REFPROP - Reference Fluid Thermodynamic and Transport Properties

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Version 9.1 of the REFPROP software will be demonstrated. This update to version 9.0 adds several new features, including improved convergence of VLE state points, and the ability to plot the full saturation curve, including retrograde states and the critical point, in various diagrams. The REFPROP program uses the latest high accuracy equations of state based on the Helmholtz energy for the thermodynamic properties with typical uncertainties of 0.1 % in densities, vapor pressures, and speeds of sound, 0.5 % in heat capacities, and 0.1 % in pressure in the critical region. The software allows the user to calculate properties of the liquid, vapor, and supercritical states, including two-phase properties for both pure fluids and mixtures. Over 100 fluids are available in the program, including cryogens, refrigerants, and hydrocarbons. The latest GERG-2008 equation for the properties of natural gas systems is a dedicated equation with very high accuracies for typical natural gases found throughout the world. Links with other applications such as Excel, Visual Basic, C++, and so forth are available and example files come with the program.