

Evaluation of the Inhibitor Selection on Wax Deposition for Malaysian Crude Oil

N. Ridzuan, F. Adam & Z. Yaacob

Faculty of Chemical and Natural Resources Engineering, Universiti Malaysia Pahang, Kuantan,
Pahang, Malaysia

ABSTRACT

Wax precipitates from crude oil when a fluid is cooled down below its wax appearance temperature (WAT). This particularly happens during the transportation of crude oil in the pipeline system. In this study, chemical inhibitors were chosen to prevent and reduce wax formation using seven different types of inhibitors, which are poly (ethylene-co-vinyl acetate) (EVA), poly (maleic anhydride-alt-1-octadecene) (MA), diethanolamine (DEA), cocamide diethanolamine (C-DEA), toluene, acetone, and cyclohexane. The total waxes deposited from the cold finger test are subjected to the type of inhibitor, rotation speed of impeller, and inhibitor concentration. EVA is suggested as the most effective inhibitor based on the amount of wax deposit weight and the value of viscosity. Therefore, this result might be useful for further research work related to wax deposition in the area of crude oil production.

KEYWORDS: Cold finger temperature, crude oil, rotation speed of impeller, viscosity, wax deposition

DOI: 10.1080/10916466.2015.1127971