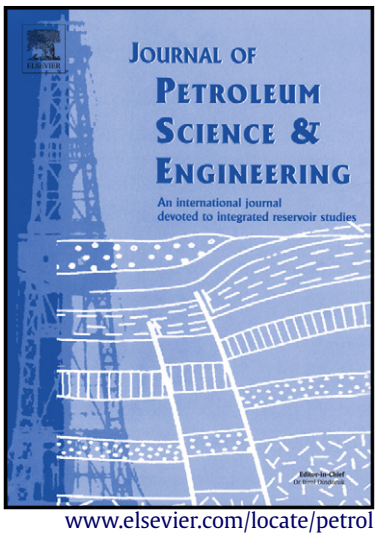

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Abstract

Polymeric flow improvers represent one of the most important chemicals used in oil industry especially with waxy crudes. The chemical structure of such chemicals is particularly important. In this study, we prepared a family of additives by chemical modification of octadecene-*co*-maleic anhydride copolymers (OM). The copolymerization of octadecene (OD) with maleic anhydride (MA) was performed at variable ratios of OD: MA (1:1, 1:2 and 2:1). OM copolymers were chemically modified by grafting three different alcohols dodecanol, hexadecanol or docosanol. Grafts were characterized through molecular weight using GPC, melting temperature and enthalpy of melting by DSC and chemical structure through ^{1}HNMR. The comb like copolymers were assessed as flow improver for an Egyptian waxy crude oil by measuring their performance as pour point depressant in addition to their assessment as viscosity improver through rheological behavior. The data indicate that, the additive must retain a hydrophobic-lypophobic balance, low crystallinity and matching melting temperature with that of crude wax in order to inhibit the paraffin and wax crystal depositions.

Modified Maleic Anhydride-*co*-Octadecene Copolymers as Flow Improver for Waxy Egyptian Crude Oil

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