

Qualitative Analysis

Chemistry

A systematic scheme for identifying an unknown salt.

A practical sequence for an unknown ionic solid.

1 Appearance and solubility

Colour suggests a transition metal; note whether it dissolves.

2 Flame test

Identifies Group 1 and 2 cations.

3 Sodium hydroxide test

Precipitate colour and whether it redissolves in excess.

4 Test for carbonate

Dilute acid, then limewater. Do this before halide tests.

5 Test for sulfate

Acidified barium chloride.

6 Test for halide

Acidified silver nitrate, then ammonia solution.

NAOH PRECIPITATES

Cu^{2+} blue

Fe^{2+} green

Fe^{3+} orange-brown

Al^{3+} white, redissolves in excess

Zn^{2+} white, redissolves in excess

Aluminium and zinc hydroxides both redissolve in excess sodium hydroxide because they are amphoteric.