*AP Chemistry*

*Equilibrium Constant Practice Problems*

For each problem, write the expression for the equilibrium constant. Then, calculate the value of the equilibrium constant for the conditions under which the reaction took place.

1. H2(g) + Br2(g) ⇌ 2 HBr(g) PH2 = PBr2 = 0.65 atm, PHBr = 0.51 atm

Write a Kp expression

1. 2 SO2(g) + O2(g) ⇌ 2 SO3(g) [SO2] = 2.87 x 10-2 M [O2] = 4.22 x 10-2 M

Write a Kc expression

 [SO3]= 3.66 x 10-2 M

1. AgCl(s) ⇌ Ag+(aq) +Cl-(aq) [Ag+] = [Cl-] = 1.7 x 10-6 M

Write a Kc expression

1. 2 NaClO3(s) ⇌ 2 NaCl(s) + 3 O2(g) PO2 = 0.75 atm

Write a Kp expression

1. For the reaction in problem number one, at a certain temperature the equilibrium constant has a value of 0.33. During one experiment at this temperature, the equilibrium pressures of hydrogen and bromine were measured to be 0.65 atm and 0.88 atm, respectively. What was the partial pressure of hydrogen bromide at equilibrium?