

DuPont Electronic Polymers

Custom Resins for the Semiconductor Industry



DuPont Electronic Polymers (EP) has developed a deep expertise in free radical polymerization chemistry, and has built a large portfolio of intellectual property covering major aspects of photoresist resin manufacture. EP is the only direct process, commercial scale producer of 4-Acetoxytoluene (ASM) monomer, the key raw material for free radical polymerization and production of 248 nm DUV resins, and EP leverages this knowledge base for its manufacture of resins for 193 nm lithography.

For leading edge 248 nm and 193 nm photolithography, which requires lower LER and lower defectivity, EP applies proprietary and patented RAFT technologies to produce polymers with low polydispersity and High Compositional Uniformity (HCU™).

EP manufactures custom made resins from a wide variety of monomers with processes that address the growing needs for reproducible and reliable transparency, polydispersity, glass transition temperature, dissolution rate, acid diffusion characteristics, high compositional uniformity, and other quality parameters essential to the performance of 248 nm and 193 nm photoresists. Resins are available in a wide variety of molecular weights and monomer ratios, as specified by the customer. Purified, ultra-low metals content resins are available in either neat, dry powder form, or in organic solvent solutions such as PGMEA or ethyl lactate at solid levels up to 40 wt%.

Leveraging our chemical expertise, I/P portfolio, and captive raw material supply base, EP operates the only North American commercial scale manufacturing facility dedicated to electronic grade resins used in resists for the 248 DUV and 193 nm lithographic applications.

EP's electronic grade resins meet or exceed the stringent demands of critical layer, back end and thick film 248 DUV photolithography and 193 nm photolithography for semiconductor chip manufacturing.



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