

W4-10-2 Inclines in diagrams 2

The quantities on the axes of a thermodynamic diagram are taken from the collection P , T , v , s , u , h , a and g .

In which diagram is the incline of the isotherm determined by density alone?

For the density it holds that: $\rho = 1/v$. The isotherm (line with constant T) must be a function of the volume $v \rightarrow \left(\frac{\partial y}{\partial x}\right)_T = f(v = 1/\rho)$. This can be found in the diagram with the Gibbs energy, g on the y -axis and the pressure P on the x -axis ($g - P$ diagram) $\rightarrow \left(\frac{\partial g}{\partial P}\right)_T = v$.