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(54) Title: OLEFIN FUNCTIONALIZATION BY METATHESIS REACTION

(57) Abstract: This invention relates to a process to functionalize propylene co-oligomer comprising contacting an alkene metathesis catalyst with a heteroatom containing alkene, and a propylene a 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 (mole% ethylene incorporated) + 100), when 10 to 60 mole% ethylene is present in the co-oligomer, and 2) X = 45, when greater than 60 and less than 70 mole% ethylene is present in the co-oligomer, and 3) X = (1.83* (mole% ethylene incorporated) -83), when 70 to 90 mole% ethylene is present in the co-oligomer. This invention also relates to a process to functionalize propylene homo-oligomer comprising contacting an alkene metathesis catalyst with a heteroatom containing alkene, and a propylene 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.



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