ASSIGNMENT -03

7.2-2: For a particular system of 1 mole, in the vicinity of a particular state, a change in pressure at constant is observed to be accompanied by a heat flux . What is the value of the coefficient of thermal expansion of this system, in the same state?

7.2-3: Show that the relation

Implies that Cp is in independent of the pressure

7.3-5: Reduce the derivative

7.4-5: A 1 decrease in volume of a system is carried out adiabatically. Find the change in the chemical potential in terms of , α and (and the state functions etc).

7.4-24: A nonideal gas undergoes a throttling process (i.e., a Joule-Thomson expansion) from an initial pressure to a final pressure . The initial temperature is and the initial molar volume is . Calculate the final temperature if it is given that

along the isotherm

along the isotherm

and along the isobar

What is the condition on in order that the temperature be lowered by the expansion?