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ACTION

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(54) Title: POLYMERIC COMPOSITIONS AND USES THEREFOR

(57) **Abstract:** The present invention relates to polycyclic polymers, methods for producing polycyclic polymers, and methods for their use as photoresists in the manufacture of integrated circuits. In one embodiment, the present invention relates to photoresist compositions formed from the polymerization of at least one halogenated polycyclic monomer or hydrohalogenated polycyclic monomer. In another embodiment, the present invention relates to photoresist compositions formed from the copolymerization of at least one halogenated polycyclic monomer or hydrohalogenated polycyclic monomer with at least one non-halogenated polycyclic monomer. Additionally, the present invention relates to methods by which to post-treat such photoresist compositions in order to obtain one or more of: (1) a reduction in optical density of the polymer composition; and (2) a reduction in the amount of residual metal and/or monomer in the polymer composition. Also disclosed are catalyst systems for use in producing the photoresist compositions of the present invention which permit molecular weight control of the photoresist products.