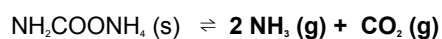


Consider the reaction: $\text{NH}_2\text{COONH}_4 (\text{s}) \rightleftharpoons 2 \text{NH}_3 (\text{g}) + \text{CO}_2 (\text{g})$

At high temperatures such as 250.°C, the equilibrium constant for the reaction is 1.58×10^{-8} . A research student ran the experiment by first placing 39.1 g of the reactant compound in a 750. mL evacuated closed container. ($R = 0.08206 \text{ L}\cdot\text{atm}/\text{K}\cdot\text{mol}$; $K = e^{-(\Delta H^\circ_f / RT)}$; $K = e^{-(\Delta G^\circ_f / RT)}$; $K = e^{-(\Delta H^\circ_f / RT)}$; $K = e^{-(\Delta G^\circ_f / RT)}$; pay attention to sig figs)

a. Write the equilibrium expression, K_c , for this reaction.

a. What is the concentration of each of the products at equilibrium?



a. What is the pressure in atm exerted by each of the products at equilibrium?

a. Use these pressures to calculate the K_p for the reaction at this temperature.

a. What is the total pressure in the container at equilibrium.

