

Date: _____

For infinitesimal reversible process

$$dG = dH - TdS - SdT$$

or

$$dG = dQ + VdP - dQ - SdT$$
$$dG = VdP - SdT$$

as $dQ = TdS$
and $dH = dU + PdU + VdP = dQ + VdP$

for a reversible isothermal and isobaric process $dP = 0$ & $dT = 0$

so

$$dG = 0$$

$$dG = 0$$

integrating both sides

$$G = \text{constant}$$

finds application in the processes involving a change of phase such as sublimation, fusion and vaporization which take place isothermally & isobarically