

ABSTRACT**IMPROVED POLYMERIZATION PROCESSES USING METALLOCENE CATALYSTS,
THEIR POLYMER PRODUCTS AND END USES**

A process for the production of an ethylene alpha-olefin copolymer is disclosed, the process including polymerizing ethylene and at least one alpha-olefin by contacting the ethylene and the at least one alpha-olefin with a metallocene catalyst in at least one gas phase reactor at a reactor pressure of from 0.7 to 70 bar and a reactor temperature of from 20°C to 150°C to form an ethylene alpha-olefin copolymer. The resulting ethylene alpha-olefin copolymer may have a density D of 0.927 g/cc or less, a melt index (I₂) of from 0.1 to 100 dg/min, a MWD of from 1.5 to 5.0. The resulting ethylene alpha-olefin copolymer may also have a peak melting temperature T_{max second melt} satisfying the following relation: $T_{\text{max second melt}} > D \cdot 398 - 245$.

No Suitable Figure