6.2 Prior to the discovery that freon-12 (CF_2Cl_2) was harmful to the Earth's ozone layer, it was frequently used as the dispersing agent in spray cans for hair spray, etc. Its enthalpy of vaporization at its normal boiling point of $-29.2°C$ is $20.25 \text{ kJ mol}^{-1}$. Estimate the pressure that a can of hair spray using freon-12 had to withstand at $40°C$, the temperature of a can that has been standing in sunlight.

Assume that $\Delta_{vap}H$ is a constant over the temperature range involved and equal to its value at $-29.2°C$.

6.10 Construct the phase diagram for benzene near its triple point at 36 Torr and 5.50°C using the following data: $\Delta_{fus}H = 10.6$ kJ mol^{-1}, $\Delta_{vap}H = 30.8$ kJ mol^{-1}, $\rho(s) = 0.891$ g cm^{-3}, $\rho(l) = 0.879$ g cm^{-3}.

6.17 Combine the barometric formula (stated in Box 1.1) for the dependence of the pressure on altitude with the Clausius–Clapeyron equation, and predict how the boiling temperature of a liquid

depends on the altitude and the ambient temperature. Take the mean ambient temperature as 20°C and predict the boiling temperature of water at 3000 m.