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ABSTRACT

"NOVEL RANDOM COPOLYMER"

A random copolymer composed of ethylene, a 1,4,5,8-dimethano-1,2,3,4,4a,5,8,8a-octahydronaphthalene and optionally an alpha-olefin having at least three carbon atoms or cycloolefin. The mole ratio of polymerized units from the 1,4,5,8-dimethano-1,2,3,4,4a,5,8,8a-octahydronaphthalene to polymerized units from ethylene is from 3:97 to 95:5 and the 1,4,5,8-dimethano-1,2,3,4,4a,5,8,8a-octahydronaphthalene is incorporated in the polymer chain as polymerized units without ring-opening.

The copolymer is prepared by copolymerizing ethylene, optionally the alpha-olefin of at least 3 carbon atoms or cycloolefin, with the 1,4,5,8-dimethano-1,2,3,4,4a,5,8,8a-octahydronaphthalene in a hydrocarbon medium in the presence of a catalyst formed from a vanadium compound and an organoaluminum compound which are soluble in the hydrocarbon medium.

The copolymer has excellent transparency and a well balanced combination of heat resistance, heat aging resistance, chemical and solvent resistance, dielectric properties and mechanical properties such as rigidity.

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