$$\begin{array}{c} \operatorname{CaC}_2(s) + \operatorname{N}_2(g) \longrightarrow \operatorname{CaNCN}(s) + \operatorname{C}(s) \\ \operatorname{CaCN}_2 + \operatorname{C} + \operatorname{Na}_2\operatorname{CO}_3 \longrightarrow \operatorname{CaCO}_3 + 2\operatorname{NaCN} \\ \operatorname{CH}_4(g) + \operatorname{NH}_3(g) \longrightarrow \operatorname{HCN}(g) + 3\operatorname{H}_2(g) \\ 4\operatorname{HCN} + \operatorname{O}_2 \longrightarrow 2\left(\operatorname{CN}\right)_2 + 2\operatorname{H}_2\operatorname{O} \\ 4\operatorname{CN} + \operatorname{Cu}^{2+} \longrightarrow 2\operatorname{Cu}(\operatorname{CN}) + (\operatorname{CN})_2 \\ (\operatorname{CN})_2 + 2\operatorname{OH}^- \longrightarrow \operatorname{CN}^- + \operatorname{OCN}^- + \operatorname{H}_2\operatorname{O} \\ \operatorname{CaNCN} + \operatorname{H}_2\operatorname{O} \longrightarrow \operatorname{CaO} + \operatorname{H}_2\operatorname{NCN} \end{array}$$