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(54) Title: FLUORINATED POLYMERS, PHOTORESISTS AND PROCESSES FOR MICROLITHOGRAPHY

(57) Abstract: Fluorinated polymers useful in photoresist compositions and associated processes for microlithography are described. These polymers and photoresists have a fluoroalcohol functional group that simultaneously imparts high ultraviolet (UV) transparency and developability in basic media. The polymers also have a repeat unit derived from a C₁-C₂₅ alkyl hydroxymethylacrylate comonomer, e.g., tert-butyl hydroxymethylacrylate, or a C₅-C₅₀ polycyclic alkyl acrylate in which the polycyclic group contains a hydroxy group, e.g., hydroxyadamantyl acrylate. The materials of this invention have high UV transparency, particularly at short wavelengths, e.g., 193 nm and 157 nm, which makes them highly useful for lithography at these short wavelengths.

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