Report by CO2 removal

Aim: to analyse salt in Alka-Seltzer as an indirect measure by passing gas through a solution (limewater) and measuring the volume which forms. Don't forget

Hypothesis: based on knowledge of reactions

Why

Variables: shown in procedure (flowchart)

Dependent: mass of salt

Independent: volume of gas

Controlled: volume of water, temperature, same apparatus, same

Risk assessment:

Hazard: CO2 (toxic)

Risk: Inhalation of CO2, loss of consciousness

Precaution: Use in well-ventilated area

Apparatus:

Alka-Seltzer tablet

Measuring cylinder of 250 ml

$Ca(OH)_2$

Water

Method:

Measure out 250ml limewater

Place a tablet in 250ml $Ca(OH)_2$

Observe tablet + $Ca(OH)_2$ → $CaCO_3$ + H_2O + CO_2

$CaCO_3$ + H_2O + CO_2 → $Ca(HCO_3)_2$

Observe $Ca(HCO_3)_2$ gas can collect solution until no more bubbles are observed (5 min).

Repeat with different tablets (3 times).

Results: Table of results

Trial	Mass of tablet (g)	Volume of CO_2 (ml)
1		
2		
3		

Mean volume of CO_2 = (Trial 1 + Trial 2 + Trial 3) / 3

Graph: Mass of tablet (g) on x-axis, Volume of CO_2 (ml) on y-axis

Conclusion: Mass of tablet is directly proportional to volume of CO_2 produced.

Evaluation: Gas can dissolve in water, some CO_2 may escape, tablet may not dissolve completely, temperature may affect solubility of CO_2.

Improvement: Use a gas syringe to measure CO_2 more accurately, stir solution to ensure complete reaction, control temperature.

Safety: Wear gloves and goggles, avoid inhaling CO_2, dispose of solution safely.

Bibliography: Chemistry textbook, Alka-Seltzer packaging.

Appendix: Raw data table, calculations.

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