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(54) **Title:** POLYMER COMPOSITIONS HAVING IMPROVED BARRIER PROPERTIES

(57) **Abstract:** A polymer having a melt index of from about 0.5 g/10 min to about 4.0 g/10 min and a density of equal to or greater than 0.96 g/cc which when formed into a 1-mil film displays a moisture vapor transmission rate ranging from equal to or greater than about 0 to equal to or about 20% greater than X where $X = k_1 \{-61.95377 + 39.52785(M_z/M_w) - 8.16974(M_z/M_w)^2 + 0.55114(M_z/M_w)^3\} + k_2\{-114.01555(T) + 37.68575(M_z/M_w)(T) - 2.89177(M_z/M_w)^2(T)\} + k_3 \{120.37572(T)^2 - 25.91177(M_z/M_w)(T)^2\} + k_4\{18.03254(T)^3\}$ when M_w is from about 100 kg/mol to about 180 kg/mol; M_z is from about 300 kg/mol to about 1000 kg/mol; T is from about 0.01S to about 0.35s; k_1 is 1 g/100in²-day; k_2 is 1 g/100in²-day-s; k_3 is 1 g/100in²-day-s²; and k_4 is 1 g/100in²-day-s³.

