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(54) Title: MODIFICATIONS OF SULFATED BENTONITES AND USES THEREOF IN METALLOCENE CATALYST SYSTEMS FOR OLEFIN POLYMERIZATION

(57) Abstract: Sulfated bentonite compositions are characterized by a total pore volume from 0.4 to 1 mL/g, a total BET surface area from 200 to 400 m^2/g, and an average pore diameter from 55 to 100 Angstroms. The sulfated bentonite compositions also can be characterized by a d50 average particle size in a range from 15 to 50 μm and a ratio of d90/d10 from 3 to 15. The sulfated bentonite compositions can contain a sulfated bentonite and from 10 to 90 wt. % of colloidal particles, or the sulfated bentonite compositions can contain a sulfated bentonite and from 0.2 to 10 mmol/g of zinc and/or phosphorus. These compositions can be utilized in metallocene catalyst systems to produce ethylene based polymers.

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