

Solution:

1) Find the amount of substance from the following equation:

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

n – Amount of substance

m – mass of the substance

M – the molar mass of the substance

$$n(\text{Cl}) = \frac{m(\text{Cl})}{M(\text{Cl})}$$

$$n(\text{Cl}) = \frac{6.3\text{g}}{35.45\text{g/mole}} = 0.178\text{mole}$$

2) Obtain the amount of atoms:

$$N_A = 6.022 * 10^{23} \text{ mol}^{-1}$$

$$N = n * N_A$$

$$N(\text{Cl}) = n(\text{Cl}) * N_A$$

So,

$$N(\text{Cl}) = 0.178\text{mole} * 6.02 * 10^{23} = 1.072 * 10^{23}$$

Answer: $1.072 * 10^{23}$ atoms of Cl