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(54) Title: SILSESQUIOXANE RESINS

(57) Abstract: This invention pertains to silsesquioxane resins useful in antireflective coatings wherein the silsesquioxane resin is comprised of the units $(\text{Ph}(\text{CH}_2)_r\text{SiO}_{(3-x)/2}(\text{OR}')_x)_m$ $(\text{HSiO}_{(3-x)/2}(\text{OR}')_x)_n$ $(\text{MeSiO}_{(3-x)/2}(\text{OR}')_x)_o$ $(\text{RSiO}_{(3-x)/2}(\text{OR}')_x)_p$ $(\text{R}^1\text{SiO}_{(3-x)/2}(\text{OR}')_x)_q$ where Ph is a phenyl group, Me is a methyl group; R¹ is hydrogen atom or a hydrocarbon group having from 1 to 4 carbon atoms; R is selected from a hydroxyl producing group; and R¹ is selected from substituted phenyl groups, ester groups, polyether groups; mercapto groups, and reactive or curable organic functional groups; and r has a value of 0, 1, 2, 3, or 4; x has a value of 0, 1 or 2; wherein in the resin m has a value of 0 to 0.95; n has a value of 0.05 to 0.95; o has a value of 0.05 to 0.95; p has a value of 0.05 to 0.5; q has a value of 0 to 0.5; and $m + n + o + p + q \approx 1$.



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