

[tex125] **Dry ice**

The  $T$ -dependence of the vapor pressure of  $\text{CO}_2$  below the triple point ( $T_t = -56.2^\circ\text{C}$ ) is well represented by the empirical relation

$$\ln \left( \frac{p(T)_{coex}}{1\text{atm}} \right) = 16 - \frac{3116\text{K}}{T}.$$

The molar heat of melting is  $L_{sl} = 8330\text{J}$  with negligible  $T$ -dependence.

- (a) Find the pressure  $p_t$  at the triple point.
- (b) Find the latent heat of sublimation,  $L_{sg}$ , and the latent heat of vaporization,  $L_{lg}$ .
- (c) Find the vapor pressure  $p(T)_{coex}$  at  $20^\circ\text{C}$ .