

XR-1541 (HSQ) Resist

XR-1541 is a negative tone electron beam resist with high resolution and excellent dry-etching resistance

Characteristics:

- Negative tone
- High resolution
- Dry etch resistance comparable to most positive photo resists
- Not sensitive to white light

Resist available at TNFC	XR-1541 6%
Storage	8-12 °C
Surface Preparation	In general, no surface preparation aside from normal cleaning is necessary. Excellent adhesion to most surfaces.
Spin	Speed 1000-5000 rpm, 60 sec. (90-190 nm)
Pre-bake	80°C hotplate, 4 min.
Expose	Dose around 2000 $\mu\text{C}/\text{cm}^2$ at 100 kV.
Develop	TMAH 25% in H ₂ O, 4 min
Rinse	Running DI water 60 sec, then IPA 10 sec
Dry	By dry N ₂
Post-Bake	To improve dry etch resistance – 350°C hotplate, 30 min.
Descum	
Stripping	BOE, removal rate ~100nm in a few seconds

Link to XR-1541 manufacturer's data sheet:

https://tnfc.utoronto.ca/wp-content/uploads/2020/03/XR-1541_E-Beam_resist.pdf