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(71) Applicant (for all designated States except US):
EXXONMOBILE CHEMICAL PATENTS INC. [US/US]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BRANT, Patrick** [US/US]; 1038 Shorewood Drive, Seabrook, TX 77586 (US). **CROWTHER, Donna, J.** [US/US]; 2725 Moss Court, Seabrook, TX 77586 (US).(74) Agents: **BELL, Catherine, L.** et al.; ExxonMobil Chemical Company, Law Technology, P O Box 2149, Baytown, TX 77522-2149 (US).

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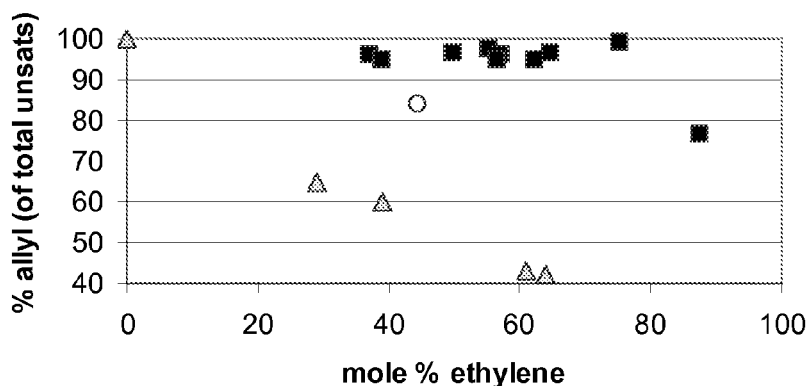
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(54) Title: FUNCTIONALIZED HIGH VINYL TERMINATED PROPYLENE BASED OLIGOMERS

Figure 1



(57) Abstract: This invention relates to a functionalized co-oligomer having an Mn of 300 to 30,000 g/mol comprising 10 to 90 mol% propylene and 10 to 90 mol% of ethylene, wherein the oligomer has at least X% allyl chain ends, where: 1) X = (-0.94 (mol % ethylene incorporated) + 100), when 10 to 60 mol% ethylene is present in the co-oligomer, and 2) X = 45, when greater than 60 and less than 70 mol% ethylene is present in the co-oligomer, and 3) X = (1.83* (mol% ethylene incorporated) - 83), when 70 to 90 mol% ethylene is present in the co-oligomer. This invention also relates to a functionalized homo-oligomer, comprising propylene, wherein the oligomer has: at least 93% allyl chain ends, an Mn of about 500 to about 20,000 g/mol, an isobutyl chain end to allylic vinyl group ratio of 0.8: 1 to 1.2: 1.0, and less than 100 ppm aluminum. This invention also relates to a process of making functionalized homo-or co-oligomer, comprising propylene, wherein the productivity is greater than 4500 g/mmol Hf (or Zr)/hour.



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