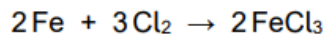


(Calculations with volumes of gases)

Q1. (2021)

Iron chloride is produced by heating iron in chlorine gas.

The equation for the reaction is:



Calculate the volume of chlorine needed to react with 14 g of iron.

You should calculate:

- the number of moles of iron used
- the number of moles of chlorine that react with 14 g of iron
- the volume of chlorine needed.

Relative atomic mass (A_r): Fe = 56

The volume of 1 mole of gas = 24 dm³

[3 marks]

Volume of chlorine = _____ dm³

Q2. (2021)

Calculate the volume of oxygen required to react with 50 cm³ of hydrogen sulfide.

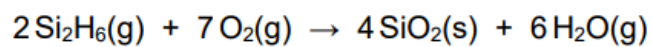
[1 mark]

Volume = _____ cm³

Q3. (2022)

Si₂H₆ reacts with oxygen.

The equation for the reaction is:



30 cm³ of Si₂H₆ is reacted with 150 cm³ (an excess) of oxygen.

Calculate the total volume of gases present after the reaction.

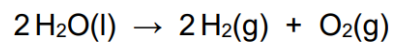
All volumes of gases are measured at the same temperature and pressure.

[4 marks]

Volume of gases = _____ cm³

Q4. (2023)

The overall equation for the reaction is:



What is the volume of oxygen produced when 20 cm³ of hydrogen has been produced?

[1 mark]

Tick (✓) **one** box.

10 cm³ ☐

20 cm³ ☐

30 cm³ ☐

40 cm³ ☐