1. Theory for Heat Capacity of Ideal Gas

I) KDB correlation equation (HC_CPGEQN)

Polynomial equation is used for Heat capacity of ideal gas.

$$C_p^0(T) = \sum_{i=0}^{4} A_i T^i \qquad (1)$$

where, T is Kelvin and $C_p^0(T)$ is kJ/kg-mol.K.

2. KDB Routines for Calculation of Ideal Gas Heat Capacity

KDB Ideal gas heat capacity calculation subroutine contain a KDB correlation equation.

Subroutine Name	Description	Required Common Blocks
HC_CPGEQN	KDB correlation equation	HC_KCPG

I) HC_CPGEQN

1. Usage : CALL HC_CPGEQN(ICN,T,HVP,IST)
2. Arguments

ICN : Component ID number (1-50) to calculate heat of vaporization
(integer, input)

T : Temperature in Kelvin (real*8, input)

CPG : Heat capacity of ideal gas in *kJ/kg-mol.K* (real*8, output)

IST : Status of calculation (integer, output)

= 0 : Normal termination

= 301 : Heat of ideal gas heat capacity coefficient not available