

Le Chatelier's Principle Demonstration
Using FeSCN²⁺ Equilibrium

Reactant #1	$\text{KSCN}(s) \rightarrow \text{K}^+(aq) + \text{SCN}^-(aq)$
Reactant #2	$\text{Fe}(\text{NO}_3)_3(s) \rightarrow \text{Fe}^{3+}(aq) + 3\text{NO}_3^{1-}(aq)$
Resulting Equilibrium	$\text{FeSCN}^{2+}(aq) \rightleftharpoons \text{Fe}^{3+}(aq) + \text{SCN}^-(aq)$

Please note that the brown colour in the equilibrium is a result of presence of $\text{FeSCN}^{2+}(aq)$. Therefore a reduction in $[\text{FeSCN}^{2+}]$ will cause the brown colour to fade and an increase in $[\text{FeSCN}^{2+}]$ will cause the brown colour to intensify.

1. Show a full L.C.P. determination for the addition of solid $\text{KSCN}(s)$
2. Show a full L.C.P. determination for the addition of $\text{Fe}(\text{NO}_3)_3(aq)$
3. Show a full L.C.P. determination for the addition of solid Na_2HPO_4 . Please note that Na_2HPO_4 will consume Fe^{3+} ion.