

NANOPARTICLE ADDITIVES AND LUBRICANT FORMULATIONS CONTAINING THE NANOPARTICLE ADDITIVES

Abstract of the Disclosure

A method for making a self-dispersing cerium oxide nanoparticles additive for lubricants, a lubricant composition containing the nanoparticles and a method for reducing boundary friction using the nanoparticles. The nanoparticles are made by an improved process of reacting a mixture of organo-cerium salt, fatty acid, and amine in the substantial absence of water and organic solvent at a temperature ranging from about 150° to about 250° C., the improvement comprising reacting the organo-cerium salt, fatty acid and amine in a molar ratio ranging from about 1:1:1 to about 1:2:2 in the reaction mixture to provide the reaction product comprising from about 20 to about 40 % by weight of the nanoparticles in a substantially organic medium.