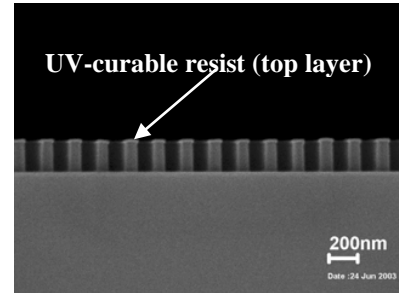


Product Information

NXR-2030 UV-Curable Nanoimprint Resist



NXR-2030 UV-curable resist is designed for fabricating from sub-10nm nanometer scale to micron scale structures and patterns. NXR-2030 nanoimprint resist offers ease of handling and processing, room-temperature and low pressure imprinting, and high etching selectivity related to NXR-3000 series under-layer resists in oxygen plasma. It has been thoroughly tested on Nanonex imprinters.

Film casting:

NXR-2030 UV-curable resist can be spin-coated using a standard spin coater in an environment with ultraviolet light filtered out. A 35% to 65% relative humidity of the environment is also generally required for coating quality films. A filter (0.2 μm) is recommended to use when applying the resist onto wafers. Spin curve(s) are provided in this document for some standard concentration(s) of this material. As the film thickness may vary from equipment to equipment, and may be affected by the atmospheric conditions, a precise desired film thickness can be achieved by fine adjusting the spin speed. Resist films can be prepared in thicknesses from sub-10nm up to microns, depending on resist concentration and spin-coating conditions. To preserve the resist and protect underlayer materials, no soft bake is recommended after spin coating of this resist. When not in use, the resist solution is recommended to be stored in refrigerator and with light blocked.

Imprinting and post processing:

To be used as a top imaging layer, NXR-2030 UV-curable resist is typically used together with a NXR-3000 series underlayer resist (such as NXR-3032, NXR-3022, and NXR-3010). Images and structures of cured NXR-2030 material are made by room temperature UV imprint process. The resist is cured using 200-410nm UV light in an oxygen-free environment. On 4-inch wafer level, the liquid UV resist can be imprinted at

about 30psi and cross-linked at a dosage of about 40mJ/cm². Solid resist structures/patterns with high resolution and excellent fidelity can be made.

After an appropriate residual layer removal by a suitable plasma etching, the patterns of NXR-2030 can be transferred to the NXR-3000 series underlayer material by oxygen plasma.

NXR-2030 resist can be etched by fluorinated plasma. In oxygen plasma, it provides etching selectivity of greater than 10 against NXR-3000 series underlayer materials.

Cleaning and Stripping:

Uncured NXR-2030 UV resist can be rinsed away by acetone or other organic solvent. If on top of a NXR-3032 or NXR-3022 under layer, which are dissolvable materials, whether the UV resist is cured or uncured, the whole layers can be removed away by thoroughly rinse with appropriate solvent that dissolves the under layer. Cured NXR-2030 UV resist can also be removed in fluorinated plasma or hot piranha solution.

