

Chapter 4 Question #12

$$dH = \delta Q - \delta W + pdV + Vdp$$

This form of the First Law of Thermodynamics is valid for:

- 1) All processes
- 2) Processes where changes in KE and PE are zero
- 3) Quasi-static processes where changes in KE and PE are zero
- 4) Quasi-static processes of an ideal gas where changes in KE and PE are zero
- 5) All quasi-static processes of an ideal gas
- 6) All quasi-static processes
- 7) None of the above

Chapter 4 Question 12 Answer:

(2) Processes where changes in kinetic and potential energy are zero

The equation was obtained by substituting the definition of enthalpy into $dU = \delta Q - \delta W$. Thus (3) and (4) are also correct but more limiting.