

Improvement of Egyptian Vacuum Distillates by Solvent Dewaxing

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Abstract : De-waxing of vacuum distillates by using solvent was investigated in the present study. The present work deals with studying solvent dewaxing system which have been developed to give better dewaxing performance with respect to the important factors in the choice of solvents which are good solubility of oil in the solvent and low solubility of wax in the solvent. In this study, solvent dewaxing process using Methyl Ethyl Ketone (MEK) and toluene are used for Egyptian vacuum distillates using two types of distillates. The effect of varying the composition of (MEK to toluene) on the percent yield of the oil, percent of wax, pour point, refractive index at 20 and 70°C, viscosity at 40 and 100°C, viscosity index and specific gravity of the oil produced for the two types of distillates (I & II) were evaluated. In the present study, the operating conditions of solvent dewaxing using MEK toluene mixture achieved the best pour point at -15°C for distillate I at (1:1) solvent composition mixture. At the same ratio of MEK to toluene the best specific gravity of oil produced changed from 0.871 to 0.8802, with refractive index of 1.84. Percent yield of 65% for oil was obtained. The results for distillate II, of higher specific gravity, are comparatively higher than those for distillate I. The effect of temperature was also investigated and the best temperature was -20°C.

Keywords : dewaxing, solvent dewaxing, pour point, lubricating oil production, wax

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