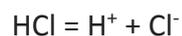


## Answer on Question #56580 - Chemistry - Inorganic Chemistry

### Question:

A one molar solution of HCl is about 92 percent ionized at room temperature .Calculate Ka for HCl.....(give me only solution no details.)

### Answer:



$$K_a = \frac{[\text{H}^+][\text{Cl}^-]}{[\text{HCl}]}$$

$$[\text{H}^+] = [\text{Cl}^-]$$

$$C_{\text{HCl}} = [\text{HCl}] + [\text{Cl}^-]$$

$$x = [\text{Cl}^-]/C_{\text{HCl}}; [\text{Cl}^-] = x * C_{\text{HCl}} = 92 \% * 1 \text{ M} = 0.92 \text{ M}$$

$$[\text{HCl}] = 1 \text{ M} - 0.92 \text{ M} = 0.08 \text{ M}$$

$$K_a = \frac{[\text{H}^+][\text{Cl}^-]}{[\text{HCl}]} = \frac{0.92 \text{ M} * 0.92 \text{ M}}{0.08 \text{ M}} = 10.58 \approx 11$$