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(54) Title: PROCESS FOR PRODUCING FILM FORMING RESINS FOR PHOTORESIST COMPOSITIONS

(57) Abstract: The present invention provides a method for producing a film forming resin suitable for use in a photoresist composition, involving the following steps: (a) providing a solution of a film forming resin in a solvent, the film forming resin made by polymerizing at least one monomer containing a cycloolefin or an acid labile acrylate or a methacrylate; (b) providing at least one of the following two filter sheets: (i) a filter sheet containing a self-supporting fibrous matrix having immobilized therein a particulate filter aid (which has preferably been acid-washed) and particulate ion exchange resin particles having an average particle size of from about 2 to about 10 microns, where the particulate filter aid and ion exchange resin particulates are distributed substantially uniformly throughout a cross-section of said matrix; and/or (ii) a filter sheet containing a self-supporting matrix of fibers (preferably cellulose) having immobilized therein particulate filter aid and binder resin, the filter sheet preferably not containing any ion exchange resin embedded therein, and having an average pore size of 0.05 to 0.5 μm; (c) rinsing the filter sheet of step (b) with the solvent of step (a); and (d) passing the solution of the film forming resin through the rinsed filter sheet of step (c). The present invention also provides a method for producing a phtoresist composition by providing an admixture of: (1) a film forming resin prepared by the foregoing method; (2) a photosensitive component in an amount sufficient to photosensitize a photoresist composition; and optionally (3) an additional suitable photoresist solvent. The present invention also provides a method for producing a microelectronic device by forming an image on a substrate, by (a) providing the photoresist composition prepared by the foregoing method; (b) thereafter, coating a suitable substrate with the photoresist composition from step (a); (c) thereafter, heat treating the coated substrate until substantially all of the photoresist solvent is removed; and (d) imagewise exposing the photoresist composition and removing the imagewise exposed areas of the photoresist composition with a suitable developer.

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