

6.4: Chapter 6 Problem

An underlined problem number or problem-part letter indicates that the numerical answer appears in Appendix I.

6.1

Calculate the molar entropy of carbon disulfide at 25.00 °C and 1 bar from the heat capacity data for the solid in Table 6.2 and the following data for $p = 1$ bar. At the melting point, 161.11 K, the molar enthalpy of fusion is $\Delta_{\text{fus}}H = 4.39 \times 10^3 \text{ J mol}^{-1}$. The molar heat capacity of the liquid in the range 161–300 K is described by $C_{p,m} = a + bT$, where the constants have the values $a = 74.6 \text{ J K}^{-1} \text{ mol}^{-1}$ and $b = 0.0034 \text{ J K}^{-2} \text{ mol}^{-1}$.

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