

ABSTRACT

PROCESS TO PRODUCE MODIFIED CLAY, SUPPORTED METALLOCENE POLYMERIZATION CATALYST, CATALYST PRODUCED AND USE THEREOF

Catalyst support-activator for olefin polymerization catalysts, and processes for making, the support-activator comprising an intercalated, modified and calcined smectite clay comprising (a) pillars comprising aluminum and optionally: (i) at least one rare earth or lanthanide group metal; or (ii) at least one rare earth or lanthanide group metal and gallium; and (b) at least one ion-exchanged metal ion selected from the group consisting of aluminum, barium, beryllium, calcium, cerium, cesium, copper, chromium, gadolinium, gallium, germanium, hafnium, holmium, iron (II and III), lanthanum, lithium, magnesium, manganese, neodymium, potassium, praseodymium, rubidium, samarium, silver, selenium, sodium, strontium, tellurium, terbium, thallium, thorium, tin, titanium, uranium, ytterbium, yttrium, zinc and zirconium. The pillared clay exhibits a basal d_{100} spacing of: (A) 9 to 18 angstroms; or (B) equal to or greater than about 18.5 angstroms. Use of the modified clays, with metallocene catalyst precursor components, provides active olefin polymerization catalysts, preferably in the substantial absence of aluminoxanes or boron-containing compounds.

(No suitable figure)