

ABSTRACT

PROCESS TO PRODUCE MODIFIED CLAY, MODIFIED CLAY PRODUCED AND USE THEREOF

An intercalated, modified and calcined smectite clay comprising (a) pillars comprising aluminum and: (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 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; wherein the clay is characterized by a basal d_{001} spacing equal to or greater than about 18.5 angstroms; and processes for making. The modified clays are suitably used as catalyst support-activators and when used in combination with metallocene catalyst precursor components, can provide active catalysts for polymerizing at least one olefin, preferably in the substantial absence of aluminoxanes or boron-containing compounds.

(No suitable figure)