AR 600 series Developer

For the development of EBL resist

Product Brief 產品說明

AR 600系列為電子束微影專用顯影劑依成份分為下列產品編號:

序號	包裝	適用EBL 阻劑	主要成份	GHS標識連結
AR 600-50	1 L/瓶	AR-P 617 PMMA-MA copolymer resist	PGME/IPA	AR 600-50 label
X AR 600-50/2	1 L/瓶	new for AR-P 617(T-gate application)	Ethanol	X AR 600-50/2 label
AR 600-55	1 L/瓶	AR-P 600 PMMA resist	MIBK (stronger)	AR 600-55 label
AR 600-56	2.5 L/瓶	AR-P 600 PMMA resist	MIBK (weaker)	AR 600-56 label
AR 600-57	1 L/瓶	AR-P 600 PMMA resist	alcohol (MIBK free)	AR 600-57 label
AR 600-546	2.5 L/瓶	AR 6200 copolymer resist	amyl acetate(weaker developer)	AR 600-546 label
AR 600-548	1 L/瓶	AR 6200 copolymer resist	diethyl ketone /diethyl malonate	AR 600-548 label
AR 600-549	1 L/瓶	AR 6200 copolymer resist	diethyl malonate/ anisole	AR 600-549 label

✏️ 價格詢問　✏️ 其它諮詢

產品出貨: ✅ 2 - 4 週. 德國運出

❎ 1 週. 國內庫存 (目前暫無庫存)

Characterization 產品特性

- ultrapure, ultra-filtered (0.2 µm) solvent mixtures
  超純度,超細過濾(0.2um)的混合溶劑.
- storage at 10 - 22 °C for 6 months
  儲存溫度 10 – 22 °C 可維持6個月的有效期限

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AR 600 series developer properties
顯影劑物性

Safer solvent | optimal | Suited

Properties & resist	AR 600 developer family			
	AR 600-50	AR 600-51	AR 600-55	AR 600-56
application / conditions 製程 / 參數	immersion, puddle and spray development 21-23 ± 1 °C			
Main components 主要成分	methoxypropanol / isopropyl alcohol	butoxyethoxy ethanol	methyl isobutyl ketone (MIBK)	methyl isobutyl ketone (MIBK)
Property 特性			strong developer	weaker developer
Density at 20°C (g/cm^3) 密度	0.871	0.972	0.792	0.788
Refractive index at 20°C折射率	1.395	1.430	1.384	1.381
Water content max. (%)含水量	0.1	15	0.1	0.1
Flash point (°C) 閃火點	21	85	12	12
AR-P 617 EBL resist	2 – 3 min	- -	3 min	3 min
AR-P 630 – 670 series PMMA resist	- -	- -	1 – 3 min	1 – 3 min
AR-P 6500 thick EBL resist	- -	1 hour	- -	- -

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Properties & resist	AR 600 developer family dedicated to AR-P 6200 series resist		
	AR 600-546	AR 600-548	AR 600-549
application / conditions 製程 / 參數	immersion, puddle and spray development 21-23 ± 1 ℃		
Main components 主要成分	amyl acetate	diethyl ketone / diethyl malonate	diethyl malonate / anisole
Property 特性	weaker developer	strong developer	moderate developer
Density at 20℃ (g/cm^3) 密度	0.876	0.917	1.053
Refractive index at 20℃折射率	1.402	1.401	1.417
Water content max. (%)含水量	0.1	0.1	0.1
Flash point (℃) 閃火點	41	22	85
AR-P 6200 series EBL resist	1 min	1 min	1 min

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Information on developer processing

The choice of the developer strongly influences the development rate, the sensitivity and the profile of the resist structures. Coated and exposed substrates are treated with developers which are suitable for the respective process (puddle, spray, immersion bath) at a temperature of 21-23 °C kept as constant as possible. The required development time depends in each case on the resist film thickness. Films with a thickness of less than 0.2 µm can for example be completely developed after 30 s. The development process can be slowed down for AR 600-50, -55 and -56 by adding 10-20 % of the stopper AR 600-60.
Weaker developers like AR 600-56 and AR 600-546 provide a higher resolution without dark erosion, while a significantly higher sensitivity with at the same time higher dark erosion can be obtained with developers AR 600-55 and AR 600-548. If CSAR 62 is processed with developer AR 600-548 at a development temperature of about 0 °C, even after 10 minutes no erosion is observed at the prolonged development time. Substrates have to be rinsed immediately after development for 30 seconds with stopper and are subsequently dried.

顯影液的選用會影響到顯影速率,敏感度以及阻劑的結構. 基板經阻劑塗佈,曝光後依適合的顯影製程,(puddle,spray, immersion bath). 並將顯影溫度控制21-23°C之間並維持定溫. 顯影時間隨膜厚而變. 膜厚低於0.2um可於30秒後顯影完全. 在AR 600-50, -55, -56顯影劑加入10-20%的AR 600-60(顯影抑制劑)可降低其顯影速度.

較弱的顯影劑,例如 AR 600-56及AR 600-546可提供較高的解析度,而解不會侵蝕膜厚. 相較而言,AR 600-55及AR 600-548可提供較高敏感度,但同時其對膜厚的蝕刻也較高. 低溫顯影亦可降低膜厚侵蝕問提. AR 6200 (CSAR 62) EBL阻劑,以AR 600-548(強顯影劑)在0°C低溫顯影10分鐘也觀察不到膜厚遭侵蝕的問題.
基板需於顯影後30秒內以顯影抑製劑(stopper)沖洗並隨後乾燥.