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(54) Title: PHOSPHORUS-CONTAINING SILSESQUIOXANE DERIVATIVES AS FLAME RETARDANTS

(57) Abstract: A phosphorus-containing silsesquioxane is represented by the formula $[R^1SiO_{1/2}]_m[R^2SiO_{3/2}]_n[R^3-SiO_{3/2}]_p[(R^4O)_2PO(CH_2)_xSiO_{3/2}]_q$ wherein each of R^1 , R^2 , R^3 , and R^4 independently represents a hydrocarbyl group; x represents an integer of from 1 to 8; m is a positive number less than 1.5; n and q are positive numbers greater than 0 and less than 1; and p is a number greater than or equal to 0 and less than 1. Further, $(n + p)/q$ is in a range of from 0.5 to 99, and $(n + p + q) = 1$. Curable and cured compositions comprising the phosphorus-containing silsesquioxane are disclosed.



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