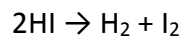


Answer to Question #50810, Chemistry, Physical Chemistry

IN A 1 L POT At 420 degree temperature HI dissociates and in equilibrium 1472 g HI 18.6 G H2 and 546.1 g I2 IS FOUND.what is the equilibrium constant? the ans is 0.1398 but how????
atomic mass of I =127

Solution:



$$n = \frac{m}{M_r}$$

$$c = \frac{n}{V} = \frac{m}{M_r \times V}$$

$$[\text{HI}] = \frac{1472}{128 \times 1} = 11.5 \text{ M}$$

$$[\text{H}_2] = \frac{18.6}{2 \times 1} = 9.3 \text{ M}$$

$$[\text{I}_2] = \frac{546.1}{254 \times 1} = 2.15 \text{ M}$$

$$K = \frac{[\text{H}_2][\text{I}_2]}{[\text{HI}]^2} = \frac{2.15 \times 9.3}{11.5^2} = 0.1512$$

Answer:

0.1512

<https://www.AssignmentExpert.com>