

Self-assessment questions

1. What is diffusion distance?
2. To double the distance over which diffusion takes place, how much should the time be increased?
3. What are the units of molar heat capacity at constant pressure?
4. Can a polynomial fit for C_p of copper in the temperature range 70 to 300 K be used beyond 300 K?
5. Is it necessary that for all materials C_p is described by an equation of the type $a + bT + cT^{-2}$?

Answers to self-assessment questions

1. \sqrt{Dt}
2. Quadrupled
3. Joules/ (mole \cdot Kelvin)
4. No; typically, the polynomial fit is based on experimental data and hence the fit is valid only in that temperature range.
5. No; in the case of copper, for example, the fit is such that c is zero; and in the case of β -ZrO₂, both b and c are zero.