

$$\Delta S_{70K \rightarrow 150K} = \Delta S_{150K} - \Delta S_{70K}$$

$$= \int_{54.39}^{90.20} \frac{C_{pim}^{liquid} dt}{T} - \frac{6815 J}{90.20 K} + \int_{90.20}^{150} \frac{C_{pim}^{gas} dt}{T} -$$

$$\int_{54.39}^{70} \frac{C_{pim}^{liquid} dt}{T} =$$