AQA GCSE Chemistry

Topic 3: Quantitative chemistry

Use of amount of substance in relation to volumes of gases (chemistry only)

Notes

(Content in bold is for Higher Tier only)
Equal amounts (in mol.) of gases occupy the same volume under the same conditions of temperature and pressure (e.g. RTP)

- Volume of 1 mol. of any gas at RTP (room temperature and pressure: 20 degrees C and 1 atmosphere pressure) is 24 dm$^3$
- This sets up the equation:

\[
\text{Volume of gas (dm}^3\text{) at RTP} = \text{Moles} \times 24
\]

- using this equation, if the reaction is at RTP, you can calculate moles of a gas produced and then x24 to get volume produced (e.g. if you produce 5 moles of hydrogen, you produce 24 x 5 = 120 dm$^3$)