

HIGH VINYL TERMINATED PROPYLENE BASED OLIGOMERS

ABSTRACT OF THE DISCLOSURE

This invention relates to 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) $X = (-0.94 (\text{mole\% ethylene incorporated}) + 100)$, 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) $X = (1.83 * (\text{mole\% ethylene incorporated}) - 83)$, when 70 to 90 mole% ethylene is present in the co-oligomer. This invention also relates to a 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 homo-oligomer, comprising propylene, wherein the productivity is greater than 4500 g/mmol Hf (or Zr)/hour.

(Figure 1)