Fluids exist in reservoirs as mixtures of gas, oil, and water. The major goal of reservoir simulation is to predict future performance of the reservoir and find ways and means of optimizing the recovery of some of the hydrocarbons under various operating conditions. This lack of predictive capability by the EOS can be a result of unsatisfactory compositional data or inexact properties for the heptanes-plus fraction (C_{7+}), inadequate binary interaction parameters, incorrect overall composition, or simply that EOS is not a good enough thermodynamic model. A lot of PVT correlations for calculation of bubble point pressure, formation oil volume factor, and solution gas oil ratio of reservoir oils have been offered in the petroleum engineering literature over the last few years. It is worth mentioning that PVT data to be feed into the black-oil or compositional simulator can be obtained from empirical correlations, laboratory measurement, and EOS fluid characterization. Irrespective of the proportions of these fluid present in a reservoir, obtaining fluid samples and studying their phase behavior in a laboratory are necessary for establishing reservoir type, devising strategies for reservoir management, and estimating expected hydrocarbon recovery. Estimation of reserves, determination of oil reservoir performance, recovery efficiency, production optimization and design of production systems are some of the areas which require precise determination of a fluid's physical properties at different conditions of pressure and temperature. A reservoir PVT behavior can very complicated especially when the composition and PVT properties vary with depth, or when different geological formation produce significantly different fluids from the same field. The importance of collecting representative reservoir fluid samples (preferably early in the life of the reservoir) and having the samples analyzed in a reputable laboratory cannot be over emphasized. PVT (Pressure-Volume-Temperature) represents the behavior of hydrocarbon reservoir fluids (i.e., oil, gas and water) during life of the field, as well as effect of changes in temperature and pressure during fluid transfer from reservoir to surface/processing facilities. In petroleum engineering, the most commonly used EOS's are cubic polynomial in volume.