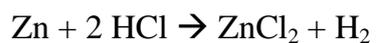


The reaction between Zn and hydrochloric acid is next:



One mole of gas occupies volume of 22.4 liters. From law: The molar volume of an ideal gas at standard temperature and pressure is 22.4L.

Amount of Zn is next:  $n=m/M_r$ , where m is mass,  $M_r$  is molecular mass.

$$n=12 / 65 =0.185 \text{ mol}$$

The molar ratio of Zn : H<sub>2</sub> is 1: 1,

It means that amount of H<sub>2</sub> is 0.185 mol.

This amount occupies next volume:

$$V=22.4\text{L/mol} *0.185 \text{ mol} = 4,144 \text{ L}$$