MIX-CP : THE HYDROCARBON HEAT CAPACITY CALCULATOR

MIX-CP is a software application that can be used to find specific heat at constant pressure (Cp), specific heat at constant volume (Cv) and heat capacity ratio (γ) for hydrocarbon mixtures at given temperature and pressure conditions. MIX-CP comprises of macros written for MS excel using Visual Basic for Application (VBA) programming language. MIX-CP can be used to determine heat capacity at constant pressure at given temperature and pressure conditions for a hydrocarbon mixture comprising of up to 112 numbers of possible non-polar and mildly polar hydrocarbons using LEE-KESLER CORRELATION and mixing rule recommended by Knapp. Desired non-polar and mildly polar hydrocarbons not included in MIX-CP could be interchanged with existing hydrocarbons to include them in MIX-CP. The temperature fed in can be between 0.3 times and 4 times of pseudo-critical temperature calculated by MIX-CP (0.3 < reduced temperature < 4). The pressure fed in can be between 0.01 times and 10 times pseudo-critical pressure calculated by MIX-CP (0.01 < reduced pressure < 10). MIX-CP excludes heat capacity values near critical point (reduced pressure =1 and reduced temperature =1) as heat capacity values can not be calculated accurately near critical point. MIX-CP further calculates heat capacity at constant volume (Cv) using the calculated values of heat capacity at constant pressure (Cp) and reduced temperature (Tr) and reduced pressure (Pr) values in a standard correlation available in literature. The calculated values of Cp, Cv and γ are not ideal gas values but correspond to real gas scenario.