

Determination of the Thermophysical Properties of Heavy Oil

Juan Manuel Melendez^C, Rafael Alvarez, Aura Luisa Lopez^S and Blanca Gutierrez
Universidad Simon Bolivar, Termodinamica, Caracas, Miranda, Venezuela
jmelendez@usb.ve

The thermo physical properties of heavy oil reservoir San Tome are important for the application of oil recovery methods, including injection of carbon dioxide. The technique involves forming a mixture of oil and CO₂ lighter than the original crude oil, through the reduction of thermo physical properties that define the mobility of the oil in the pores of the reservoir. The objective of this study was to determine the density, thermal conductivity, dynamic viscosity at 20, 30 and 40 ° C under atmospheric pressure and surface tension for these temperatures but at pressures of 100, 200, 300, 400 and 500 psi using the method of the pendant drop. The results of these thermo physical properties were less than 3%, which indicates high accuracy in calculation methods and equipment designs.