

AR-P 5300 series 產品說明

AR-P 5300系列產品為高敏感度正型光阻，適合電極等金屬蒸鍍懸浮剝離(lift-off)製程。

目前產品依配方與厚度範圍有如下序號：

		AR-P 5320	AR-P 5350
Film thickness@4000rpm	um	5.0	1.0
Resolution	um	2.0	0.5
Contrast		4.0	5.0
Flash point	°C	44	44
Storage 6 months★ ¹	°C	10 - 18	
Production status★ ²		on-demand	routine

★¹ Product is guaranteed 6 months shelf life from the data of sale if stored correctly.

在正確的儲存條件下,產品保證的有效期為銷售日起6個月

Product can also be used without guarantee until the date indicated on the label

在無提供保證的情況下,產品可使用至標籤上所示的有效期

★² Production status :

on-demand：產品無固定排程生產，需先詢問價格。可能會有最小量訂單，或需等待批次生產排程。

Routine：產品固定排程生產，交貨期約 2 - 4 週。

產品包裝:

✓ 250 ml/瓶

✓ 1 L /瓶

其它包裝可依客戶需求增加.

 [價格詢問](#)

 [其它諮詢](#)

出貨:

✓ 2 - 4 週。德國運出。

✗ 1 週。國內庫存。

(目前暫無國內庫存)

 [AR-P 5320 GHS 標識](#)

 [AR-P 5350 GHS 標識](#)

Characterization 產品特性

- broadband UV, i-line, g-line
曝光波長: 寬頻紫外線, i-line (365nm) , g-line (436nm)
- high photosensitivity, high resolution
高敏感度, 高解析度
- good adhesion properties
與基板介面接著度良好
- undercut structures for the production of evaporation samples, in particular of metal using lift-off techniques e.g., for conductor paths
下切結構適合金屬電極等蒸鍍及浮剝離技術
- plasma etching resistant, temperature-stable up to 120 °C
耐電漿蝕刻, 耐溫可達120°C
- combination of novolac and naphthoquinone diazide
主要成份為酚醛樹脂及疊氮基萘醌
- safer solvent PGMEA
使用較安全溶劑丙二醇單甲醚醋酸酯

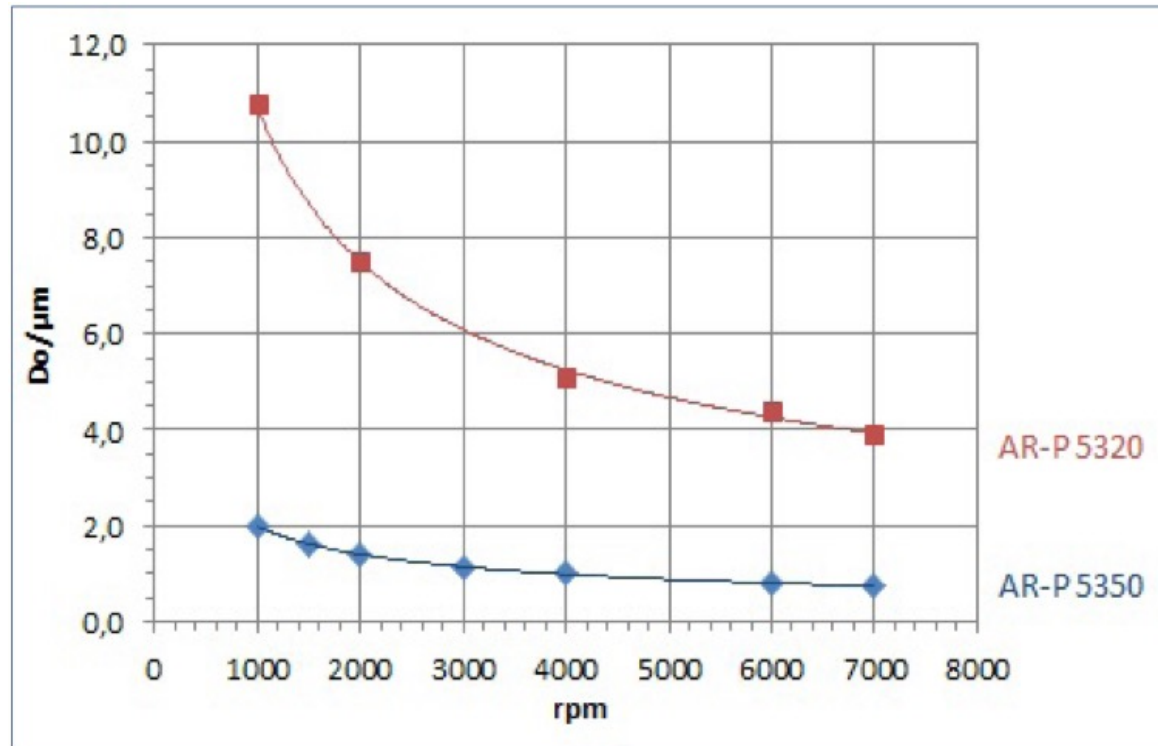
Property I

Parameter		AR-P 5320	AR-P 5350
Solids content	%	39	28
Viscosity@25°C	mPa.s	250	13
Film thickness@4000rpm	um	5.0	1.0
Resolution	um	2.0	0.5
Contrast		4.0	5.0
Flash point	°C	42	
Storage 6 months	°C	10 - 18	

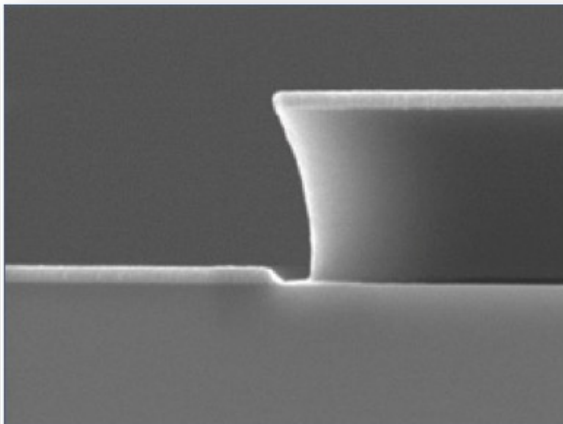
Property II

Glass trans. temperature	°C	108	
Dielectric constant		3.1	
Cauchy coefficients	N ₀	1.623	
	N ₁	166.8	
	N ₂	10	
Plasma etching rate 5 Pa, 240-250 V Bias	nm/min	Ar-sputtering	7
		O ₂	161
		CF ₄	39
		80 CF ₄ +16 O ₂	90

AR-P 5300 series Spin curve

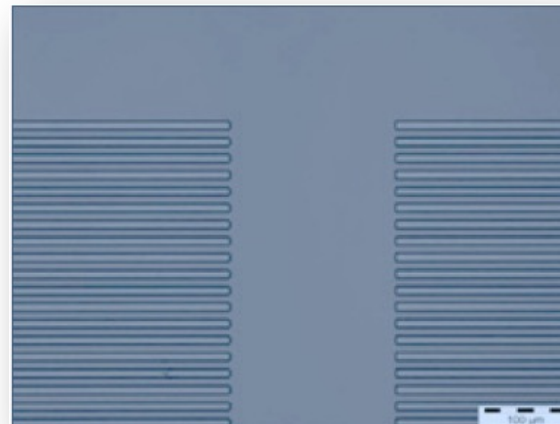


Lift-off resist structures



AR-P 5350 Lift-off resist structure after metal evaporation

Resist structures



AR-P 5320 Lift-off resist structure after development

Process parameter

Substrate	Si 4" wafer
Soft-bake	105°C x 4 min, hot plate
Exposure	g-line stepper (NA: 0.56)
Development	AR 300-35 (1:2), 60 sec, 22°C

Process chemicals

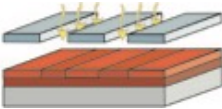
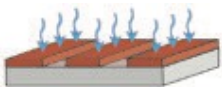
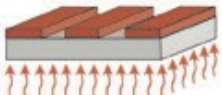
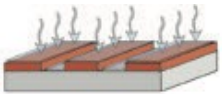
Adhesion promoter	AR 300-80
Developer	AR 300-26/AR 300-35
Thinner	AR 300-12
Remover	AR 300-76, AR 600-71

AR-P 5300 series Positive Photoresists for lift-off

Sensitive photoresist for the application of vapor deposition

This diagram shows exemplary process steps for AR-P 5300series resists. All specifications are guideline values which must be adapted to own specific conditions. For further information on processing, ☞“ Detailed instructions for optimum processing of photoresists”. For recommendations on wastewater treatment and general safety instructions, ☞“General product information on Allresist photoresists”.

圖示AR-P 5300系列產品製程參數的範例. 所有參數為參考值,使用者應依設備環境實際狀況加以調整

Coating		AR-P 5320	AR-P 5350
		4.0 um@6000rpm x 60 sec	1.0 um@4000rpm x 60 sec
Soft bake (± 1 °C)		105°C x 4 min, hot plate. or,	
		100°C x 40 min, convection oven	
UV exposure		Broadband UV, 365nm, 405nm, 436nm/Dose (E_0 , stepper)	
		58 mJ/cm ²	55 mJ/cm ²
Development (21-23 $\pm$ 0.5°C) puddle		AR 300-26 (3 : 2) x 2 min	AR 300-35 (1 : 2) x 60 sec
Rinse		DI water, 30 sec	
Post-bake (optional)		Not required	
Customer specific technology		Generation of semiconductor properties or lift-off	
Removal		AR 300-76 or O ₂ plasma ashing	

Reference data for process tuning

Processing instructions

Tempering:

Higher tempering temperatures are required to produce the undercut.

軟烤:

形成下切式結構需較高的軟烤溫度

Development:

The undercut of resist structures is generated during aqueous-alkaline development.

顯影:

下切式結構是在鹼性水溶液顯影程序下形成

Development recommendations

Resist	Developer		
	AR 300-26	AR 300-35	AR 300-40
AR-P 5320	2 : 1 to 3 : 2 (1-3 min)	--	--
AR-P 5350	1 : 7	1 : 2	AR 300-47 2 : 3