

# AQA Chemistry A-Level

## RP11 - Identifying transition metal ions

### Flashcards

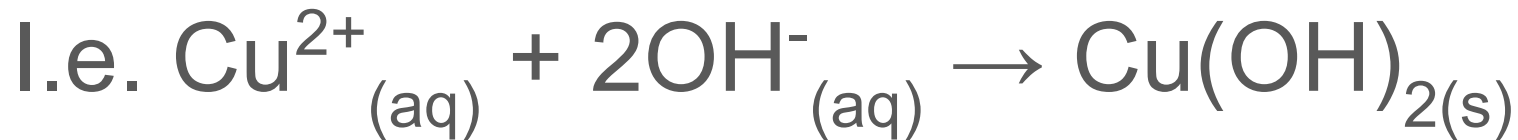


How do transition metals undergo precipitation reactions?



How do transition metals undergo precipitation reactions?

They react with hydroxide ions to form a metal hydroxide precipitate.



What can be reacted with transition metals for a precipitation reaction to occur?



What can be reacted with transition metals for a precipitation reaction to occur?

- Aqueous sodium hydroxide
- Ammonia



What is the first test that can be carried out to identify transition metal ions?



## What is the first test that can be carried out to identify a transition metal ion?

- Place 10 drops of each solution (Q, R, S) in a test tube. Add NaOH solution drop-by-drop to each until in excess. Record any observations.
- Stand in a beaker of hot water for 10 minutes.

### Sample results

#### Test 1(a) and (b)

|                                 | <b>Q</b>                 | <b>R</b>              | <b>S</b>               |
|---------------------------------|--------------------------|-----------------------|------------------------|
| <b>Initial</b>                  | yellow solution          | light blue solution   | pale green solution    |
| <b>Add NaOH</b>                 | orange/brown precipitate | deep blue precipitate | grey/green precipitate |
| <b>On standing in hot water</b> | no visible change        | no visible change     | no visible change      |



What is the second test that can be carried out to identify transition metal ions?



# What is the second test that can be carried out to identify transition metal ions?

- Add about 10 drops of each solution (Q, R, S) into a different test tube with  $\text{Na}_2\text{CO}_{3(aq)}$ . Shake and record observations.

## Test 2

|                              | Q  | R                      | S                      |
|------------------------------|--|------------------------|------------------------|
| Addition of sodium carbonate | orange/brown precipitate and effervescence | blue/green precipitate | grey/green precipitate |



What can we conclude about Q, R and S?



What can we conclude about Q, R and S?

- Q - Iron (III) ions
- R - Copper (II) ions
- S - Iron (II) ions

