

Balancing Redox

Chemistry

Constructing and combining half equations in acid solution.

The standard method in acidic conditions.

1

Balance the main element

Everything except O and H.

2

Balance oxygen with H₂O

Add water to whichever side lacks oxygen.

3

Balance hydrogen with H⁺

Add hydrogen ions.

4

Balance charge with electrons

Add e⁻ to make the charges equal.

5

Combine

Scale so electrons cancel, then add the half equations.

MANGANATE(VII)



Purple to colourless — self-indicating

Reacts 1:5 with Fe²⁺

Manganate(VII) titrations need no indicator: the first excess drop turns the solution permanently pink.