

Allresist - New product developments from 2025

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Allresist develops, produces and distributes resists for optical and electron beam lithography as well as the associated process chemicals for the manufacture of electronic components. Our unique selling point is the development of resists according to customer requirements. With over 43 years of resist experience, and great flexibility, we have been able to manufacture technology-adapted resists cost-effectively in a short time since October 1992. Thereby standard products are ready for shipment already after 2-3 days. Allresist is constantly working to fulfil the requirements of our customers. For this reason, we would like to introduce our new product developments Medusa 84 SiH and Electra 94.

Hydrogen Silsesquioxane (HSQ) has emerged as a versatile material in various microfabrication processes due to its unique properties, including high thermal stability and excellent dielectric characteristics. However, its susceptibility to degradation over time has been a limiting factor in its widespread application. To overcome this problem, Allresist GmbH introduces Medusa 84 SiH, a new iteration of the purely inorganic HSQ $[\text{HSiO}_{3/2}]_n$. This innovative variant prevents the reactive Si-H in the material from degrading by incorporating a stabilizer, resulting in a significant extension of the product's shelf life as a liquid e-beam resist.

For insulating substrates, Allresist GmbH has developed a modified version of the conductive resist - Electra 94, especially adapted for use with Medusa 84 SiH. This adaptation ensures reliable adhesion to the highly hydrophobic surface of Medusa 84 SiH, allowing highest resolution, especially on insulating substrates such as quartz (Figure 2).

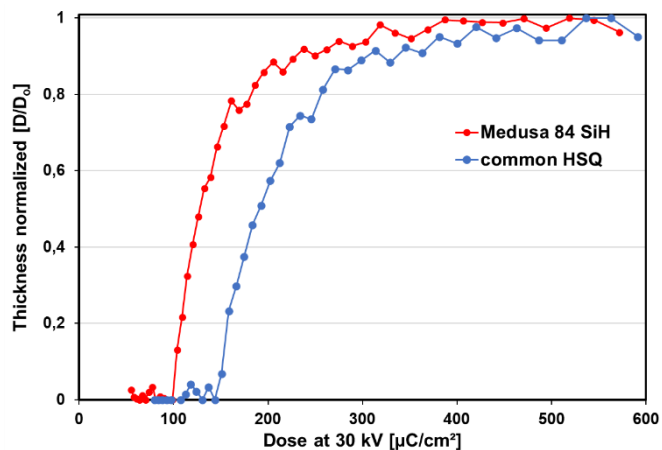


Figure 1: Contrast curves of Medusa 84 SiH in comparison of common HSQ, dev: TMAH 6.5% 90s, stop: 60 s H₂O.

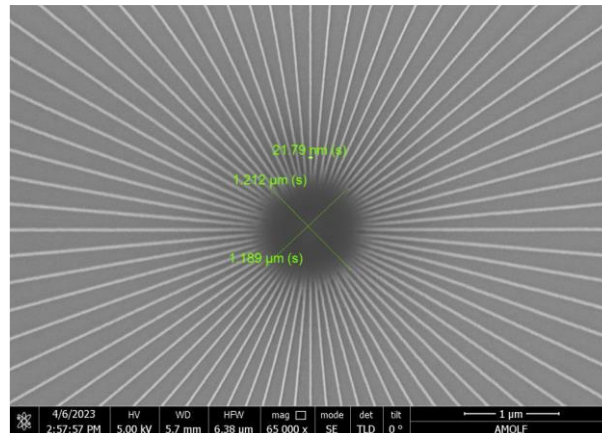


Figure 2: Lines of the Siemens star generated up to 22 nm wide using AR-PC 5094.02 on HSQ.
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