

This block contains the entire text of the image, which is a large document with many lines of text.

④ $\text{H}_2\text{O} + \text{CO}_2 \rightarrow \text{H}_2\text{CO}_3$ (carbonic acid)
⑤ $\text{H}_2\text{CO}_3 \rightleftharpoons \text{H}_2\text{O} + \text{CO}_2$ (dissociation of carbonic acid)
⑥ $\text{H}_2\text{O} + \text{CO}_2 \rightarrow \text{H}_2\text{O} + \text{CO}_2$ (dehydration of carbonic acid)

N₂O₄ + 2NO₂ → 4NO + O₂
ΔH = -132 kJ/mol
ΔS = 110 J/K mol
ΔG = -100 kJ/mol
ΔG = ΔH - TΔS
ΔG = -132 - 298 × 110 / 1000
ΔG = -132 - 33.68
ΔG = -165.68 kJ/mol
ΔG = -RT ln K_p
-165.68 = -8.314 × 10⁻³ × 298 ln K_p
-165.68 = -2.498 ln K_p
-67.1 = ln K_p
e^{-67.1} = K_p
K_p = 1.1 × 10⁻²⁹