Adiabatic

For a closed system undergoing a change in thermodynamic properties under the adiabatic constraint, heat does not cross between system and surroundings. The system is thermally insulated (i.e. adiabatically enclosed) from the surroundings. The First Law for closed systems has the following form.

\[ \Delta U = q + w \quad (a) \]

For changes under the adiabatic constraint, \( q \) is zero [1].

Then for adiabatic changes, \( \Delta U = w \).

Footnote