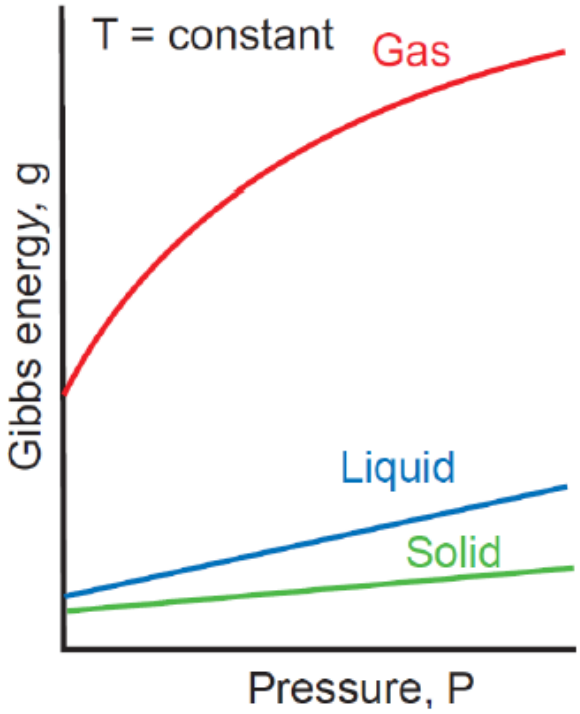
The slope of an isotherm in a gP-diagram (P on the horizontal axis) for an ideal gas is constant.



The slope of an isotherm in a gP-diagram (P on the horizontal axis) is given by: $\left(\frac{\partial g}{\partial P}\right)_T$. From $dg = -sdT + vdP$ it follows that this is equal to v. This means the slope is proportional to the volume. For a gas the volume changes as the pressure changes -¿ the slope is not constant, higher pressure $\rightarrow$ smaller volume and the slope is less steep for higher pressures. For a liquid and a solid the slope is constant as these are assumed incompressible.