

Cation test/Anion test:

Observations to write:

- [white/light blue/green/red-brown] ppt.
- if question asked you to add excess, check if the ppt. is soluble/insoluble in excess, and write accordingly to what you see!

Gases test:

Observations to write:

- Hydrogen (H_2): Gas extinguished a light splint with a 'pop' sound
- Oxygen (O_2): Gas relighted a glowing splint
- Carbon dioxide (CO_2): White ppt. formed when gas is bubbled into limewater
Note: ppt. dissolves with excess carbon dioxide !!
- Ammonia (NH_3): Gas turns damp red litmus paper blue
- Chlorine (Cl_2): Gas bleaches damp litmus paper (bleaches both red and blue!)
- Sulfur dioxide (SO_2): Gas turns aqueous acidified potassium manganate(VII) from purple to colourless

Note: usually not tested, but good to know

Heating of substances:

Test: Heat the mixture gently

Things to take note of:

- If sodium hydroxide is added for the test, prepare DAMP RED litmus paper, because if ammonia is produced on warming, ammonium is the cation that will be present

Redox agents test:

Oxidising agent test: Place the sample into a test tube, add 1-2 drops of potassium iodide/aqueous iron(III) chloride.

In the presence of an oxidising agent,
potassium iodide will turn from colourless to brown.
iron(III) chloride will turn from yellow to pale green.

Reducing agent test: Place the sample into a test tube, add 1-2 drops of potassium manganate(VII),

In the presence of a reducing agent,
Potassium manganate will turn from purple to colourless.

Examples:

Question: The student did not have enough data to be certain of her conclusion. Outline what further measurements she should take to confirm her conclusion. Briefly describe how she should process her results to determine the relationship between change in temperature and mass of solid.

Answer: She should make three more experiments using different matter. She should draw a graph against mass of the solid used.

Question: Add 1cm depth of dilute nitric acid to Z in the tube. Then add 1cm depth of aqueous silver nitrate to the mixture in the tube.

- Check if effervescence is present when acid is added, possible test for carbonate. (lots of students would think the effervescence is only happening because something is poured in)
- Silver nitrate links to chloride test, ppt. would be called silver chloride
- Whereas barium nitrate links to sulfate test, ppt. would be called barium chloride

Notes:

- If you are asked to weigh the container,
- ALWAYS press “ TARE ” , because it resets it to zero, and you will get a more accurate reading.
- If you are asked to weigh the test tube,
- Put a beaker first, and press “ TARE “ and then put the test tube in the beaker, to get the reading of only the test tube.
- If they asked you to write down readings in a table, do NOT write units if it is given.
- Temperature decreases = endothermic reaction
- Temperature increases = exothermic reaction