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(54) Title: ELASTOMERIC NANOCOMPOSITES, NANOCOMPOSITE COMPOSITIONS, AND METHODS OF MANUFACTURE

(57) Abstract: A nanocomposite is formed from at least one copolymer and at least one nanofiller. The copolymer is formed of units derived from isoolefins having from 4 to 7 carbon atoms and multiolefins. The nanofiller comprising a surfactant wherein the surfactant has the structure of $(R^1R^2R^3R^4)N^+$ wherein R^1 is benzyl derived unit, which may or may not be substituted, wherein R^2 is selected from C_1 to C_{26} alkyls, C_2 to C_{26} alkenes, and C_3 to C_{26} aryls, and wherein R^3 and R^4 are the same or different and are independently selected from C_9 to C_{26} alkyls, C_9 to C_{26} alkenes, and C_9 to C_{26} aryls.



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