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Study the Efficiency of Some Homopolymers as Lube Oil Additives

Authors : Amal M. Nassar, Nehal S. Ahmed, Rasha S. Kamal

Abstract : Some lube oil additives improve the base oil performance such as viscosity index improvers and pour point depressants which are the most important type of additives. In the present work, some homopolymeric additives were prepared by esterification of acrylic acid with different alcohols (1-dodecyl, 1-hexadecyl, and 1-octadecyl)and then homopolymerization of the prepared esters with different ratio of benzoyl peroxide catalyst (0.25%& 0.5 % and 1%). Structure of the prepared esters was confirmed by Infra-Red Spectroscopy. The molecular weights of the prepared homopolymers were determined by using Gel Permeation Chromatograph. The efficiency of the prepared homopolymers as viscosity index improvers and pour point depressants for lube oil was the investigation. It was found that all the prepared homopolymers are effective as viscosity index improvers and pour point depressants.

Keywords : lube oil additives, homopolymerization, viscosity index improver, pour point depressant
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