$$K_2' = \acute{Y}_{s_1} \exp\left(\frac{Q_c}{RT_1}\right)$$

$$= \left(10^{-7}\ \text{h}^{-1}\right)\exp\left[\frac{186{,}200\ \text{J/mol}}{(8.31\ \text{J/mol-K})(700\ \text{K})}\right] = 8.0\ \text{x}\ 10^{6}\ \text{h}^{-1}$$

Now it is possible to calculate $\acute{Y}_s$ at 649°C (922 K) as follows:

$$\acute{Y}_s = K_2' \exp\left(-\frac{Q_c}{RT}\right)$$

$$= \left(8.0\ \text{x}\ 10^{-6}\ \text{h}^{-1}\right)\exp\left[\frac{186{,}200\ \text{J/mol}}{(8.31\ \text{J/mol-K})(922\ \text{K})}\right]$$

$$= 2.23\ \text{x}\ 10^{-4}\ \text{h}^{-1}$$