

You can either use the ΔG_f° values from the appendix:

$$\begin{aligned}\Delta G_r^\circ &= \Delta G_f^\circ(\text{SiF}_4) + 2\Delta G_f^\circ(\text{H}_2\text{O}) - \Delta G_f^\circ(\text{SiO}_2) - 4\Delta G_f^\circ(\text{HF}) \\ \Delta G_r^\circ &= \left(-1572.65 \frac{\text{kJ}}{\text{mol}}\right) + 2\left(-228.572 \frac{\text{kJ}}{\text{mol}}\right) - \left(-856.64 \frac{\text{kJ}}{\text{mol}}\right) - 4\left(-273.2 \frac{\text{kJ}}{\text{mol}}\right) \\ \Delta G_r^\circ &= -80.4 \frac{\text{kJ}}{\text{mol}}\end{aligned}$$

Or use the ΔH_f° and S° values:

$$\begin{aligned}\Delta H_r^\circ &= \Delta H_f^\circ(\text{SiF}_4) + 2\Delta H_f^\circ(\text{H}_2\text{O}) - \Delta H_f^\circ(\text{SiO}_2) - 4\Delta H_f^\circ(\text{HF}) \\ \Delta H_r^\circ &= \left(-1614.94 \frac{\text{kJ}}{\text{mol}}\right) + 2\left(-241.818 \frac{\text{kJ}}{\text{mol}}\right) - \left(-910.94 \frac{\text{kJ}}{\text{mol}}\right) - 4\left(-271.1 \frac{\text{kJ}}{\text{mol}}\right) = -103.236 \frac{\text{kJ}}{\text{mol}} \\ \Delta S_r^\circ &= S^\circ(\text{SiF}_4) + 2S^\circ(\text{H}_2\text{O}) - S^\circ(\text{SiO}_2) - 4S^\circ(\text{HF}) \\ \Delta S_r^\circ &= \left(282.49 \frac{\text{J}}{\text{mol}}\right) + 2\left(188.825 \frac{\text{J}}{\text{mol}}\right) - \left(41.84 \frac{\text{J}}{\text{mol}}\right) - 4\left(173.779 \frac{\text{J}}{\text{mol}}\right) = -76.816 \frac{\text{J}}{\text{mol}} \\ \Delta G_r^\circ &= \Delta H_r^\circ - T\Delta S_r^\circ = -103.236 \frac{\text{kJ}}{\text{mol}} - (298 \text{ K})\left(-0.076816 \frac{\text{kJ}}{\text{mol}}\right) = -80.3 \frac{\text{kJ}}{\text{mol}}\end{aligned}$$