Thermostable Negative Resist SX AR-N 4340/7

Negative photoresist for one- and two-layer system

產品說明：

SX AR-N 4340/7 為耐高溫，化學增幅負型光阻，具高敏感度，sub-um解析度。耐溫可達300℃。下切型結構(lift-off應用)可經由曝光顯影參數調整或與AR-BR 5400 bottom resist搭配為雙層製程。(2-layer system)。

產品包裝與出貨:(為開發改良中/客製化產品，可依客戶需求訂製，無固定排程生產，購買請先詢問)

包裝：

- ✅ 250 ml/ /瓶
- ✅ 1,000 ml/ /瓶

出貨：

- ✅ 4 – 8 週

(非固定排程生產產品，確認訂單後估計可出貨時間

價格詢問 | 其它諮詢 | GHS標識

Characterization 產品特性

- i-line, g-line, deep UV (248 – 266 nm)
  曝光波長: i-line (365nm) , g-line (436nm), 深紫外光 (248 – 266nm)
- highest sensitivity, high resolution
  高敏感度,高解析度.
- good adhesion properties, high contrast, chemically enhanced
  化學增幅型,具高對比,與基板黏著度良好.
- undercut profiles (lift-off) are possible
  可調整成undercut圖案, 可用於lift-off製程.
- may be used with AR-BR 5400 as 2-layer system
  與AR-BR 5400搭配為雙層阻劑,用於懸浮剝離(lift-off)製程.
- plasma etching stable, thermostable up to 300°C
  耐電漿蝕刻. 耐溫可達攝氏300度
- polyhydroxystyrene polymer, with photochemical acid generator and aminic crosslinker
  成份含聚羥基苯乙烯高分子,光酸與架橋劑.
- Safer solvent PGMEA
  使用較安全溶劑丙二醇單甲醚醋酸酯

Thermostable Negative Resist SX AR-N 4340/7

Negative photoresist for one- and two-layer system

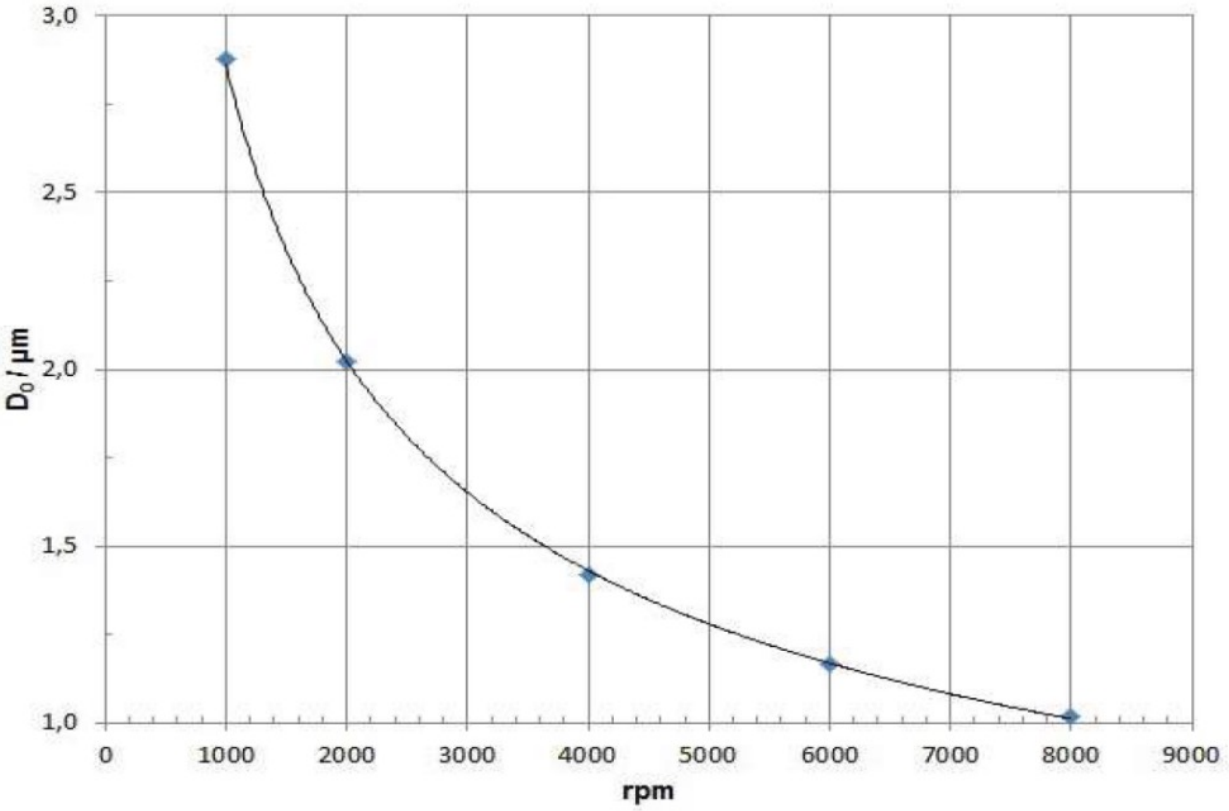
Property I			
Parameter		SX AR-N 4340/7	
Solids content	%	25	
Viscosity@25°C	mPa.s	38	
Film thickness@4000rpm	um	1.4	
Resolution	um	0.7	
Contrast		5.0	
Flash point	°C	44	
Storage 6 months	°C	10 - 18	

Property II			
Glass trans. temperature	°C	118	
Dielectric constant		3.1	
Cauchy coefficients	N_0	1.55	
	N_1	82.6	
	N_2	0	
Plasma etching rate 5 Pa, 240-250 V Bias	nm/min	Ar-sputtering	7
		O_2	175
		CF_4	45
		80 CF_4 +16 O_2	98

Thermostable Negative Resist SX AR-N 4340/7

Negative photoresist for one- and two-layer system

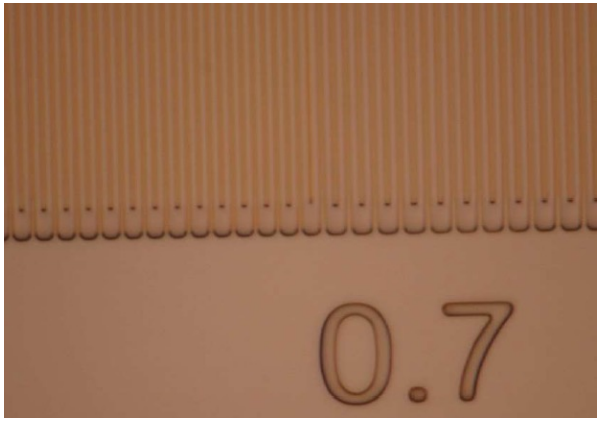
Spin curve of SX AR-N 4340/7



Thermostable Negative Resist SX AR-N 4340/7

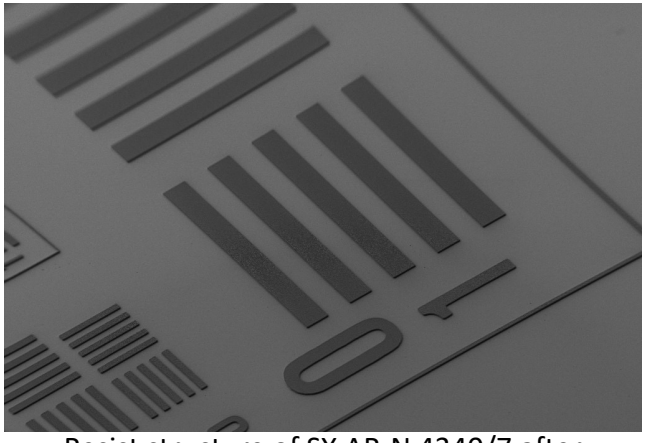
Negative photoresist for one- and two-layer system

Structure resolution



SX AR-N 4340/7 0.7 µm resolution at film thickness 1.4um

Resist structures



Resist structure of SX AR-N 4340/7 after tempering at 300°C

Process parameter

Substrate	Si 4” wafer
Soft-bake	90 °C x 60 sec, hot plate
Exposure	i-line stepper (NA: 0.65)
Development	AR 300-47 x 60 sec, 22 °C

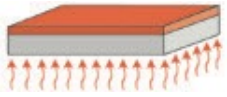
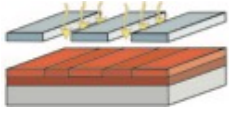
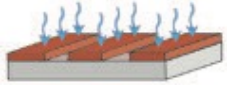
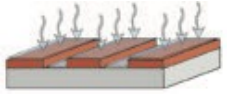
Process chemicals

Adhesion promoter	AR 300-80 new
Developer	AR 300-47
Thinner	AR 300-12
Remover	AR 600-71

Thermostable Negative Resist SX AR-N 4340/7

Negative photoresist for one- and two-layer system

This diagram shows exemplary process steps for resist SX AR-P 4340/7. 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SX AR-N 4340/7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		SX AR-N 4340/7 1.4 um@4000rpm x 60 sec
Soft bake (±1 °C)		90°C x 2 min hot plate, or 85°C x 30 min convection oven
UV exposure		i-line stepper Exposure dose (E_0 i-line stepper): 25 mJ/cm²
Cross-linking bake (±1°C)		95°C x 2 min hot plate, or 90°C x 30 min convection oven
Development (21-23±0.5°C) puddle		AR 300-47, 60 sec
Rinse		DI water, 30 sec
Customer specific technology		Generation of semiconductor property or lift-off
Removal		AR 600-71 or O_2 plasma ashing

Thermostable Negative Resist SX AR-N 4340/7

Negative photoresist for one- and two-layer system

Processing instructions for the generation of lift-off structures and supplementary information

An undercut of the resist structure (lift-off) can be obtained with a prolonged development after minimum exposure. The undercut and structures with vertical side walls remain even at high temperatures of up to 300 °C. This high temperature stability is also used in the two-layer system with AR-BR 5400 and allows intensive sputtering processes at very high temperatures (see product information AR-BN 5400).

懸浮剝離製程,光阻下切結構的形成,需降低曝光劑量並增加顯影時間. 此種下切型結構可耐溫達300℃.
與底層阻劑搭配使用,以雙層阻劑型成的深下切結構, 適合於高溫濺鍍製程.

This resist formulation is currently successfully processed by customers, may however also be modified according to new customer's requirements.
本產品配方已於客戶製程成功應用. 如果有新製程應用可調整配方以達到需求.