Lab Practical Reference

Flame tests, metal reactivity and standard gas tests

Flame Test Colours

Lithium	Crimson red
Sodium	Intense yellow
Potassium	Lilac
Rubidium	Red-violet
Caesium	Blue-violet
Calcium	Orange-red
Strontium	Scarlet
Barium	Pale green
Copper(II)	Blue-green
Boron	Bright green
Lead	Grey-white
Magnesium	Brilliant white
Thallium	Pure green
Indium	Indigo blue

Sodium's yellow masks most other colours. Cobalt-blue glass can help reveal potassium's lilac.

Reactivity Series · most reactive first

K ↓
Na ↓
Li ↓
Ba ↓
Sr ↓
Ca ↓
Mg ↓
Al ↓
C · reference ↓
Zn ↓
Cr ↓
Fe ↓
Cd ↓
Co ↓
Ni ↓
Sn ↓
Pb ↓
H · reference ↓
Cu ↓
Hg ↓
Ag ↓
Pt ↓
Au

Above C: usually extracted by electrolysis. Below C: reducible with carbon. Above H: displace hydrogen from dilute acids.

Gas Tests

Gas	Test	Positive result
Hydrogen	Lit splint	Squeaky pop
Oxygen	Glowing splint	Relights
Carbon dioxide	Bubble through limewater	Turns milky
Ammonia	Damp red litmus	Turns blue
Chlorine	Damp blue litmus	Bleaches white
Sulfur dioxide	Acidified potassium dichromate	Orange to green