

Photoresist Compositions with Cyclic Olefin Polymers and Additive

Abstract

Acid-catalyzed positive photoresist compositions which are imageable with 193nm radiation and are developable to form photoresist structures of high resolution and high etch resistance are enabled by the use of a combination of cyclic olefin polymer, photosensitive acid generator and a compound selected from the group consisting of a hydrophobic non-steroidal alicyclic component, a hydrophobic non-steroidal multi-alicyclic component and a saturated steroid component. The cyclic olefin polymers preferably contain i) cyclic olefin units having polar functional moieties, ii) cyclic olefin units having acid labile moieties that inhibit solubility in aqueous alkaline solutions.