



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C08L 23/08, C08F 290/04, 255/02	A1	(11) International Publication Number: WO 98/34986 (43) International Publication Date: 13 August 1998 (13.08.98)									
(21) International Application Number: PCT/US98/02648 (22) International Filing Date: 6 February 1998 (06.02.98) (30) Priority Data: <table border="0"><tr><td>60/037,323</td><td>7 February 1997 (07.02.97)</td><td>US</td></tr><tr><td>60/037,149</td><td>14 February 1997 (14.02.97)</td><td>US</td></tr><tr><td>60/065,739</td><td>17 November 1997 (17.11.97)</td><td>US</td></tr></table> (71) Applicant: EXXON CHEMICAL PATENTS INC. [US/US]; 5200 Bayway Drive, Baytown, TX 77520-5200 (US). (72) Inventors: GARCIA-FRANCO, Cesar, 830 Orchard Peak Court, Houston, TX 77062 (US). LOHSE, David, John; 556 Stoney Brook Drive, Bridgewater, NJ 08807 (US). MENDELSON, Robert, Allen; 16503 Scenic Peaks Court, Houston, TX 77059 (US). MILNER, S., T.; 15 Rupeles Road, Clinton, NJ 08809 (US). FETTERS, Lewis, John; 8 Bedford Court, Annandale, NJ 08801 (US). (74) Agents: MULLER, William, G. et al.; Exxon Chemical Company, P.O. Box 2149, Baytown, TX 77522-2149 (US).		60/037,323	7 February 1997 (07.02.97)	US	60/037,149	14 February 1997 (14.02.97)	US	60/065,739	17 November 1997 (17.11.97)	US	(81) Designated States: BR, CA, CN, JP, KR, MX, SG, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
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(54) Title: IMPROVED PROCESSING OLEFIN COPOLYMERS (57) Abstract The invention is directed to essentially saturated hydrocarbon polymer composition comprising essentially saturated hydrocarbon polymers having A) a backbone chain; B) a plurality of essentially hydrocarbyl sidechains connected to A), said sidechains each having a number-average molecular weight of from 2500 Daltons to 125,000 Daltons and an MWD by SEC of 1.0-3.5; and having A) a Newtonian limiting viscosity (η_0) at 190 °C at least 50 % greater than that of a linear olefinic polymer of the same chemical composition and weight average molecular weight, preferably at least twice as great as that of said linear polymer; B) a ratio of the rubbery plateau modulus at 190 °C to that of a linear polymer of the same chemical composition less than 0.5, preferably <0.3; C) a ratio of the Newtonian limiting viscosity (η_0) to the absolute value of the complex viscosity in oscillatory shear (η^*) at 100 rad/sec at 190 °C of at least 5; and D) a ratio of the extensional viscosity measured at a strain rate of 1 sec⁻¹, 190 °C, and time = 3 sec (i.e., a strain of 3) to that predicted by linear viscoelasticity at the same temperature and time of 2 or greater. Ethylene-butene prepared by anionic polymerization and hydrogenation illustrate and ethylene-hexene copolymers prepared by coordination polymerization illustrate the invention. The invention polymers exhibit improved processing characteristics in that the shear thinning behavior closely approaches that of ideal polymers and exhibit improved strain thickening.											