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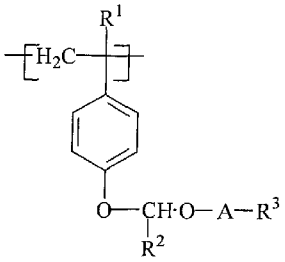
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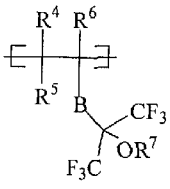
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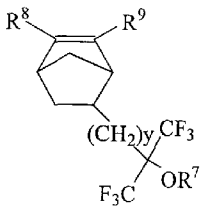
(54) Title: ACETAL PROTECTED POLYMERS AND PHOTORESISTS COMPOSITIONS THEREOF



(I)



(II)



(III)

(57) Abstract: A polymer comprises an acetal-containing monomer unit having the general structure (I) and at least one of the fluorine-containing monomer units having the general structures (II) and (III) wherein R^1, R^4, R^5 and R^6 are each independently H, lower alkyl, $CH_2CO_2R_{10}$, cyano, CH_2CN, or halogen, wherein R^{10} is any alkyl, cycloalkyl, aryl, arylalkyl, alkylenecycloalkyl, silyl or siloxy or linear or cyclic polysiloxane group; R^2 is $CHR^{11}R^{12}$ where R^{11} and R^{12} are each independently H, lower alkyl, cycloalkyl or aryl; A is a substituted or unsubstituted alkylene, cycloalkylene, alkylenecycloalkylene, or alkylenearylene; and R^3 is linear, branched or cyclic fluoroalkyl group or $SiR^{13}R^{14}R^{15}$ where R^{13}, R^{14}, and R^{15} are each independently alkyl, cycloalkyl, aryl, arylalkyl, alkylenecycloalkyl, silyl, siloxy, linear or cyclic polysiloxane or silsesquioxane alkyl group; B is an aryl, C(=O)-O-(CH_2)X where x=0-4, lower alkyl, cycloalkyl, alkene cycloalkyl, silyl, siloxyl, or linear or cyclic polysiloxane group. R^7 is H or an acid sensitive group; R^8 and R^9 are each independently H or -CN group; and y=0-4 and the use of these polymers in radiation sensitive compositions for exposure to actinic radiation, especially radiation of 157 nm.

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