Decomposition reactions (Level 1) exam tips

**•** A single (usually solid) reactant forms two separate products (usually a solid + a gas) when heated.

**•** Decomposition using strong heat aka thermal decomposition

 *eg. metal hydrogen carbonate 🡪 metal carbonate + carbon dioxide + water*

 *eg. metal carbonate 🡪 metal oxide + carbon dioxide*

 *eg. metal hydroxide 🡪 metal oxide + water*

**•** Decomposition which occurs naturally but is sped up using a catalyst (catalytic decomposition).

 *eg hydrogen peroxide using a catalyst (manganese dioxide or potassium iodide or potato or liver)*

**•** Positive test for water: cobalt chloride paper turns from a **blue** to a **pink** colour

**•** Positive test for carbon dioxide: bubble the mystery gas into colourless limewater, the limewater will

 turn a milky colour (be careful here to state both the initial and final colours of the limewater)

 or

 CO2 gas will extinguish a flame

Also…”don’t be daft”

The symbol of oxygen is a CAPITAL O, this also applies for in nitrates NO3-, carbonates CO32- and

sulfates SO42-.

Be careful, Na2CO3 (sodium carbonate) does NOT decompose thermally.

A catalyst is a chemical that SPEEDS UP the rate of a reaction.

A catalyst is NOT USED UP during the reaction.

Seeing BUBBLES is an observation, a gas forms is not.

How would you see a colourless gas eg water vapour? Usually by observing CONDENSATION on a tube

An observation of “seeing steam” or “a colourless liquid” is NOT acceptable

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