 : 120°C 120秒(DHP)
 剥离 : AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ MIR-900	AZ MIR-950
Viscosity	46mPa	75mPa

Thick-film High Resolution i-line Positive-tone Photoresist for High-dose Implantation Process

Thick-film, high resolution and high sensitivity i-line positive-tone photoresist, suitable for ultra high dose implantation and thick metal etching processes

FEATURES

- 1) High resolution and high sensitivity with ultra thick-film process
- 2) High alignment accuracy with low proximity dependency
- 3) TMAH (2.38%) developing with 8.0um thickness, available

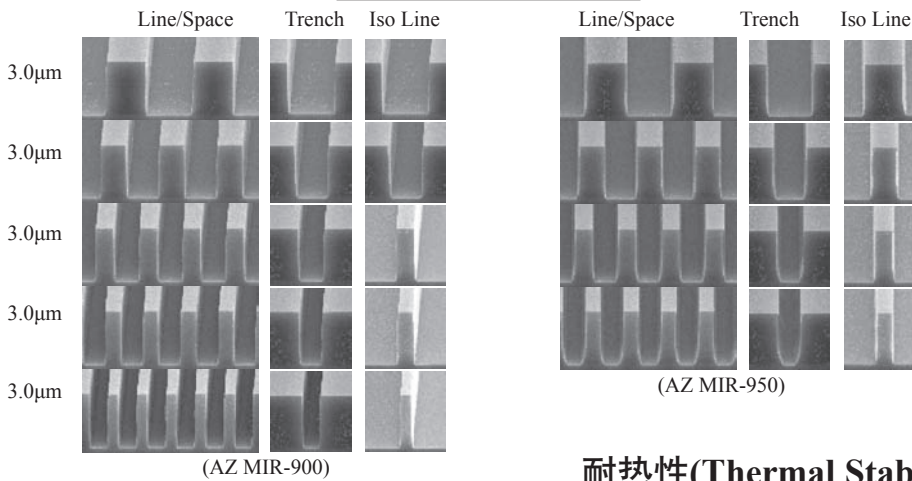
SAMPLE PROCESS CONDITIONS

Pre-bake : 90°C 90sec.(DHP)
 Exposure : i-line stepper
 PEB : 110°C 30sec.(DHP)
 Developing : AZ300MIF 23°C 90sec.Puddle
 Rinse : DI-water 30sec.
 Post-bake : 120°C 120sec.(DHP)
 Stripping : AZ Remover and/or O₂ plasma-ashing

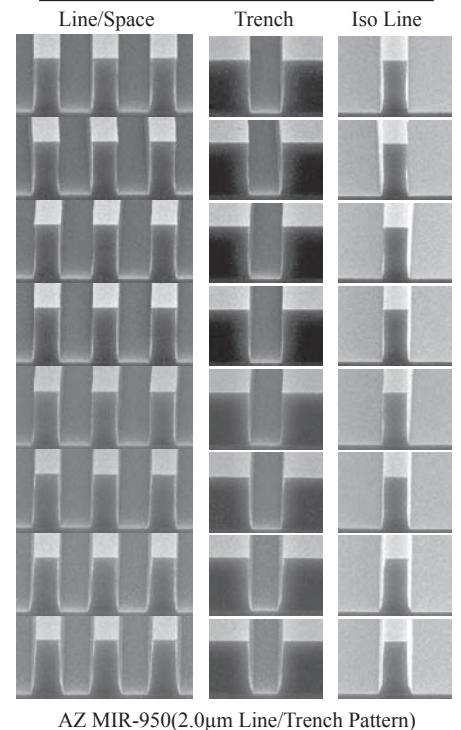
产品感光度(SENSITIVITY)

Product Name	AZ MIR-900	AZ MIR-950
Viscosity	340msec.	220msec.

解像度(Resolution)



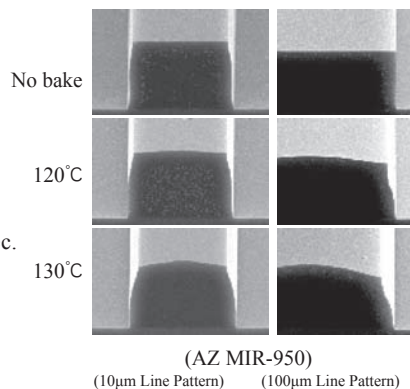
DOF特性(DOF Property)



Process Condition

Substrate : Bare-Si
 Resist Film Thickness : 4.0um
 Pre-bake : 90°C 90sec.
 Exposure : i-line Stepper(NA=0.54)
 PEB : 110°C 30sec.
 Developing : AZ 300MIF(2.38%) 23°C 60sec.
 Post-bake : 120sec.

耐热性(Thermal Stability)



AZ DX3200P 系列光刻胶

应用于通孔图形的KrF正型光刻胶

KrF Excimer Laser Positive-tone Photoresist for Contact Hole

超高分辨率KrF正型光刻胶，为通孔图形优化

KrF excimer laser positive-tone photoresist, optimized for Contact Hole-pattern

特征

- 1) 工艺窗口大
- 2) 适用于half-tone相移光罩
- 3) 适用于密集线图形

FEATURES

- 1) Wide process margin
- 2) Suitable for half-tone phase sift mask
- 3) Compatible for dense line pattern

参考工艺条件

前烘 : 80°C 60秒 (DHP)
 曝光 : KrF步进式曝光机
 曝光后烘烤 : 110°C 90秒(DHP)
 显影 : AZ300MIF (2.38%) 23°C 60秒 Puddle
 清洗 : 去离子水30秒
 剥离 : AZ剥离液及/或氧等离子体灰化

SAMPLE PROCESS CONDITIONS

Pre-bake : 80°C 60sec.(DHP)
 Exposure : KrF Excimer Laser stepper
 PEB : 110°C 90sec.(DHP)
 Developing : AZ300MIF(2.38%) 23°C 60sec.Puddle
 Rinse : DI-water 30sec.
 Stripping : AZ Remover and/or O₂ plasma-ashing

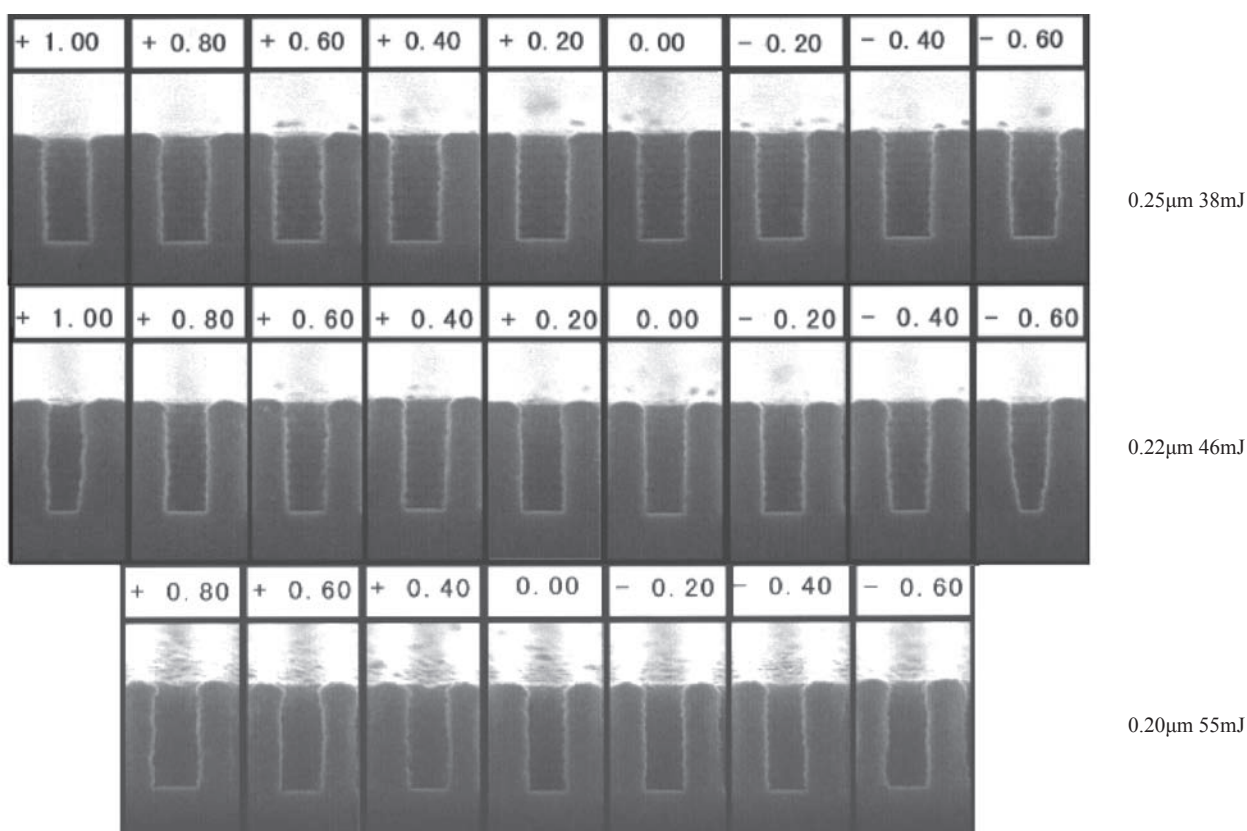
产品型号(PRODUCT RANGE)

Product Name	AZ DX3200P
Viscosity	9cP

光学条件(OPTICAL PARAMETERS)

Chauchy A	Chauchy B	Chauchy C	n(248nm)	k(248nm)
1.5512	0.0050756	0.0012409	1.8034	0.006102

Depth of Focus and Eo



AZ DX5200P 系列光刻胶

应用于沟槽及通孔图形的 超高分辨率KrF正型光刻胶

超高分辨率KrF正型光刻胶，为沟槽及通孔图形优化

特征

- 1) 高分辨率，大焦深
- 2) 适用于HT-PSM光罩和普通Binary光罩
- 3) 适用于各种衬底

参考工艺条件

前烘 : 90°C 60秒 (DHP)
 曝光 : KrF步进式曝光机
 曝光后烘烤 : 120°C 90秒 (DHP)
 显影 : AZ300MIF (2.38%) 23°C 60秒 Puddle
 清洗 : 去离子水30秒
 剥离 : AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ DX2546P	AZ DX5200P
Viscosity	6cP	8cP

KrF Excimer Laser Positive-tone Photoresist for Contact Hole and Trench

High resolution KrF excimer laser positive-tone photoresist, optimized for trench and Contact Hole pattern

FEATURES

- 1) High resolution and wide DOF margin
- 2) HT-PSM and Binary Mask, available
- 3) Available with several substrate

SAMPLE PROCESS CONDITIONS

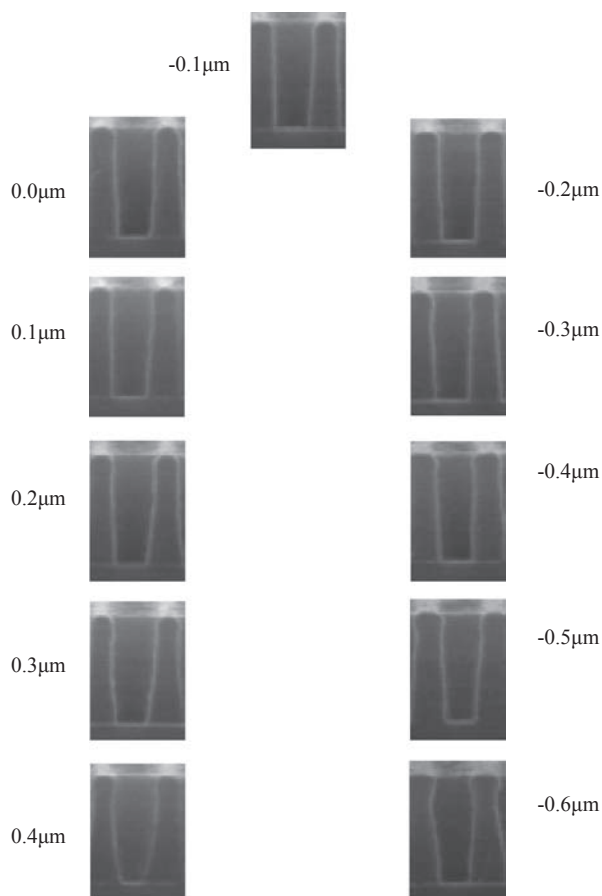
Pre-bake : 90°C 60sec.(DHP)
 Exposure : KrF Excimer Laser stepper
 PEB : 120°C 90sec.(DHP)
 Developing : AZ300MIF(2.38%) 23°C 60sec.Puddle
 Rinse : DI-water 30sec.
 Stripping : AZ Remover and/or O₂ plasma-ashing

光学条件(OPTICAL PARAMETERS)

Chauchy A	Chauchy B	Chauchy C	n(248nm)	k(248nm)
1.5479	0.0077736	0.0000721	1.7932	0.007815

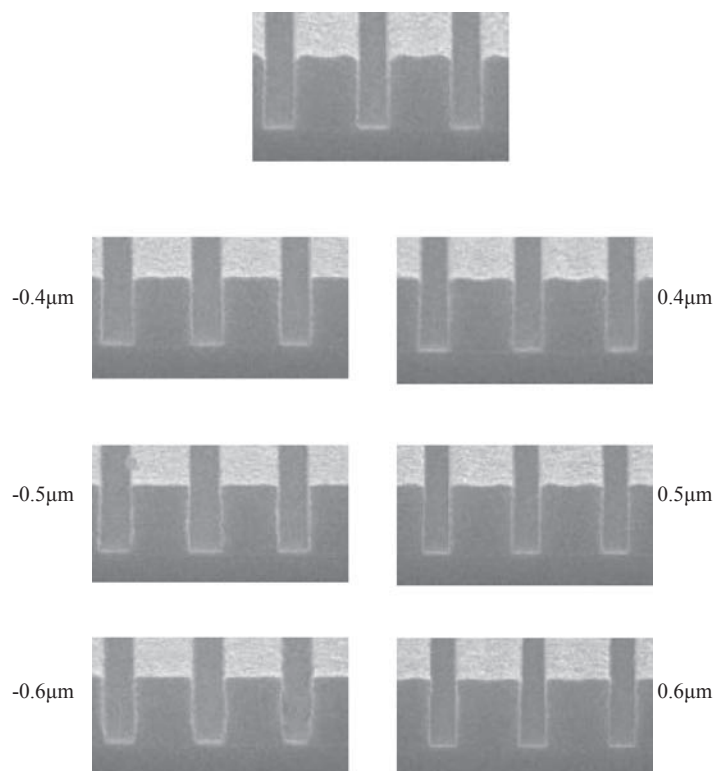
Depth of Focus(Contact Hole)

0.2 μm C/H Pitch 1:1 Eo=40.0mj/cm²



Depth of Focus (Trench)

pattern size 0.16 μm Trench



AZ P4000 系列光刻胶

超厚膜高感光度G线标准正型光刻胶

超厚膜，高对比度，高感光度正型光刻胶，适用于半导体制造及GMR磁头制造

特征

- 1) 高对比度，高感光度
- 2) 高附着性，对电镀工艺高耐受性
- 3) 多种粘度可供选择

参考工艺条件

前烘 : 100°C 90秒以上 (DHP)
 曝光 : G线步进式曝光机/接触式曝光系统
 显影 : AZ300MIF显影液23°C 60~300秒
 清洗 : 去离子水
 后烘 : 120°C 60秒以上
 剥离 : AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ P4210	AZ P4330	AZ P4400	AZ P4620	AZ P4903
Viscosity	49mPa	115mPa	160mPa	400mPa	1550mPa

Ultra Thick Film High Sensitivity g-line Standard Positive-tone Photoresist

Ultra-thick film high contrast and high speed positive-tone standard photoresist for semiconductor and/or GMR head manufacturing processes.

FEATURES

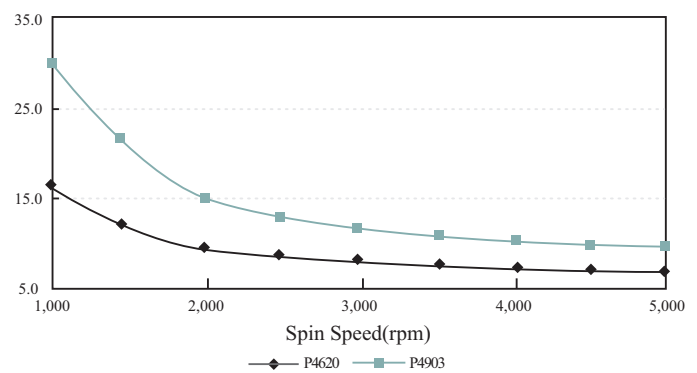
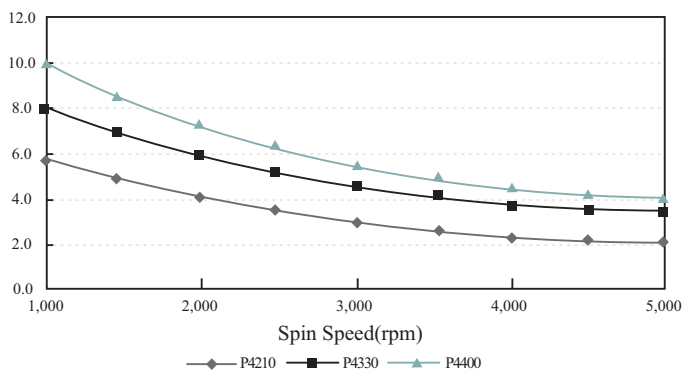
- 1) High contrast, high sensitivity
- 2) High tolerance in plating, high adhesion property
- 3) Various viscosity products

SAMPLE PROCESS CONDITIONS

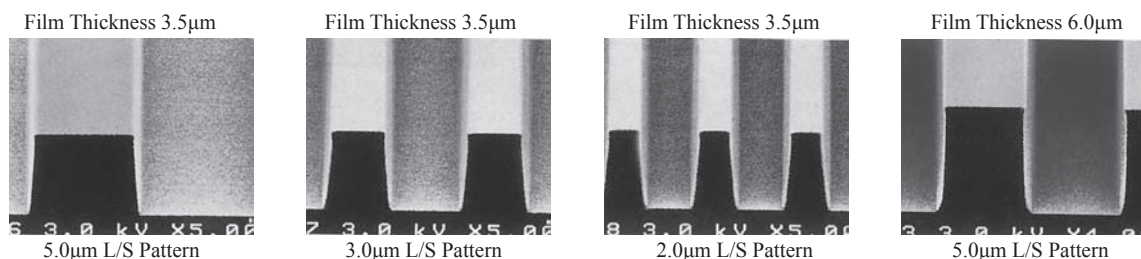
Pre-bake : 100°C >90sec.(DHP)
 Exposure : g-line stepper and/or Contact Aligner
 Developing : AZ300MIF Developer 23°C 60~300sec.
 Rinse : DI-water
 Post-bake : 120°C >60sec.
 Stripping : AZ Remover and/or O₂ plasma-ashing

Thick-Film

Spin Curve



Pattern Profiles



Exposure : g-line Stepper(NA=0.30)
 Developing : AZ400K Dev.(1:4) Dip 120sec.

AZ 10XT 系列光刻胶

应用于电镀工艺的超厚膜，高分辨率I线正型光刻胶

超厚膜，高分辨率，高纵宽比I线正型光刻胶，适用于微电镀工艺

特征

- 1) 高分辨率，高纵宽比
- 2) 高附着性，对电镀工艺高耐受性
- 3) 多种粘度可供选择

参考工艺条件

前烘	: 100°C 90秒以上 (DHP)
曝光	: I线步进式曝光机/接触式曝光系统
显影	: AZ400K显影液(1:4) 23°C 60~300秒 Dip : AZ300MIF显影液23°C 60~300秒
清洗	: 去离子水
后烘	: 120°C 60秒以上
剥离	: AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ 10XT(220cP)	10XT(520cP)
Viscosity	220mPa	520mPa

Ultra Thick Film High Resolution i-line Positive-tone Photoresist for Plating Process

Ultra-thick film high resolution and high aspect ratio positive-tone i-line photoresist for micro-plating processes

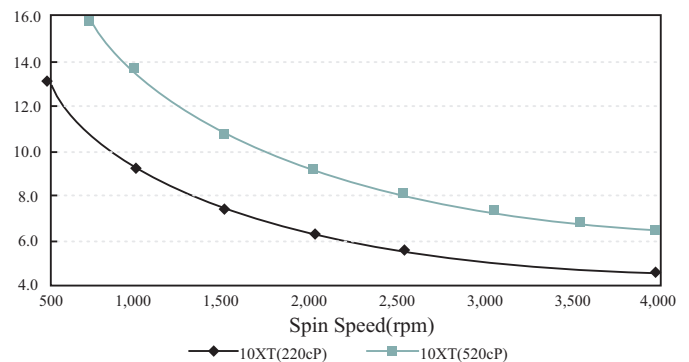
FEATURES

- 1) High resolution,high aspect ratio
- 2) High tolerance in plating, high adhesion property
- 3) Various viscosity variation

SAMPLE PROCESS CONDITIONS

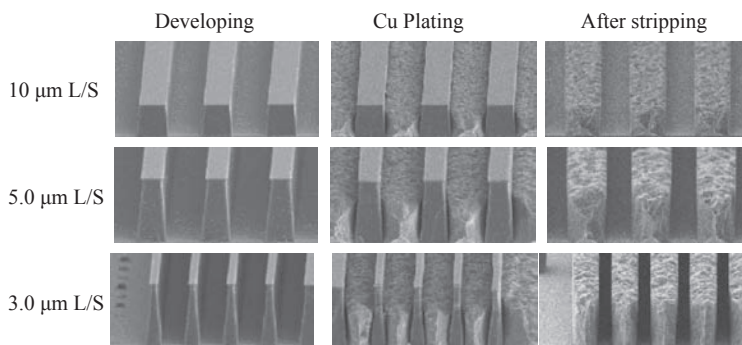
Pre-bake	: 100°C>90sec.(DHP)
Exposure	: i-line stepper and/or Contact Aligner
Developing	: AZ400K Developer (1:4)23°C 60~300sec.Dip : AZ300MIF Developer 23°C 60~300sec.
Rinse	: DI-water.
Post-bake	: 120°C>60sec.
Stripping	: AZ Remover and/or O ₂ plasma-ashing

Spin Curve

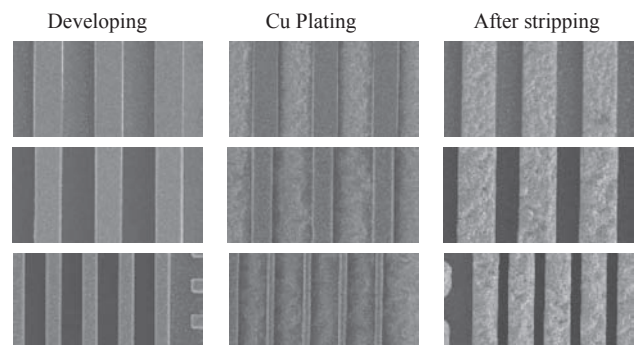


AZ 10XT:Plating Behaviors

Cross Section



Top Down



Substrate	: Cu on Si
Pre-bake	: 100°C 180sec.
Exposure	: PLA-501F(Soft contact)
Developing	: AZ 400K Developer(1:4) 23°C 300sec.Dip
Photoresist thickness	: 12μm
Plating thickness	: 10μm
Plating liquid	: MICROFAB Cu 200/EEJA
Plating temp.& time	: 25°C 30min.

AZ PLP 系列光刻胶

应用于高精度电镀工艺的 超厚膜正型光刻胶

适用于bumping和CSP重布线的超厚膜，高分辨率，对电镀工艺高耐受性正型光

特征

- 1) 高分辨率，高垂直性
- 2) 在电镀工艺中不产生膨胀与裂缝
- 3) 高附着性

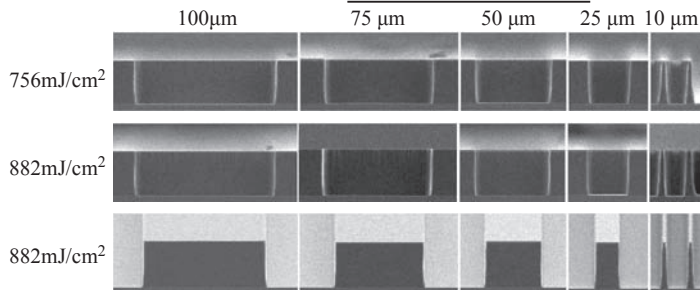
参考工艺条件

前烘 : 110°C 90秒 (DHP)
 曝光 : G线步进式曝光机/接触式曝光系统
 显影 : AZ303N显影液(1:5) 23°C 120~300秒
 清洗 : 去离子水30秒
 后烘 : 90°C 90秒以上
 剥离 : AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ PLP-30		AZ PLP-40
Viscosity	550mPa	830mPa	750mPa

Plating Profiles



Substrate : 4inch Bare Si
 Film Thickness : 30µm
 Pre-bake : 50°C 180sec. +150°C 300sec.
 Exposure : PLA-501F(Soft-contact)
 Developing : AZ 400K (1:3) 23°C 360sec.(DIP)

Ultra Thick Film Positive-tone Photoresist for Fine-Pitch Plating Process

Ultra-thick film high resolution and high plating tolerance positive-tone photoresist for wafer bumping and CSP re-routing

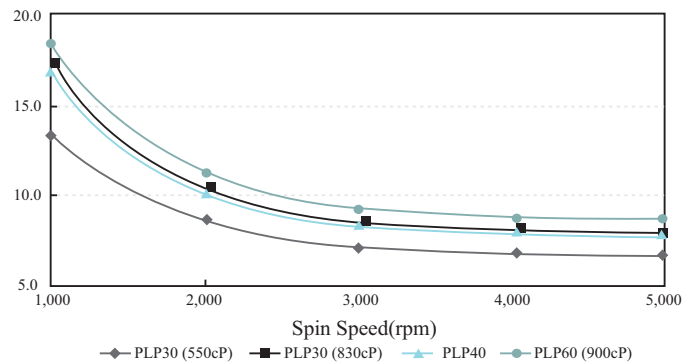
FEATURES

- 1) High resolution, high wall angle
- 2) No swelling and no crack in plating
- 3) High adhesion property

SAMPLE PROCESS CONDITIONS

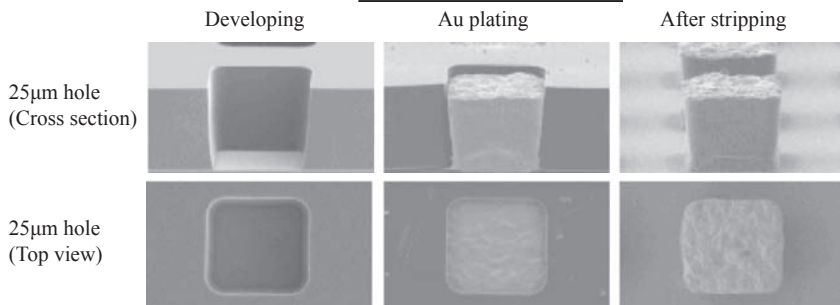
Pre-bake : 110°C >90sec.(DHP)
 Exposure : g-line stepper and/or Contact Aligner
 Developing : AZ303N Developer (1:5) 23°C 120~300sec. Dip
 Rinse : DI-water 30sec.
 Post-bake : 90°C >90sec.
 Stripping : AZ Remover and/or O₂ plasma-ashing

Spin Curve



Substrate : 6inch Bare Si wafer
 HMDS : 90sec. Vapor
 Pre-bake : 120°C 300sec.(Proximity)
 Coating Sequence : 1)300rpm X 5sec.
 2)XXX rpm X 30sec.

Plating Behavior



Plating liquid : GB-II (Cyanid Au/EEJA, pH=5.5)
 Photoresist thickness : 25µm
 Plating height : 20µm
 Plating temp.& time : 50°C for 40min
 Current density : 0.8A/dm²

AZ 顶部防反射涂层材料

AZ AQUATAR®系列

应用于超高分辨率图形加工的顶部防反射涂层

Top Anti Reflective Coating for Ultra High Resolution Patterning

在超高分辨率下，有必要使用AZ AQUATAR系列改善光刻胶线宽，并降低薄膜干涉造成的驻波效应

AZ AQUATAR series are essential item to improve the photoresist linewidth control and reduce standing waves caused by thin film interference effects at Ultra high resolution from Sub-half micron onwards

特征

- 1) 适用于各种高解像度I线/KrF/ArF光刻胶
- 2) 提高了光刻胶表面的亲水性，有效地减少了显影引起的缺陷
- 3) 水溶性溶液，因此适于加入现有的工艺中

FEATURES

- 1) High affinity for various high resolution resist for i-line, KrF, and ArF applications
- 2) High effect for reducing developing defect according to improve of affinity of resist surface.
- 3) Easy to be equipped with current process due to pure water/solvent type

参考工艺条件

条件1	条件2	条件3
1) 涂布光刻胶	1) 涂布光刻胶	1) 涂布光刻胶
2) 前烘	2) 前烘	2) 涂布AQUATAR
3) 涂布AQUATAR	3) 涂布AQUATAR	3) 前烘
4) 前烘	4) 曝光	4) 曝光
5) 曝光	5) 曝光后烘烤	5) 曝光后烘烤
6) 曝光后烘烤	6) 显影	6) 显影
7) 显影		

条件4	
1) 涂布光刻胶	
2) 前烘	
3) 涂布AQUATAR	*工艺条件必须根据下层的光刻胶制定
4) 前烘	*在AQUATAR涂布时，AZ EBR 7030可以用于晶边去胶
5) 曝光	
6) AQUATAR剥离	
7) 曝光后烘烤	
8) 显影	*去离子水适用于AQUATAR剥离

SAMPLE PROCESS CONDITIONS

Condition1	Condition2	Condition3
1) Photoresist Coat	1) Photoresist Coat	1) Photoresist Coat
2) Pre-bake	2) Pre-bake	2) AQUATAR Coat
3) AQUATAR Coat	3) AQUATAR Coat	3) Pre-bake
4) Pre-bake	4) Exposure	4) Exposure
5) Exposure	5) PEB	5) PEB
6) PEB	6) Developing	6) Developing
7) Developing		

Condition4	
1) Photoresist Coat	
2) Pre-bake	
3) AQUATAR Coat	*Process Condition should be set according to the matching with underlying photoresist
4) Pre-bake	
5) Exposure	*AZ EBR 7030 should be used for Edge/Back Rinse for AQUATAR coating process
6) AQUATAR Strip	
7) PEB	
8) Developing	*DI-Water should be used for AQUATAR stripping

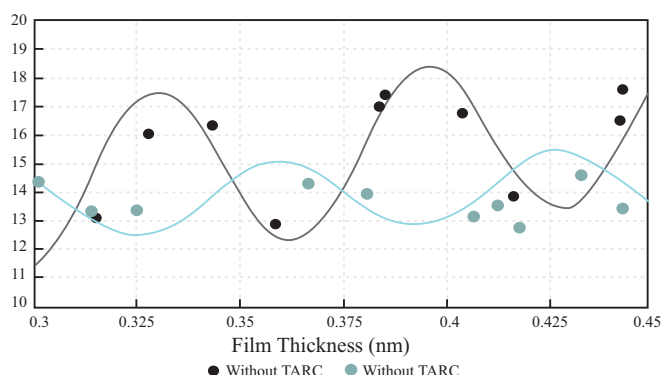
产品型号(PRODUCT RANGE)

Product Name	AZ AQUATAR	AZ AQUATAR-45	AZ AQUATAR-III-45	AZ AQUATAR-VI
Exposure	i-line(365nm)	KrF(248nm)	KrF(248nm)	ArF(193nm)
Refractive Index	1.44	1.48	1.43	1.45

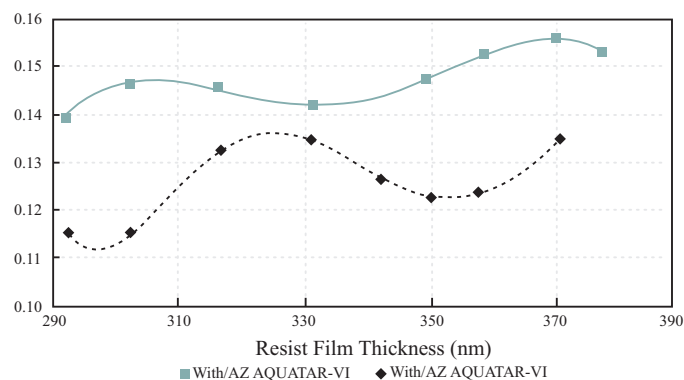
膜厚设定(Film Thickness Fitting)

$$\left(\begin{array}{c} \text{AZ AQUATAR 膜厚} \\ \text{Film Thickness} \\ \text{of} \\ \text{AZ AQUATAR} \end{array} \right) = \frac{\text{露光波长 (Exposure Wave Length)}}{4 \times \text{AZ AQUATAR 的 曲折率 (Refractive Index of AZ AQUATAR)}}$$

AZ AX2020P Swing Curve with/without TARC



Resist-A Swing Curve with/without AZ AQUATAR-VI



Non PFOS和Non PFOA的顶部防反射涂层

AZ AQUATAR-[®]VIII 系列

AQUATAR is a registered trademark of AZ Electronic Materials

Non PFOS和Non PFOA 的顶部防反射涂层

Non PFOS and Non PFOA type Top Anti Reflective Coating Materials

AQUATAR-VIII系列不含PFOS和PFOA

可溶于水，使用方法与现有的TARC材料相同

AZ AQUATAR-VIII series are free from PFOS and PFOA.

These materials are water-soluble, and can be used in the same way as existing TARC materials.

特征

- 1) 适用于各种高分辨率I线/KrF/ArF光刻胶
- 2) 提高了光刻胶表面的亲水性，有效地减少了显影引起的缺陷
- 3) 溶于纯水及各种溶剂中，因此适于加入现有的工艺中

FEATURES

- 1) High affinity for various high resolution resist for i-line, KrF, and ArF applications
- 2) High effect for reducing developing defect according to improve of affinity of resist surface
- 3) It is easy to equip with current process due to Pure water/solvent type

制程条件

条件1	条件2	条件3
1) 涂布光刻胶	1) 涂布光刻胶	1) 涂布光刻胶
2) 前烘	2) 前烘	2) 涂布AQUATAR
3) 涂布AQUATAR	3) 涂布AQUATAR	3) 前烘
4) 前烘	4) 曝光	4) 曝光
5) 曝光	5) 曝光后烘烤	5) 曝光后烘烤
6) 曝光后烘烤	6) 显影	6) 显影
7) 显影		
条件4		
1) 涂布光刻胶		
2) 前烘		
3) 涂布AQUATAR	* 制程条件必须根据下层的光刻胶制定	
4) 前烘	* 在AQUATAR涂布时，AZ EBR7030可以用于晶边去胶	
5) 曝光		
6) AQUATAR剥离		
7) 曝光后烘烤		
8) 显影	* 去离子水可用于AQUATAR剥离	

SAMPLE PROCESS CONDITIONS

Condition1	Condition2	Condition3
1) Photoresist Coat	1) Photoresist Coat	1) Photoresist Coat
2) Pre-bake	2) Pre-bake	2) AQUATAR Coat
3) AQUATAR Coat	3) AQUATAR Coat	3) Pre-bake
4) Pre-bake	4) Exposure	4) Exposure
5) Exposure	5) PEB	5) PEB
6) PEB	6) Developing	6) Developing
7) Developing		
Condition4		
1) Photoresist Coat		
2) Pre-bake		
3) AQUATAR Coat	* Process Condition should be set according to the matching with underlying photoresist	
4) Pre-bake		
5) Exposure	* AZ EBR 7030 should be used for Edge/Back Rinse for AQUATAR coating process	
6) AQUATAR Strip		
7) PEB		
8) Developing	* DI-Water should be used for AQUATAR stripping	

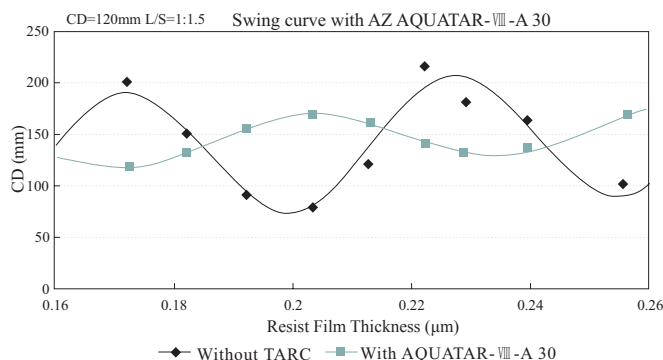
产品型号(PRODUCT RANGE)

Product Name	wafer size	applications		
AZ AQUATAR-VIII-A25	12inch	ArF		
AZ AQUATAR-VIII-A30	12inch/8inch	ArF/KrF		
AZ AQUATAR-VIII-A45	8inch/6inch	KrF/i-line		
	365nm	248nm	193nm	633nm
Refractive Index	1.41	1.44	1.51	1.40
k value	0.0064	0.0013	0.0043	0

膜厚设定(Film Thickness Fitting)

$$\left(\begin{array}{c} \text{AZ AQUATAR 膜厚} \\ \text{Film Thickness} \\ \text{of} \\ \text{AZ AQUATAR} \end{array} \right) = \frac{\text{露光波长 (Exposure Wave Length)}}{4 \times \text{AZ AQUATAR 的折射率 (Refractive Index of AZ AQUATAR)}}$$

Swing curve with ArF resist (AX 1120P)



AZ 底部防反射涂层材料

AZ BARLi[®]-II, KrF-BARC, ArF-BARC 系列

应用于超高分辨率图形加工的底部防反射涂层

在减小衬底特别是高反射率衬底的反射率，从而提高光刻胶线宽控制方面，AZ的底部防反射涂层材料是一种必需的手段。该产品范围覆盖了I线/KrF/ArF工艺，另外，它也适用于Via-first的Dual Damascene工艺

特征

- 1) 对I线/KrF/ArF等高分辨率光刻胶具有很好的亲和性
- 2) 中性成分组成以及高温交联剂的使用使之具有很大的工艺窗口
- 3) AZ在底部防反射层和通孔填充材料应用方面有着丰富的经验

参考工艺条件

- BARC涂布 : 根据产品不同而有着不同的优化膜厚
 BARC前烘 : 180°C 以上
 光刻胶涂布 : 根据不同光刻胶推荐的条件
 光刻胶前烘 : 根据不同光刻胶推荐的条件
 曝光 : 根据不同产品而光刻波长不同
 曝光后烘烤 : 根据不同光刻胶推荐的条件
 显影 : 根据不同光刻胶推荐的条件
 BARC蚀刻 : 氧等离子体灰化等
 金属层蚀刻 : 根据衬底不同而选择适合的工艺条件
 剥离 : 氧等离子体灰化等

*BARC涂布时推荐使用AZ EBR-7030作为清洗液

Bottom Anti Reflective Coating For Ultra High Resolution Patterning

AZ BARC materials are essential item to improve the photoresist linewidth-control by reducing the reflection from the substrate, especially from high reflective substrate

The product ranges are optimized for i-line/KrF/ArF process. Besides, it is possible to correspond for via first Dual Damascene process

FEATURES

- 1) High affinity for various high resolution resist for i-line & KrF application.
- 2) Wide process margin due to high temperature cross linker (>140°C) and neutral
- 3) Many experience for BARC and hole filling material application

SAMPLE PROCESS CONDITIONS

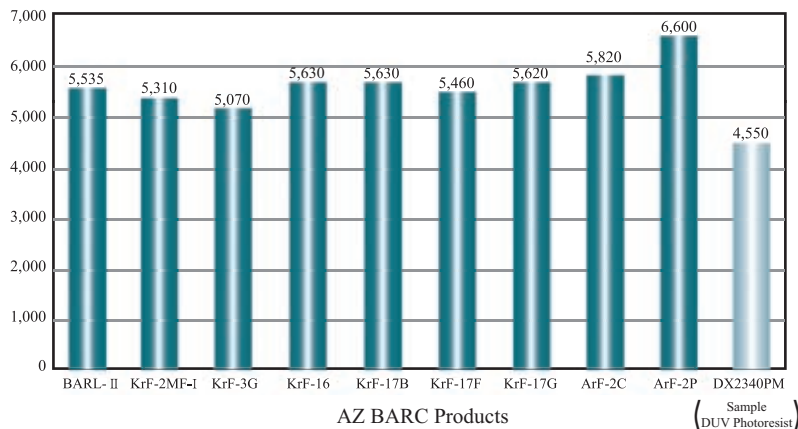
- BARC Coating : The optimum FT depends on product
 BARC Pre-bake : >200°C
 Resist Coating : Depend on Resist recommended condition
 Resist Pre-bake : Recommended condition by kind of resist
 Exposure : (Exposure wave length depends on product)
 PEB : Depend on Resist recommended condition
 Developing : Depend on Resist recommended condition
 BARC Etching : O₂ ashing etc.
 Metal of etching : Most suitable condition depend on each substrate
 Stripping : O₂ ashing etc.

*we recommend you the exclusive AZ EBR-7030 for rinsing on BARC Coating

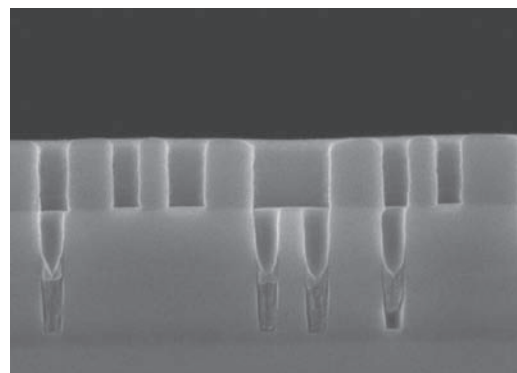
产品型号(PRODUCT RANGE)

Product Range	AZ BARLi-II			AZ KrF-BARC SERIES			AZ ArF-BARC SERIES
Product Name	AZ BARLi-II-90	AZ BARLi-II-50	AZ BARLi-II-200	AZ KrF-17B	AZ KrF-17G7	AZ KrF-21D	AZ ArF-1C5D
Optimum Exposure	i-line (365nm)			KrF (248nm)			ArF (193nm)
n-value	1.63			1.46	1.46	1.48	1.57
k-value	0.31			0.46	0.40	0.51	0.51
Resist Compatibility	All Purpose			All Purpose	All Purpose	Acetal	
Filling Property	Conformal			Partial filling	Full filling	Partial filling	Conformal

BARC Etching Rate Comparison



Via-filling Property of AZ KrF-BARC



(Sample DUV Photoresist)

AZ RELACS 涂布材料

AZ R200 & R500 涂布材料

应用于超高分辨率图形加工的 光刻胶收缩材料

这是一种十分简单的工艺，通过涂布该材料和热处理之后在光刻胶涂层内形成硬化层，从而获得小于0.1微米的通孔尺寸(或沟槽线宽)的微细图形

可溶于溶剂型：AZ R200(使用AZ R200显影液)

可溶于纯水型：AZ R500(使用去离子水显影与清边)

特征

- 1) 在标准光刻工艺无法处理的领域达到超高分辨率
- 2) 适用于KrF和I线光刻胶
- 3) 适用于沟槽，线条，通孔等各种图形

参考工艺条件

光刻胶成型 : 光刻胶的推荐工艺
RELACS涂布 : 厚度0.35微米
RELACS前烘 : 85°C 70秒(DHP)
混合烘烤 : 110°C 70秒(DHP)
显影(R200涂布): AZ R2显影液 23°C 60秒, Dynamic
显影(R500涂布): 去离子水 23°C 70秒, Dynamic
显影后烘烤 : 110°C 120秒(DHP)

Resist Shrinking Material for Ultra High Resolution Patterning

It is easy process to get ultra fine pattern for less than 0.10μm of hole diameter(or trench width) according to form of the hardened layer on the pattern wall with coating and heat-treatment

Solvent soluble type: AZ R200 (Exclusive use AZ R2 Developer)

Water soluble type: AZ R500(Use DI-water for developing and EBR)

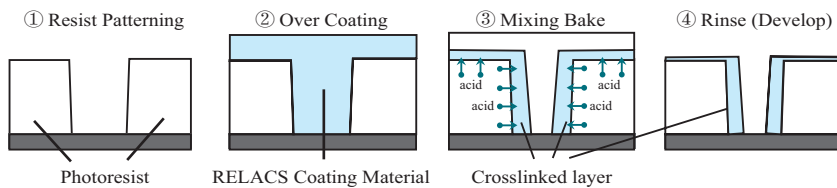
FEATURES

- 1) To achieve Ultra fine process for impossible handing area at standard lithography
- 2) Possible to apply for KrF and i-line resist
- 3) Available for trench and L/S pattern besides hole pattern

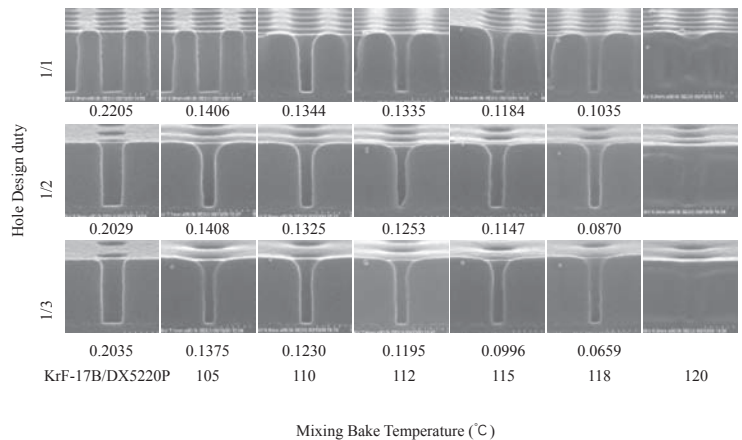
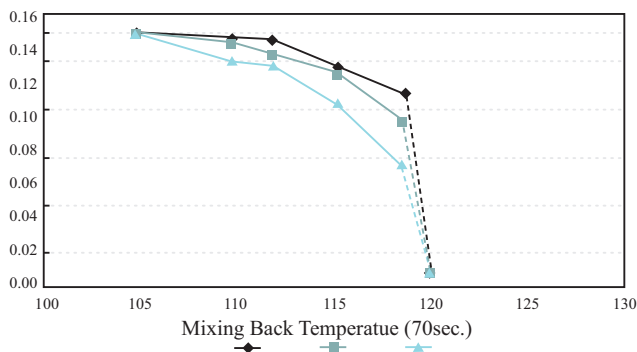
SAMPLE PROCESS CONDITIONS

Resist Patterning Process : Resist's recommended condition
RELACS Coating : Thickness 0.35μm
RELACS Pre-bake : 85°C 70sec.(DHP)
Mixing-bake : 110°C 70sec.(DHP)
Developing(R200 Coating) : AZ R2 Developer 23°C 60sec.Dynamic
Developing(R500 Coating) : DI-water 23°C 70sec.Dynamic
Post Development bake : 110°C 120sec.(DHP)

RELACS Pattern Shrinking Process Flow



RELACS R500 Mixing Temp. Dependency



Process Condition

RELACS :AZ R500
Film Thickness :0.35μm
Mixing Bake :105-120°C 70sec.
Developing :DI-Water 23°C 60sec. Dynamic Rinse
Post Developing :110°C 70sec.

AZ 8100 系列光刻胶

应用于TAB制造和柔性衬底工艺的 正型光刻胶

该光刻胶有着高附着性和高柔韧性，最适用于在柔性衬底上实现高精度图形加工。使用安全溶剂PGMEA

特征

- 1) 高附着性和高柔韧性，最适用于在柔性衬底工艺上
- 2) 高感光度，高产出率
- 3) 该光刻胶有着很好的分辨率和热稳定性，从而实现很窄的线宽

参考工艺条件

前烘	: 90°C~100°C 15~30分钟(烘箱)
曝光	: G线步进式曝光机/接触式曝光系统
显影	: AZ303N显影液(1:4) 23°C 60秒
清洗	: 去离子水30秒
后烘	: 100°C~120°C 15~30分钟(烘箱)
剥离	: AZ剥离液

产品型号(PRODUCT RANGE)

Product Name	AZ 8112	AZ8100DB5	
Viscosity	28mPa	12mPa	23mPa

Positive-tone Photoresist for TAB manufacturing and process on Flexible Substrate

The most suitable for high precision patterning on flexibility substrate by high adhesion and high flexibility property

It is formulated with safer PGMEA

FEATURES

- 1) Suitable for process on flexible substrate by high adhesion property and high flexibility
- 2) To achieve high throughput by high sensitivity
- 3) It is possible for narrow pitch by excellent resolution and heat stability

SAMPLE PROCESS CONDITIONS

Pre-bake	: 90°C~100°C 15~30min.(Oven)
Exposure	: g-line stepper and/or Contact Aligner
Developing	: AZ303N developer (1:4)23°C 60sec.
Rinse	: DI-water 30sec.
Post-bake	: 100°C~120°C 15~30min.(Oven)
Stripping	: AZ Remover

Photo-sensitivity (AZ 8100DB5)

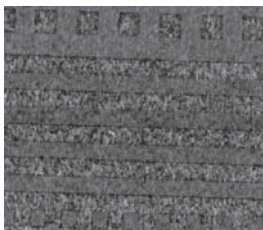
Resist	Different Film Thickness Condition <AZ 303N Dev. (1:4) 60sec. Development>			Different Film Thickness Condition <3.0 μm Film thickness>		
	3.0 μm	4.0 μm	5.0 μm	1:4	1:5	1:6
AZ 8100DB5	220mj/cm ²	290mj/cm ²	350mj/cm ²	220mj/cm ²	290mj/cm ²	350mj/cm ²

Process Condition

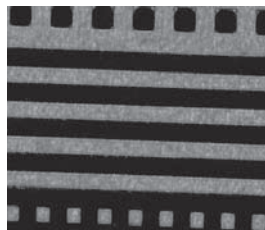
Substrate	: Si wafer
Pre-bake	: 100°C 120sec.(belt type hot plate)
Exposure	: PLA-501F
Developing	: AZ303N Developer 23°C Immersion 60sec.

Adhesion Property

After Developing



After Etching



Process Condition

Substrate	: Cu on TAB
Pre-bake	: 100°C 120sec.(belt type hot plate)
Exposure	: PLA-501F
Developing	: AZ303N Developer(1:4)23°C Immersion 60sec.
Post-bake	: 100°C 45min.(Clean Oven)
Etching	: HCl+FeCl ₃ 40°C Immersion 320sec.
Observation	: Microscope 13μm line & space

AZ P1350 系列光刻胶

应用于光罩制造及光媒介原盘制造的 旋涂正型光刻胶

该光刻胶是为了需要高附着性的工艺而研发，也适用于CD,LD,VCD等光盘的制造

特征

- 1) 在大尺寸玻璃称底上实现高涂布膜厚均匀性
- 2) 在铬称底上拥有高附着性
- 3) 使用安全溶剂PGMEA

参考工艺条件

前烘	: 110°C 90秒 (DHP)
曝光	: G线步进式曝光机/接触式曝光系统
显影	: AZ显影液(1:1) 23°C 60秒
清洗	: 去离子水30秒
后烘	: 120°C 120秒以上
剥离	: AZ剥离液及/或氧等离子体灰化

产品型号(PRODUCT RANGE)

Product Name	AZ P1350
Viscosity	4.8mPa

Positive-tone Photoresist for Photo-mask & Stamper of Photo-media by Spin Coating

This resist has been developed for high adhesion process. Also suitable for manufacturing of Compact Disk,Laser Disk,Video Disk

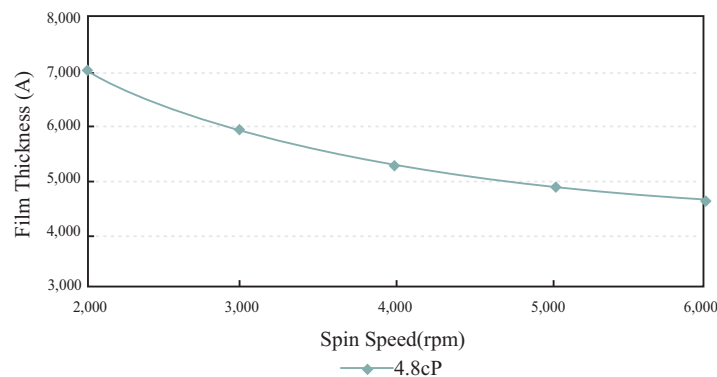
FEATURES

- 1) Good coating uniformity at large size glass substrate
- 2) Good adhesion property on Cr
- 3) It is formulated with the safer PGMEA

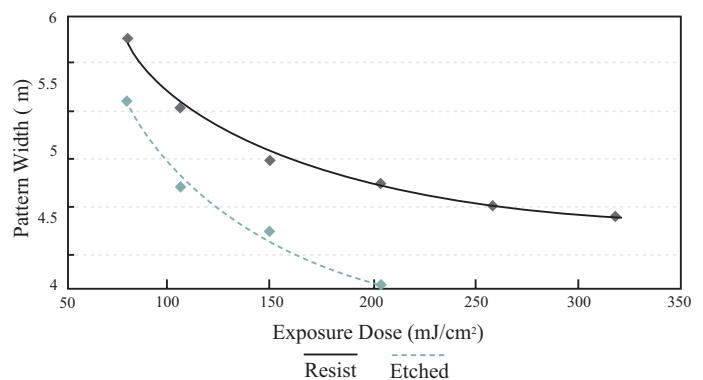
SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 90sec.(DHP)
Exposure	: g-line stepper and/or Contact Aligner
Developing	: AZ Developer(1:1)23°C 60sec.
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP)
Stripping	: AZ Remover and/or O ₂ plasma-ashing

Spin Curve



Spin Curve



AZ TFP-300[®]系列光刻胶

应用于液晶面板制造的 旋涂式正型I线光刻胶

为液晶面板制造，特别为彩色滤光片的Black Matrix制造工艺优化，使用安全溶剂PGMEA

特征

- 1) 在大面积玻璃称底上实现良好的涂布特性
- 2) 在铬膜和ITO薄膜上实现高附着性
- 3) 同时实现高附着性和高可去除性

参考工艺条件

前烘	: 100°C 90秒 (DHP)
曝光	: FPD曝光机
显影	: 氢氧化钾1.0wt% 23°C 60秒 AZ300MIF (TMAH2.38% 23°C 60秒)
清洗	: 去离子水 30秒
后烘	: 120°C 120秒 (DHP) 和/或15~30分钟 (烘箱)
剥离	: AZ剥离液及/或高浓度碱性溶液

产品型号(PRODUCT RANGE)

Product Name	AZ TFP-310K
Viscosity	6mPa

Coating Uniformity



Rotation: 45
Tilt: 45

Nanospec/AFT - 3D Contour Map (3次元表示)

Process Condition

Substrate	: 360X465mm Cr on Glass
Coating Tool	: DNS SC-451G(Closed type spin coater)
Pre-bake	: 100°C 30sec.(Proximity)+30sec.(Contact) +30sec.(Contact)
Film Thickness Measurement	:Nanospec Model 6500

Spin Coating Positive-tone Photoresist for Flat Panel Display

Optimized for FPD production, especially for Black Matrix of color filter. The solvent is safe with PGMEA

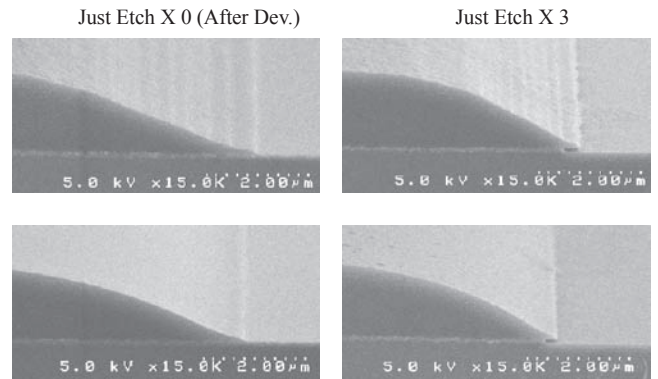
FEATURES

- 1) Good coating property on large size glass substrate
- 2) Good adhesion property on Cr.ITO
- 3) Good adhesion & good stripping

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 90sec.(DHP)
Exposure	: FPD Exposure tools
Developing	: KOH Solution 1.0wt% 23°C 60sec. AZ 300MIF(TMAH2.38% 23°C 60sec.).
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP) and/or 15~30min.(Oven)
Stripping	: AZ Remover and/or High density Alkali Solution

Adhesion Property



Process Condition

Substrate	: Cr(2000A) on Glass
Pre-bake	: 100°C 90sec.(DHP)
Film Thickness	: 1.5µm
Exposure	: PLA-501F(PRINT Gap:40µm)
Developing	: 1.0%KOH Immersion 60sec.
Post-bake	: None or 120°C 90sec.(DHP)
Etching	: Cr Etchant 23°C Just Etching TimeX1.3
Observation	: SEM

AZ TFP-600[®]系列光刻胶

应用于液晶面板制造的超高感光度， 旋涂式正型光刻胶

超高感光度及超高附着性正型光刻胶，适用于液晶面板制造，特别为 TFT 制造工艺优化，使用安全溶剂 PGMEA

特征

- 1) 由于高感光度和高残膜率实现高产出率
- 2) 在显影及蚀刻时在各种金属膜上实现高附着性
- 3) 同时实现高附着性和高可去除性

参考工艺条件

前烘	: 100°C 90秒 (DHP)
曝光	: FPD曝光机 (G线+H线)
显影	: AZ300MIF (TMAH2.38% 23°C 60秒)
清洗	: 去离子水 30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液

产品型号 (PRODUCT RANGE)

Product Name	AZ TFP-650F5	AZ TFP-650H2
Viscosity	15mPa	15mPa

Photo-Sensitivity

	Eop	Remained Film Thickness
Conventional Resist	40mj/cm ²	95%
AZ TFP-650F5	22mj/cm ²	93%

Process Condition

Substrate	: Si wafer
Pre-bake	: 100°C 90sec.(DHP)
Film Thickness	: 1.5µm
Exposure	: NIKON FX604F (g+h line stepper)
Developing	: AZ300MIF(TMAH2.38%) Immersion 60sec.

Ultra High Sensitivity Spin Coating Positive-tone Photoresist For Flat Panel Display

Ultra High Sensitivity & High adhesion property positive resist, Optimized For FPD manufacturing, especially TFT manufacturing. The solvent is safe with PGMEA.

FEATURES

- 1) Improvement for throughput by high sensitivity & high dark erosion
- 2) Good adhesion property on various metal film at developing & Etching
- 3) Good adhesion & good stripping

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 90sec.(DHP)
Exposure	: FPD Stepper (g-line+h-line)
Developing	: AZ 300MIF(TMAH2.38% 23°C 60sec.)
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP)
Stripping	: AZ Remover

Adhesion Property

Conventional Resist



AZ TFP-650F5



Process Condition

Substrate	: SiNx
Pre-bake	: 100°C 90sec.(DHP)
Film Thickness	: 1.5µm
Exposure	: g-line stepper
Developing	: AZ300MIF(TMAH2.38%) Immersion 60sec.

AZ SFP[®]系列光刻胶

应用于第五代液晶面板制造的 旋涂式正型光刻胶

AZ SFP系列适用于第五代液晶面板旋涂工艺，有更好的MURA缺陷控制特性

特征

- 1) 减少旋涂方式所产生的UROKO MURA缺陷
- 2) 在TFT工艺的各种金属膜上实现高附着性
- 3) 同时实现高附着性和高可去除性
- 4) 宽工艺窗口

参考工艺条件

前烘	: 110°C 90秒 (DHP)
曝光	: FPD曝光机
显影	: AZ300MIF (TMAH2.38% 23°C 60秒)
清洗	: 去离子水 30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液及/或高浓度碱性溶液

产品型号(PRODUCT RANGE)

Product Name	AZ SFP-1400	AZ SFP-1500
Viscosity	10mPa	

Spin Coat Positive-tone Photoresist for 5th Generation Flat Panel Display

AZ SFP series have been developed on better MURA property for 5th Generation substrates with spin-coat process

FEATURES

- 1) Reduced UROKO MURA, appeared by spin coating.
- 2) Good adhesion property on metal films for TFT manufacturing.
- 3) Realization for good adhesion and stripping property.
- 4) Wide process margin.

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 90sec.(Proximity)
Exposure	: FPD Exposure tools
Developing	: AZ 300MIF 23°C 60sec. Puddle
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.
Stripping	: AZ Remover and/or High density Alkali Solution

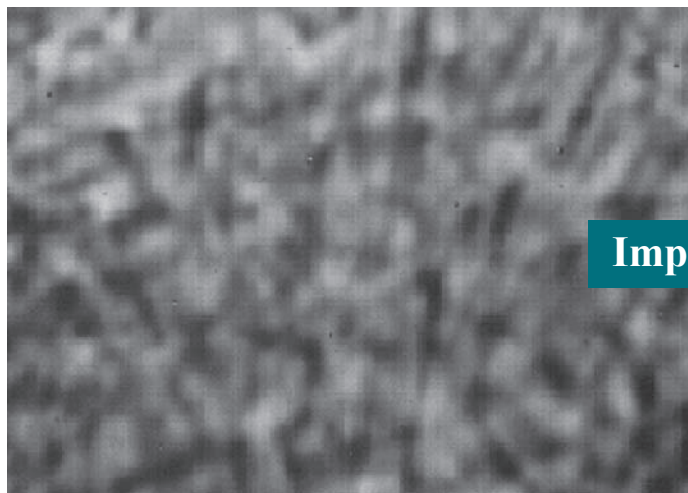
产品感光度(sensitivity)

Product Name	AZ SFP-1400	AZ SFP-1500
Eo	30~36 mJ/cm ² (depends on process conditions)	

Process Condition

Substrate	: 4inch bare Si wafer with HMDS
Film Thickness	: 1.5μm
Pre-bake	: 100°C /90sec.(Proximity)
Exposure	: Nikon FX-604F(NA=0.1)g+h line stepper
Developing	: AZ 300MIF(2.38% TMAH/60sec./23°C)

LCD/FPD



Conventional Resist



AZ SFP-1400

AZ SR 系列光刻胶

应用于第五代以上液晶面板制造的 Spin-less涂布正型光刻胶

AZ SR系列适用于第五代以上液晶面板Spin-less涂布工艺

特征

- 1) 适用于Spin-less涂布方式
- 2) 与旋涂式光刻胶相比，有同样良好的涂布均匀性
- 3) 节省光刻胶使用量以及节约能量
- 4) 工艺窗口很宽

参考工艺条件

前烘	: 110°C 90秒 (DHP)
曝光	: FPD曝光机
显影	: AZ300MIF (TMAH2.38% 23°C 60秒)
清洗	: 去离子水 30秒
后烘	: 120°C 120秒 (DHP)
剥离	: AZ剥离液及/或高浓度碱性溶液

产品型号(PRODUCT RANGE)

Product Name	AZ SR-100	AZ SR-110	AZ SR-210
Viscosity	3~4mPa		

Spin-less Coat Positive-tone Photoresist for Over 5th Generation Flat Paner Displays

AZ SR series have been developed and optimized for spin-less coating for over 5th generation substrate process

FEATURES

- 1) Optimized formulation for Spin-less coating.
- 2) Appeared good uniformity as same as spin coating.
- 3) Saving resist consumption and energy.
- 4) Wide process margin.

SAMPLE PROCESS CONDITIONS

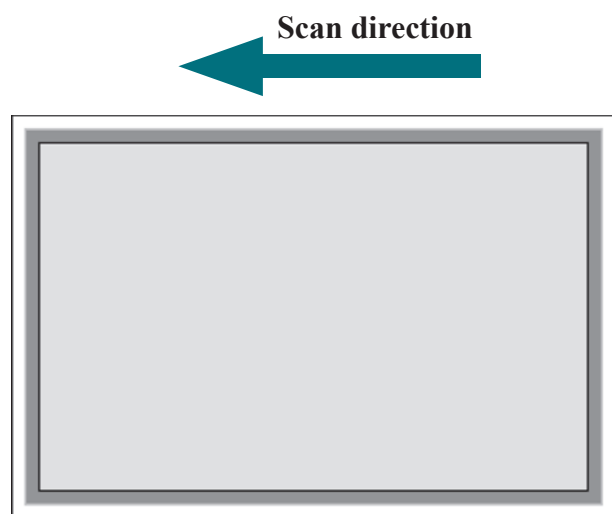
Pre-bake	: 100°C 90sec.(Proximity)
Exposure	: FPD Exposure tools
Developing	: AZ 300MIF 23°C 60sec. Puddle
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.
Stripping	: AZ Remover and/or High density Alkali Solution

产品感光度(sensitivity)

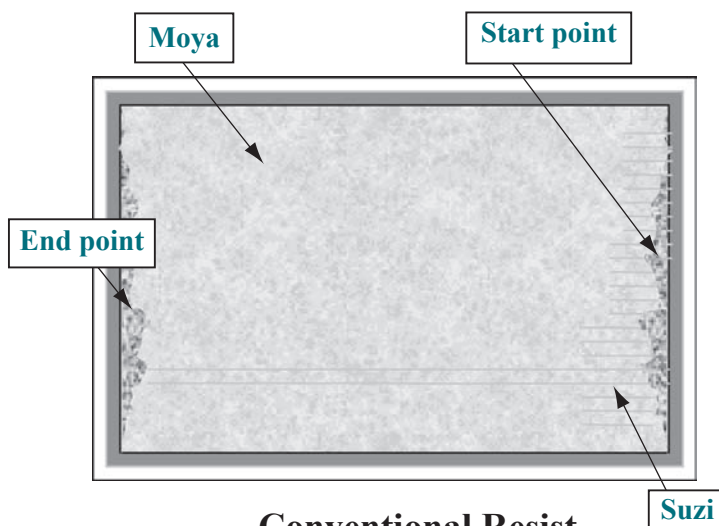
Product Name	AZ SR-100	AZ SR-110	AZ SR-210
Eo @ 1.5 μm	32~36 mJ/cm ² (depends on process conditions)		

Process Condition

Substrate	: 4inch bare Si wafer with HMDS
Film Thickness	: 1.5μm
Pre-bake	: 110°C/90sec.(Proximity)
Exposure	: Nikon FX-604F (NA=0.1) g+h line stepper
Developing	: AZ300MIF(2.38% TMAH/60sec./23°C)



AZ SR series
[for spin-less coating]



Conventional Resist
[for spin-coating]

AZ RFP 系列光刻胶

应用于液晶面板制造的 辊式涂布正型光刻胶

该光刻胶特别为辊式涂布而研发，使用安全溶剂PGMEA

特征

- 1) 由于高感光度实现高产出率
- 2) 在铬膜和ITO薄膜上实现高附着性
- 3) 同时实现高附着性和高可去除性

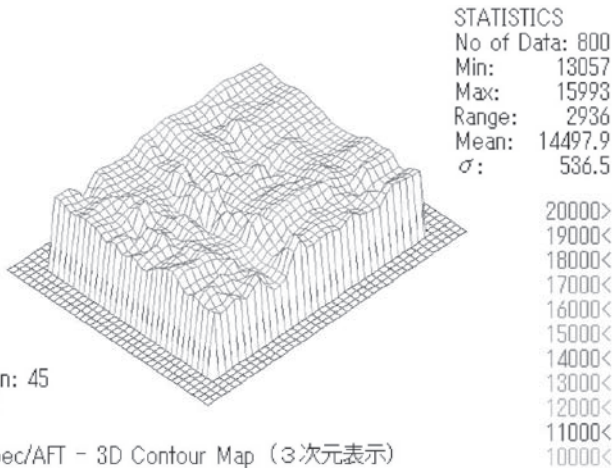
参考工艺条件

前烘	: 100°C 90秒 (DHP)
曝光	: FPD曝光机
显影	: 氢氧化钾1.0wt% 23°C 60秒
清洗	: 去离子水 30秒
后烘	: 120°C 120秒 (DHP) 和/或15~30分钟 (烘箱)
剥离	: AZ剥离液及/或高浓度碱性溶液

产品型号(PRODUCT RANGE)

Product Name	AZ RFP-210K	AZ RFP-230K2
Viscosity	30mPa	30mPa

Coating Uniformity (AZ RFP-210K)



Process Condition

Substrate	: 365X465mm Cr on Glass
Coating Tool	: DNS RC-353-p
Pre-bake	: 100°C 90sec.(DHP)
Film Thickness Measurement	: Nanospec Model 6500

Roll Coat Positive-tone Photoresist for Flat Panel Display

This Photoresist has been developed for Roll coating.
The solvent is safe with PGMEA

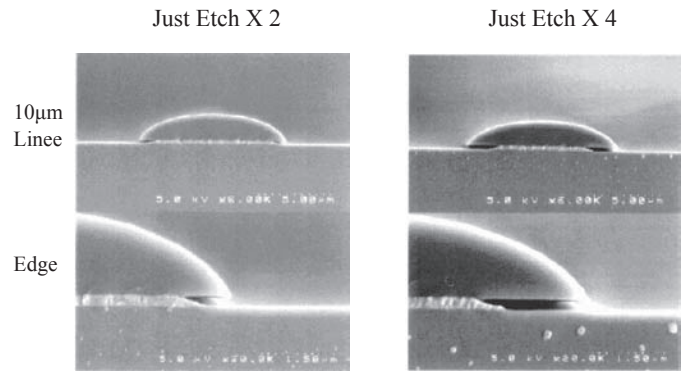
FEATURES

- 1) Achievement for high throughput by high photo-sensitivity
- 2) Good adhesion property on ITO and Cr substrate
- 3) Realization for good adhesion and stripping

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 90sec.(DHP)
Exposure	: FPD Exposure tools
Developing	: KOH solution 1.0wt%23°C 60sec.
Rinse	: DI-water 30sec.
Post-bake	: 120°C 120sec.(DHP) and/or 15~30min.(Oven)
Stripping	: AZ Remover and/or High density Alkali Solution

Adhesion Property (AZ RFP-230K2) (Etching Time)



Process Condition

Substrate	: Cr(2000A) on Glass
Pre-bake	: 100°C 90sec.(DHP)
Film Thickness	: 1.5µm
Exposure	: PLA-501F(Print Gap: 40µm)
Developing	: 1.0%KOH Immersion 60sec.
Post-bake	: 120°C 90sec.(DHP)
Etching	: Cr Etchant 23°C Just Etching TimeX2.4
Observation	: SEM

AZ CTP-100 系列光刻胶

应于有机电致发光显示器 阴极隔离的负型光刻胶

为阴极隔离而研发的负型光刻胶，它可以实现稳定的倒三角轮廓，并拥有很好的热稳定性和工艺窗口。使用安全溶剂PGMEA

特征

- 1) 由于高感光度和高残膜率实现高产率
- 2) 工艺窗口很宽
- 3) 物理特性优异，可当作残留材料

参考工艺条件

前烘	: 100°C 180秒 (DHP)
膜厚	: 2.5微米
曝光	: 宽频, 接近式曝光机
曝光后烘烤	: 100°C 90秒
显影	: AZ300MIF (TMAH2.38% 23°C 60秒)
清洗	: 去离子水 30秒
后烘	: 240°C 60秒 (烘箱)

产品型号(PRODUCT RANGE)

Product Name	AZ CTP-100K
Viscosity	27mPa

Negative-tone Resist for Cathode Separator on Organic EL Display

This negative resist has been developed for Cathode Separator which can make stable Anti-Taper-angle and has high thermal stability and wide process margin. Besides, it is formulated with safer solvent PGMEA

FEATURES

- 1) High thermal stable property on pattern shape
- 2) Wide process margin
- 3) Wide good physical property, it can be used as remaining material

SAMPLE PROCESS CONDITIONS

Pre-bake	: 100°C 180sec.(DHP)
Film Thickness	: 2.5μm
Exposure	: Broad band, Proximity Aligner
PEB	: 100°C 90sec.(DHP)
Developing	: AZ 300MIF(2.38%)23°C 60sec.
Rinse	: DI-water 30sec.
Post-bake	: 240°C 60min.(Oven)

Pattern Profiles

PEB Temperature Dependency

PEB Temp.

95°C



100°C



105°C



Developing Time Dependency

Developing Time

60sec.



120sec



180sec.



Heat Stability

Post-bake Temp.

none



150°C



200°C



250°C



300°C



LCD/FPD

辅助化学品系列

显影液

概要及特性

1) 高纯度有机碱性MIF显影液

AZ 300MIF显影液

无表面活性剂的标准显影液(TMAH2.38%)

适用于各种显影工艺如Puddle, Dip等

无表面活性剂使Spray显影成为可能

AZ 600MIF显影液

含表面活性剂的标准显影液(TMAH2.38%)

有效去除显影后及高对比度微细图形加工后的微小残留

2) 无机碱性水性显影液

AZ显影液

通用正型光刻胶显影液

由于含有金属离子, 它不是为半导体工业而优化。

AZ 400K显影液

用于厚膜正型光刻胶的专用显影液

有效抑止光刻胶表面的显影损失现象

AZ 303N显影液

AZ PLP系列光刻胶和AZ 8100系列光刻胶的专用显影液

OUTLINE & FEATURES

1) High purity organic aqueous alkali MIF developer

AZ 300MIF Developer

Standard developer without Surfactant(TMAH2.38%)

It is possible to use in each process of Puddle,Dip,

Spray because of non-surfactant formulation

AZ 600MIF Developer

Standard developer without Surfactant(TMAH2.38%)

It contributes removing of scum after developing and

high contrasts of fine pitch patterning

2) Inorganic aqueous alkali developer

AZ Developer

Developer for general purpose Positive-tone photoresist

It is not optimized for semiconductor process due to

containing of metal ion.

AZ 400K Developer

Exclusive Developer for Thick film Positive photoresist.

It contributes to reducing dark-erosion on resist surface.

AZ 303N Developer

Exclusive Developer for AZ PLP series & AZ8100 series

清洗液 / 稀释液

概要及特性

1) 晶背&晶边清洗

AZ EBR7030

用于晶背&晶边清洗, 以及cup清洗

由70%的 PGME和30%的 PGMEA组成

2) 光刻胶稀释液

AZ 5200Thinner(1500Thinner)

用于光刻胶的稀释以及晶片和coater-cup清洗

对于无烘烤工艺, AZ 5200Thinner可以当作去胶剂

组成成分是100%的PGMEA

OUTLINE & FEATURES

1) Back & Edge Rinse

AZ EBR7030

Suitable for stripping & back or edge rinsing on wafer,

also available for Cup rinsing.It is composed of 70%

PGME and 30% PGMEA.

2) Solvent for dilution of photoresist

AZ 5200Thinner(1500Thinner)

Suitable for dilution of photoresist and washing of wafers

and coater-cup.In case of non-bake,it is possible to use

as Remover.

It is composed of PGMEA 100%

HMDS

概要及特性

正型光刻胶粘附性促进材料

AZ AD PROMOTOR

AZ AD PROMOTOR通过改善光刻胶与称底的粘附性

从而提高工艺良率。

组成成分是六甲基二硅氮烷

OUTLINE & FEATURES

Adhesion promoting material for Positive-tone photoresist.

AZ AD PROMOTOR

AZ AD PROMOTOR improve the process yield in wet process by improving the adhesion properties of photoresists on substrate

Composed of 111,333-hexamethyl disilazane(HMDS)

辅助化学品系列

剥离液

特征

1) 正型光刻胶剥离液(胺型)

AZ Remover 100

AZ Remover 200

- * 含有水溶性有机溶剂，针对正型光刻胶优化的剥离液。可以使用原液或者按照1:1纯水稀释，但是如果对于会腐蚀的称底，只能使用原液
- * 对于后烘之后或者离子注入工艺中，推荐使用AZ Remover 200,高温剥离

剥离特性 (Removability)

Remover's Temp.	AZ Remover 100		AZ Remover 200	
	23°C	70~80°C	70~80°C	115~120°C
No	○	○	○	○
120°C	○	○	○	○
140°C	△	○	○	○
160°C	×	○	○	○
180°C	×	△	○	○
200°C	×	×	△	○

Photoresist :AZ 1500 ○: Removed within 5 min
 Film Thickness :1.8 μm △: Removed within 10 min
 ×: Not removed

2) 正型光刻胶剥离液(溶剂型)

AZ Remover 700

- * 针对会腐蚀的称底优化的剥离液
- * 可以在常温下使用，以减少高温挥发损失

AZ 400T Stripper (也可用于干膜和负胶)

- * 可去除plasma蚀刻后的有机残留
- * 减少金属离子污染
- * 去胶效率高 -- >2000 wafers/gallon
- * 对铝铜衬底不会腐蚀

3) Side-wall聚合体剥离液

AZ Remover 810S

- * 适用于剥离在后烘，离子注入和干法蚀刻之后的残留
- * 含有抗腐蚀剂以减轻对于称底的腐蚀性
- * 可适用于常温、短时间剥离工艺

OUTLINE & FEATURES

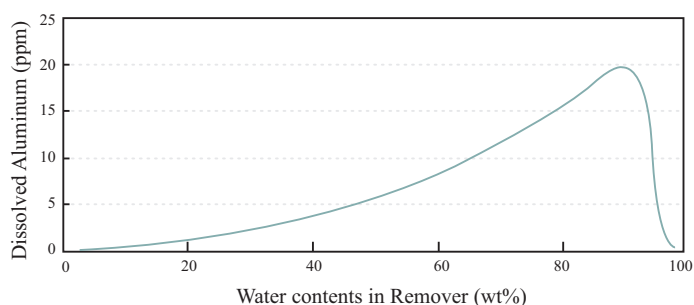
1) Amine Type Stripping Solution for Positive-tone photoresist

AZ Remover 100

AZ Remover 200

- * Optimized remover for possible positive-tone photoresist, containing water soluble solvent
- * Available for using both of as undiluted and 1:1 dilution
- * Do not use in diluted for corrodible substrate
- * Recommendable to use AZ Remover 200 in high temperature for substrates after hardening-bake and/or implantation process

Aluminum Dissolution vs. Water Contents



2) Solvent type Stripping Solution for positive-tone photoresist

AZ Remover 700

- * Optimized remover solution for corrodible substrate like aluminum.
- * Contribute to reducing evaporate loss because of room temperature use

AZ 400T Stripper(also for Dry-film and Negative PR)

- * Removes organic residues that remain after plasma etching
- * Reducing sodium contamination
- * High throughput—over 2000 wafers per gallon
- * Non-corrosive to aluminum and copper

3) Stripping Solution for Side-wall Polymer

AZ Remover 810S

- * Contribute with high solubility to removing residues after hardening-bake,implantation and dry-etching
- * Reducing corrosiveness with anti-corrosive agents
- * Available for short time stripping process in room temperature using