

Heterogeneous Organotin Catalysts

ABSTRACT

This invention provides: (a) new organotin functionalized silanes; (b) a solid prepared by chemically bonding organotin functionalized silanes to a solid inorganic support containing surface hydroxy groups; (c) a solid catalyst prepared from said supported organotin functionalized silane;

5 (d) a process for conducting esterification or transesterification, and urethane, urea, silicone, and amino forming reaction utilizing said solid supported catalyst; (e) a process of separating the solid supported catalyst from the reaction products employing ligand - solid separation techniques; (f) reuse of the solid supported catalyst after being separated from the reaction products; (g) a continuous esterification or transesterification reaction or urethane, urea, silicone, or amino forming

10 reaction or urethane, urea, silicone, or amino forming reaction comprising passing reactants for a esterification or transesterification reaction or urethane, urea, silicone, or amino forming reaction or a urethane, urea, silicone, or amino forming reaction or a urethane, urea, silicone, or amino forming reaction reaction through a reactor containing a catalytically effective amount of said solid supported catalyst to form esterification or transesterification reaction or a urethane, urea, silicone, or amino

15 forming reaction or a urethane, urea, silicone, or amino forming reaction products in said reactor and removing said reaction products from said reactor; and (h) esterification or transesterification reaction or a urethane, urea, silicone, or amino forming reaction or urethane, urea, silicone, or amino forming reaction products produced with said solid, supported, tin-containing catalyst and said reaction products containing less than 100ppm tin by weight; and (i) the synthesis of organotin

20 silanes with and without a Lewis acid.