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(54) Title: HIGH MOLECULAR WEIGHT POLYMERS



(57) Abstract: High and ultrahigh molecular weight (MW) homo- and copolymers having a three-dimensional random network structure are disclosed. The polymers have recurring structural units of the general formula $[AR]_n$, wherein A can be carbon, silicon, germanium, tin atoms, or other elements and compounds. R can be the same as or different from A (in each repeating unit), and can be hydrogen, saturated linear or branched-chain hydrocarbons containing from about 1 to about 30 carbon atoms, unsaturated ring-containing or ring hydrocarbons containing from about 5 to about 14 carbon atoms in the ring, each in substituted or unsubstituted form, polymer chain groups having at least 20 recurring structural units, halogens, or other elements or compounds. The number "n" can be at least 20, and the high MW polymers have a molecular weight of at least 10,000 daltons, e.g., about 30,000 daltons, and as high as 1,000,000 or more daltons.

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