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ACTION

(54) Title: METHOD OF REDUCING METAL ION CONTENT OF FILM-FORMING RESINS USING A LIQUID/LIQUID CENTRIFUGE

(57) Abstract: The present invention provides a method for reducing the metal ion content of a film-forming resin, said method comprising the steps of: a) providing a solution of the film-forming resin in a water-immiscible solvent system comprising at least one water-immiscible solvent; b) providing a washing solution comprising a dilute solution of a water-soluble metal ion chelating agent; c) feeding the solutions from a) and b) through two separate inlet ports into a liquid/liquid centrifuge, one of said inlet ports feeding solution from a), the second inlet port feeding the solution from b) into said liquid/liquid centrifuge at a feed rate ratio of the solution from a) to that from b) from about 10/90 to about 90/10, at a temperature of from about 0 °C up to a maximum temperature that is less than the boiling point of the lowest boiling water-immiscible solvent in the water-immiscible solvent system; and d) rotating the mixture from step c) inside said liquid/liquid centrifuge at a rotational speed sufficient to separate the mixture from step c) into two separate phases, and then collecting the two separate phases, each through a separate outlet port, into two separate containers, wherein the heavier phase (H) comprises the film-forming resin having a reduced metal ion content in the water-immiscible solvent system, with a minor amount of water; and the lighter phase (L) comprises: 1) an aqueous solution of metal ions and a minor amount of a mixture of 2) the water-immiscible solvent system, and 3) the film-forming resin. The present invention also provides for a method for producing a photoresist composition and a method for producing a microelectronic device utilizing a film-forming resin produced by the aforementioned method.

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