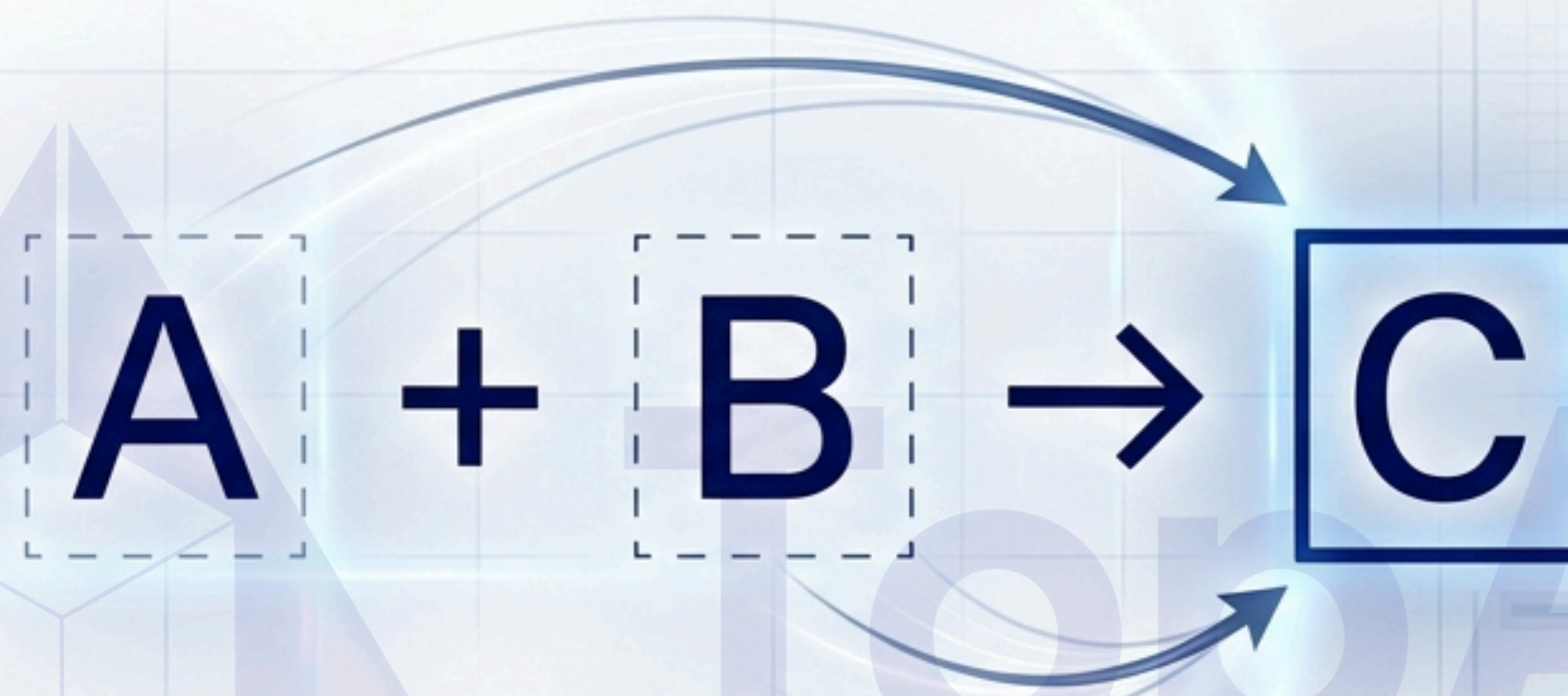


JEE Chemistry - Unit 7

Combination Redox Reactions

Mastering the $A + B \rightarrow C$ Pattern

Formula Bank



Two or more reactants combine to form a single product.



[SCANNING REDOX STATUS... INCOMPLETE DATA]

Structural pattern confirmed. But is it a redox reaction?

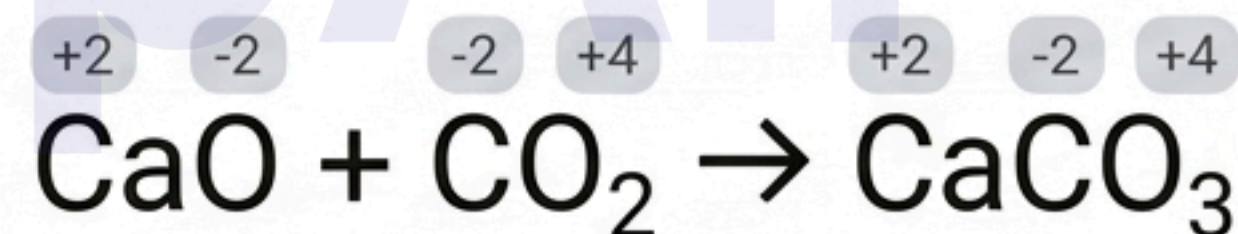
The Golden Condition

For $A + B \rightarrow C$ to be a redox reaction, one or both reactants **MUST** be in their elemental form.

1	Element + Element = REDOX	✓
2	Element + Compound = REDOX	✓
3	Compound + Compound = NOT REDOX	✗

⚠ JEE Trap Alert

Examiners love this equation. It fits the $A + B \rightarrow C$ pattern, but neither reactant is neither reactant is elemental.



Oxidation numbers remain static. **NOT** a redox reaction!



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



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Key Highlights

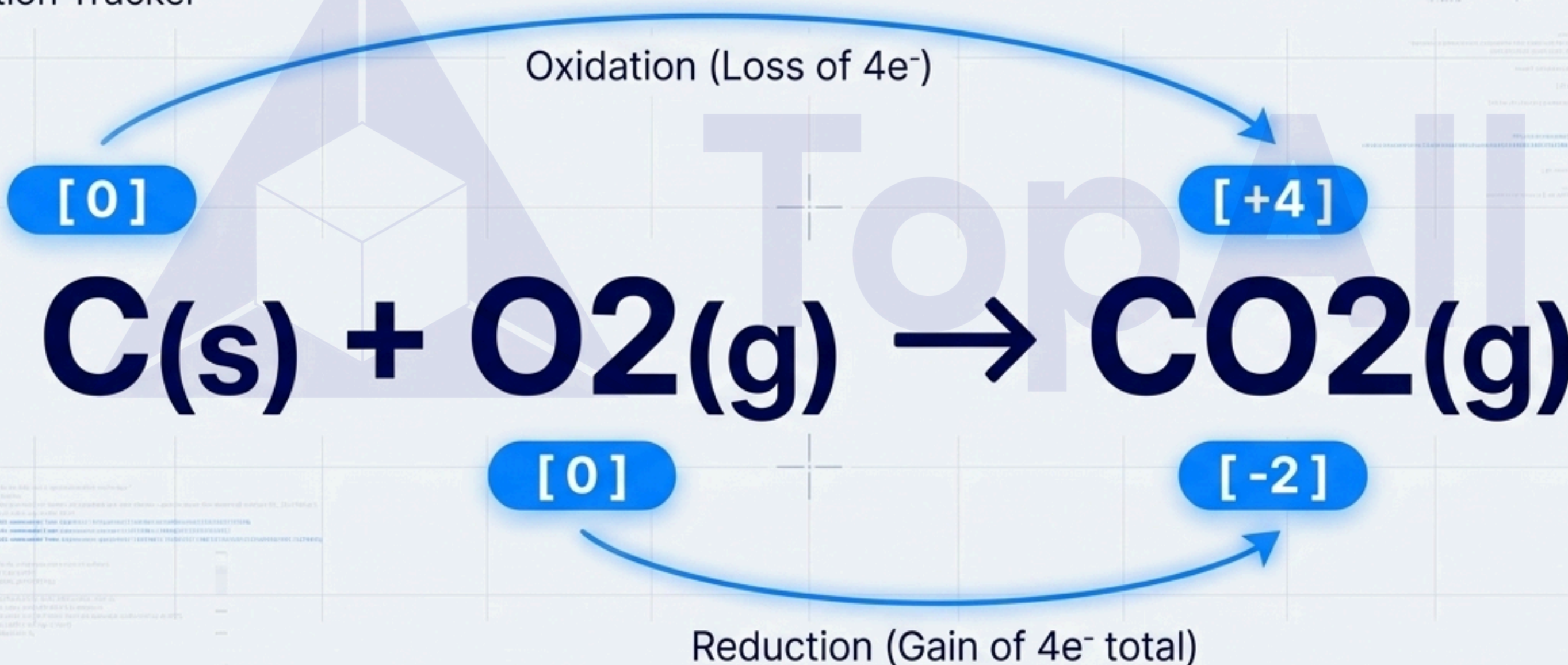
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Case Study 1: Combustion

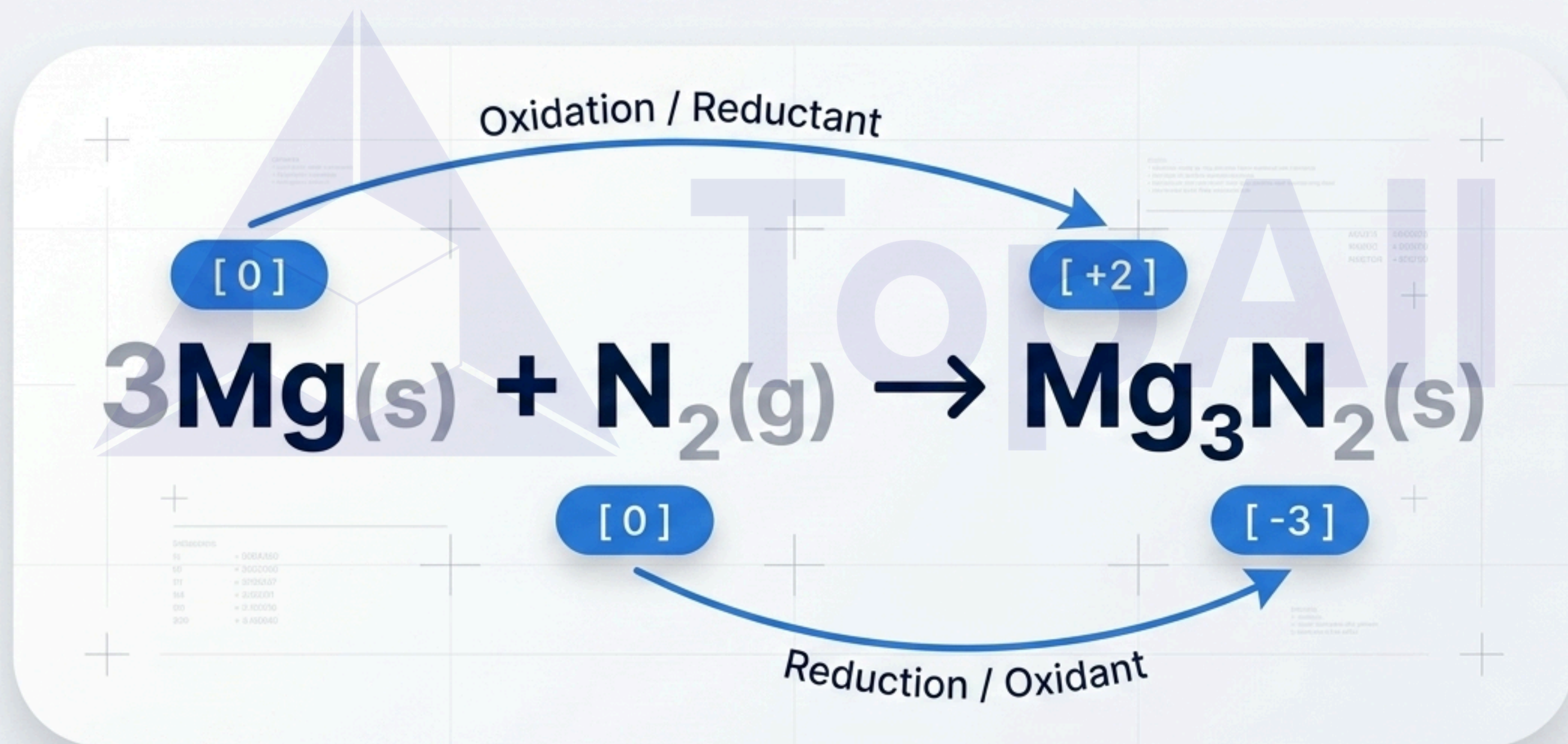
Both reactants are in elemental form. Carbon acts as the reductant; Oxygen acts as the oxidant.

Equation Tracker



Case Study 2: Metal & Non-Metal

Both reactants are elements. Magnesium is oxidized; Nitrogen is reduced.



The JEE Combination Reaction Algorithm



Step 1: Verify Pattern

→ Does it yield a **single product** ($A + B \rightarrow C$)?



Step 2: Check Reactants

→ Is at least one **reactant** in an **uncombined** elemental state (O.N. = 0)?



Step 3: The Final Proof

→ Calculate **O.N. change**. If states change, it is universally a redox reaction.

[0] → [+n]





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