Answer on Question #57540 - Chemistry - Inorganic Chemistry

Question:
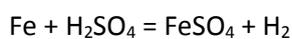
what volume of Hydrogen would be liberated when 11.2g of Iron Fe reacts with excess dilute tetraoxosulphate(vi) acid

H_2SO_4

H- 1 O-16 S-22 Fe- 36

Solution.

The reaction of excess dilute tetraoxosulphate(vi) acid with Iron

$$Fe + H_2SO_4 = FeSO_4 + H_2$$

Amount of moles of Iron

$$\frac{11.2\ g}{56\ g/mol} = 0.2\ mol$$

So, reacting of 0.2 moles of Iron forms 0.2 moles of Hydrogen which correspond to

$$0.2\ mol \times 22.4\frac{l}{mol} = 4.48\ l$$

Answer: 4.48 l