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Class - 10

Chapter - 2

ACIDS, BASES AND SALTS

Part-8

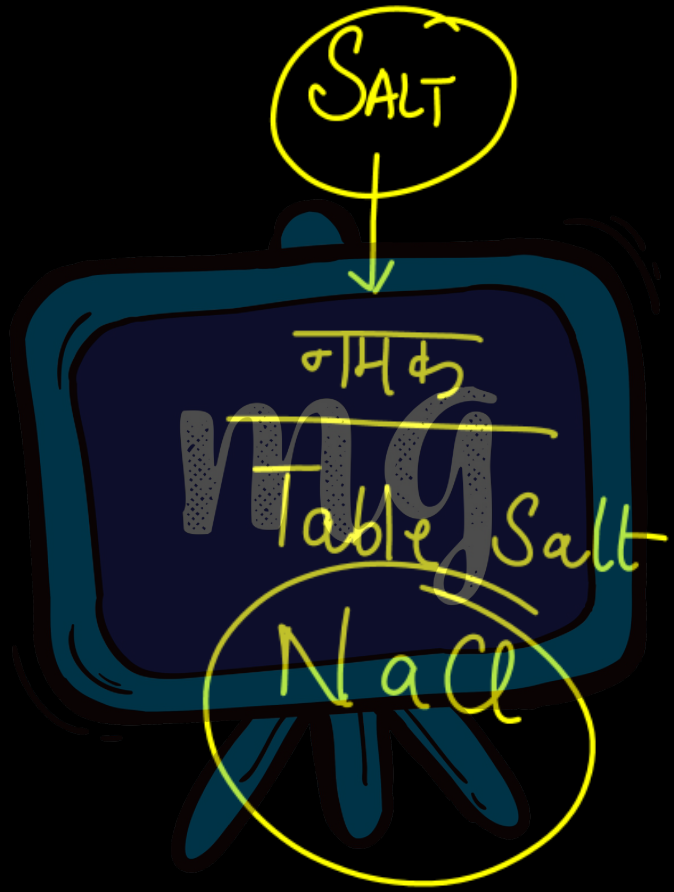
Some Important Salts - 2



Disha Didi (DD)

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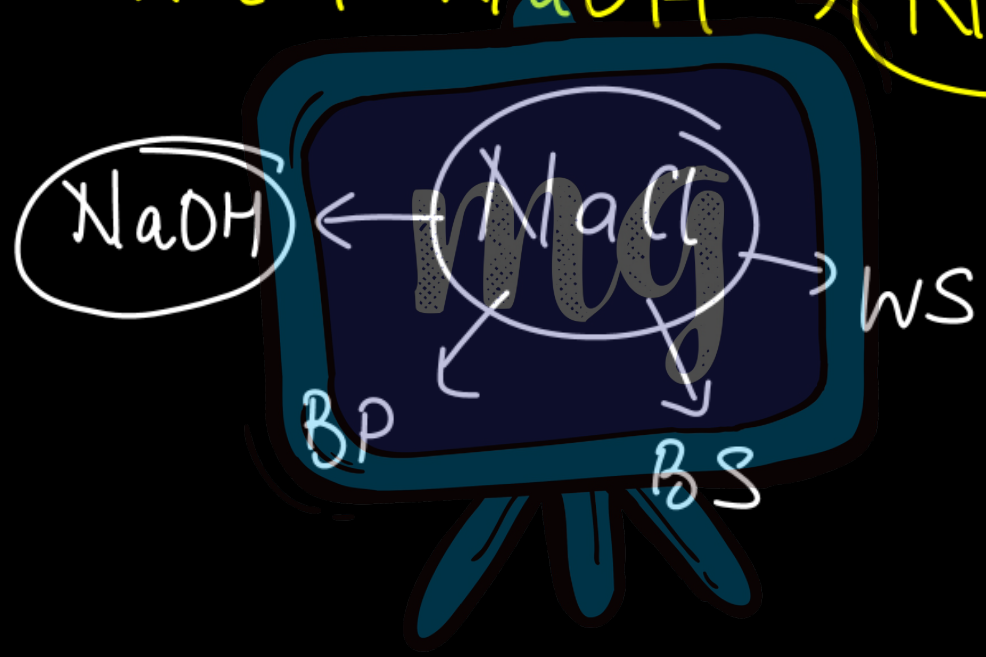
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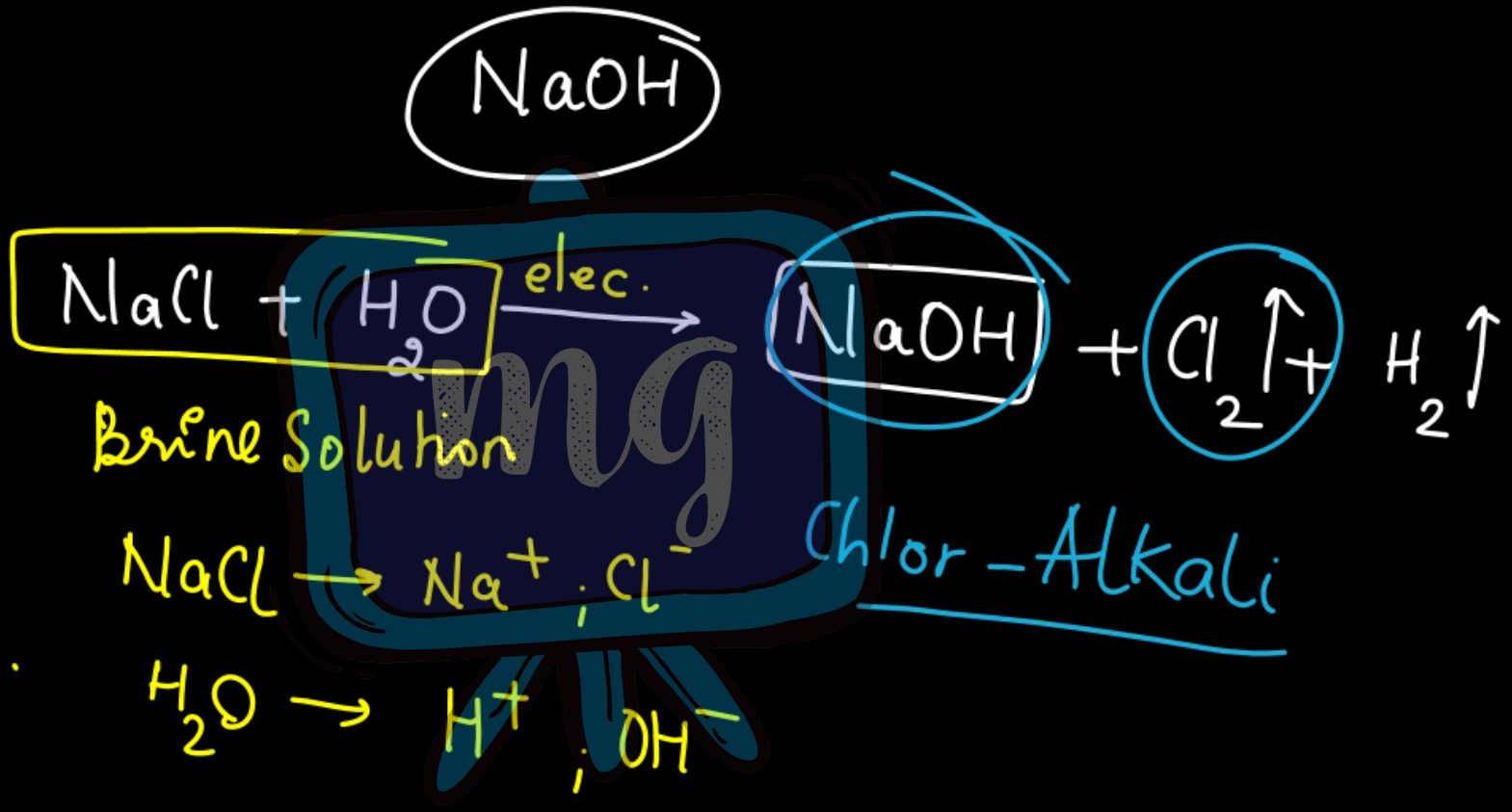
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$HCl + NaOH \rightarrow NaCl + H_2O$



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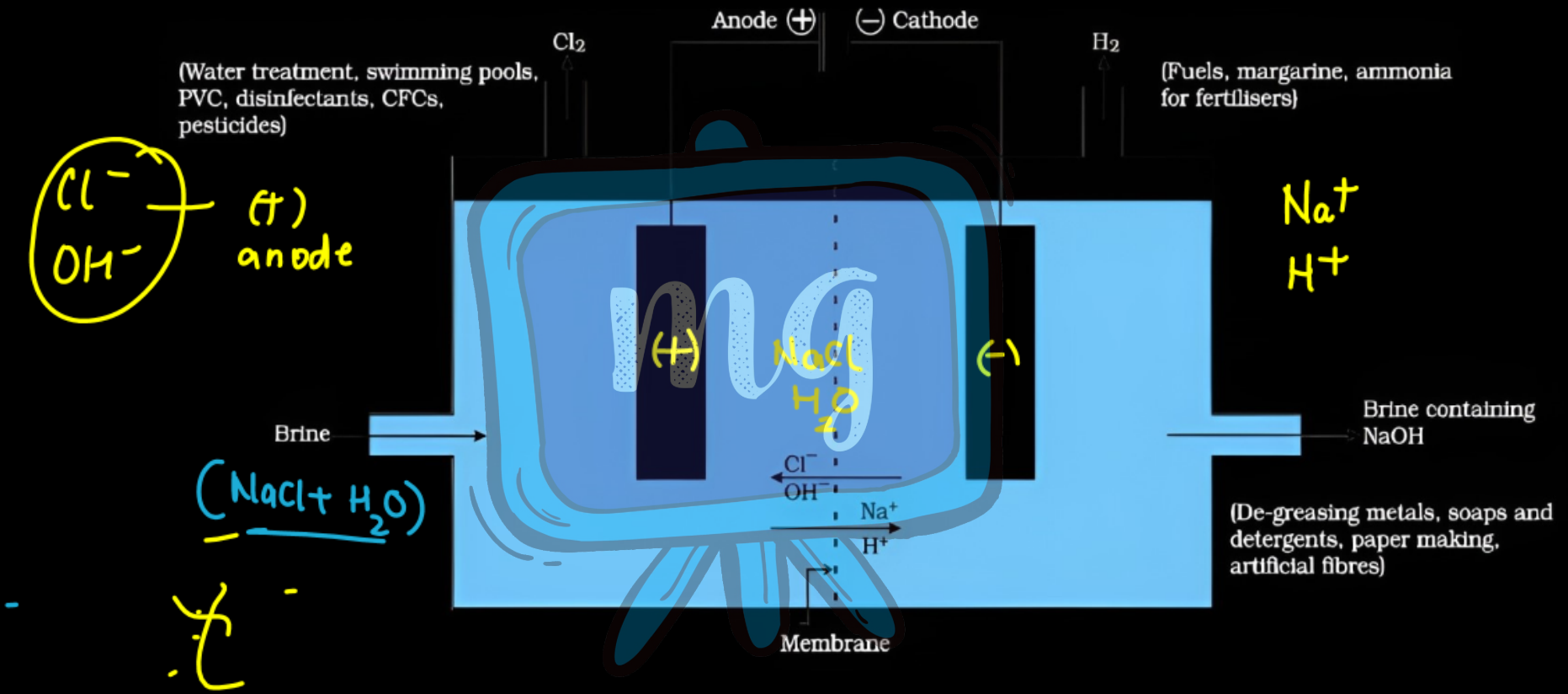
2. Sodium Hydroxide (Caustic Soda) —

- It is a strong base.
- Prepared by Chlor – alkali process.
- Electricity is passed through an aqueous solution of sodium chloride (called brine).

$$2NaCl(aq) + 2H_2O(l) \longrightarrow 2NaOH(aq) + Cl_2(g) + H_2(g)$$

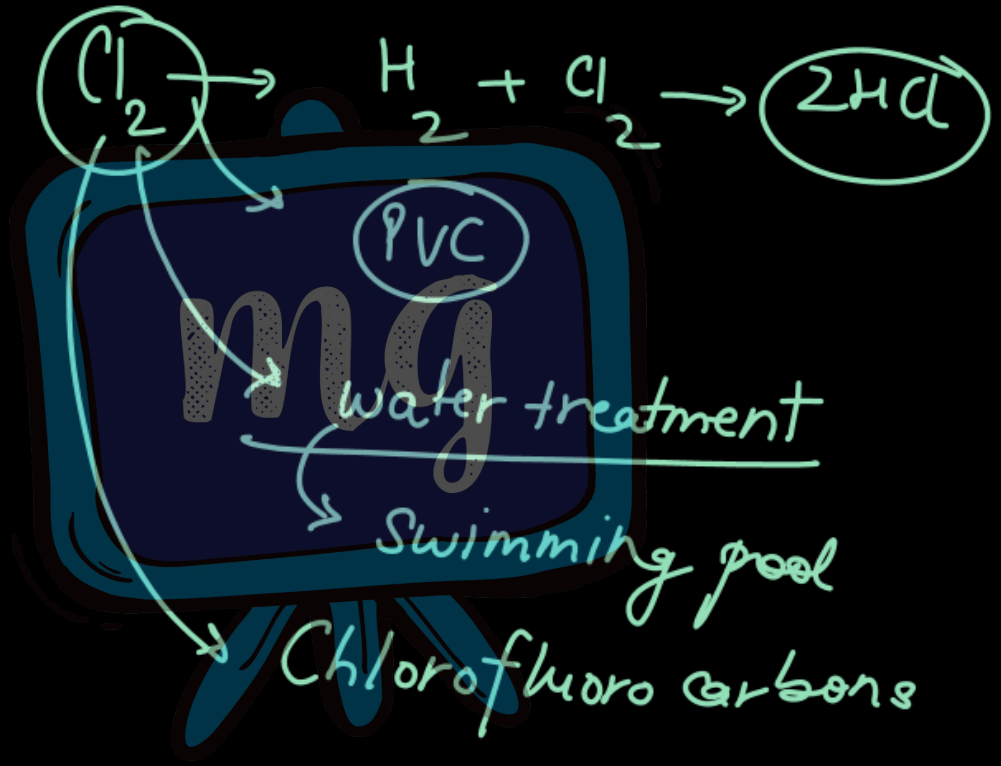
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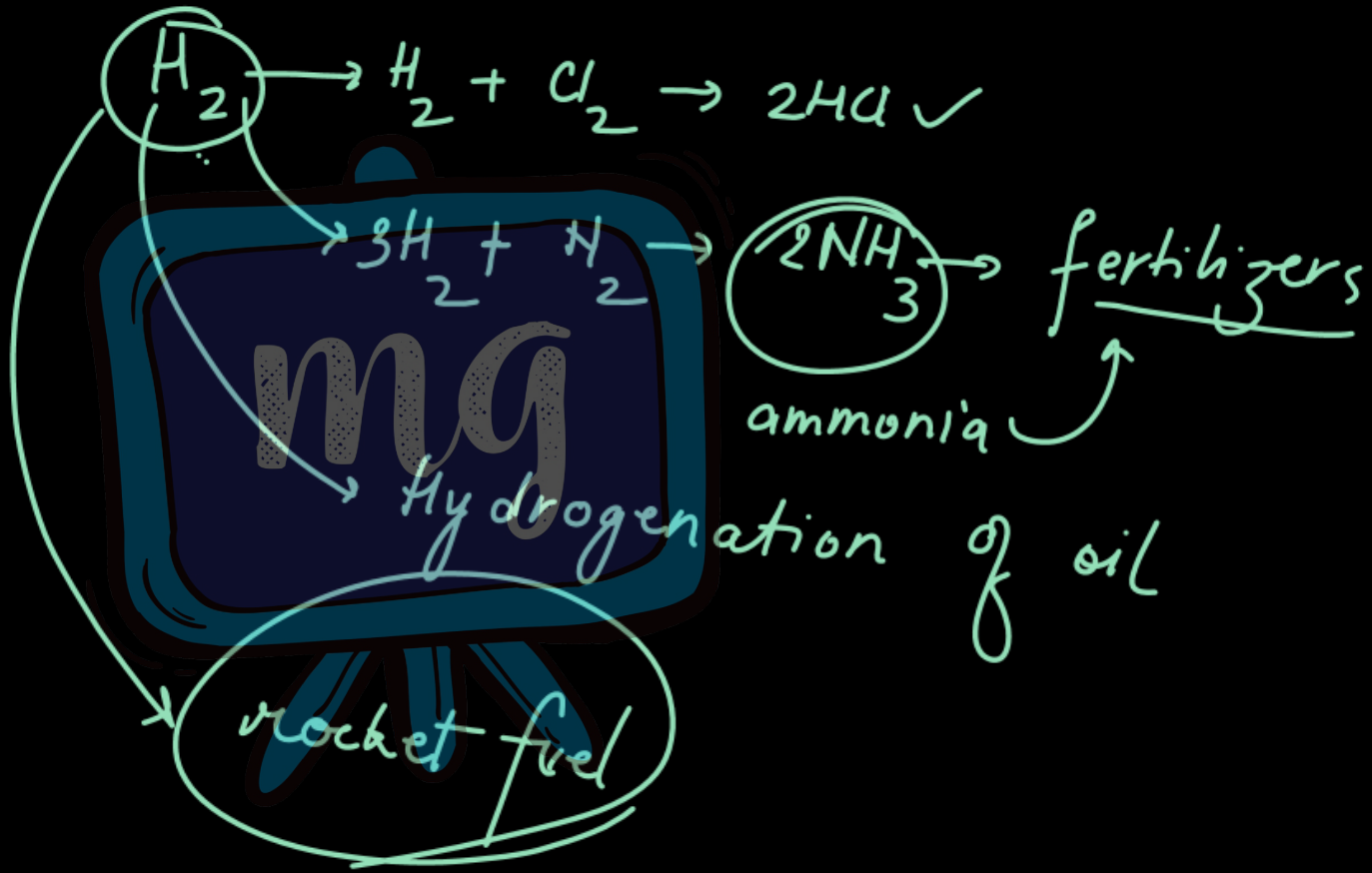
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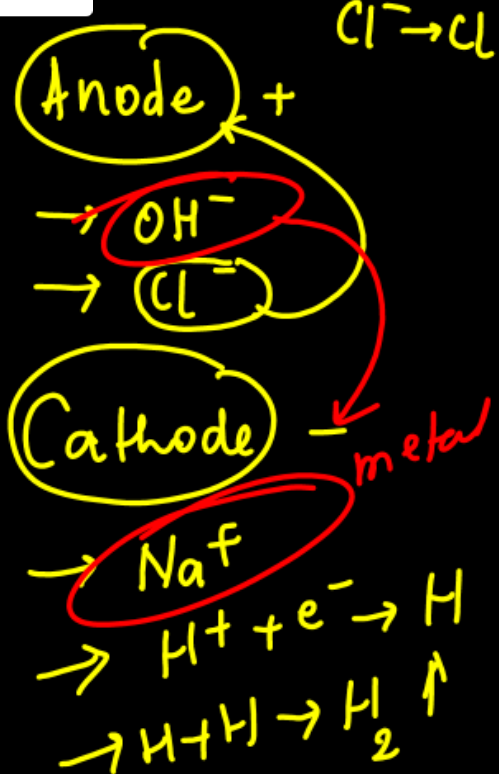
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$NaCl \longrightarrow Na^+ + Cl^-$

$H_2O \longrightarrow H^+ + OH^-$

$Na^+ + OH^- \rightarrow NaOH$

At Anode —

$Cl^- \longrightarrow Cl + e^-$

$Cl + Cl \longrightarrow Cl_2\,(gas)$

At Cathode —

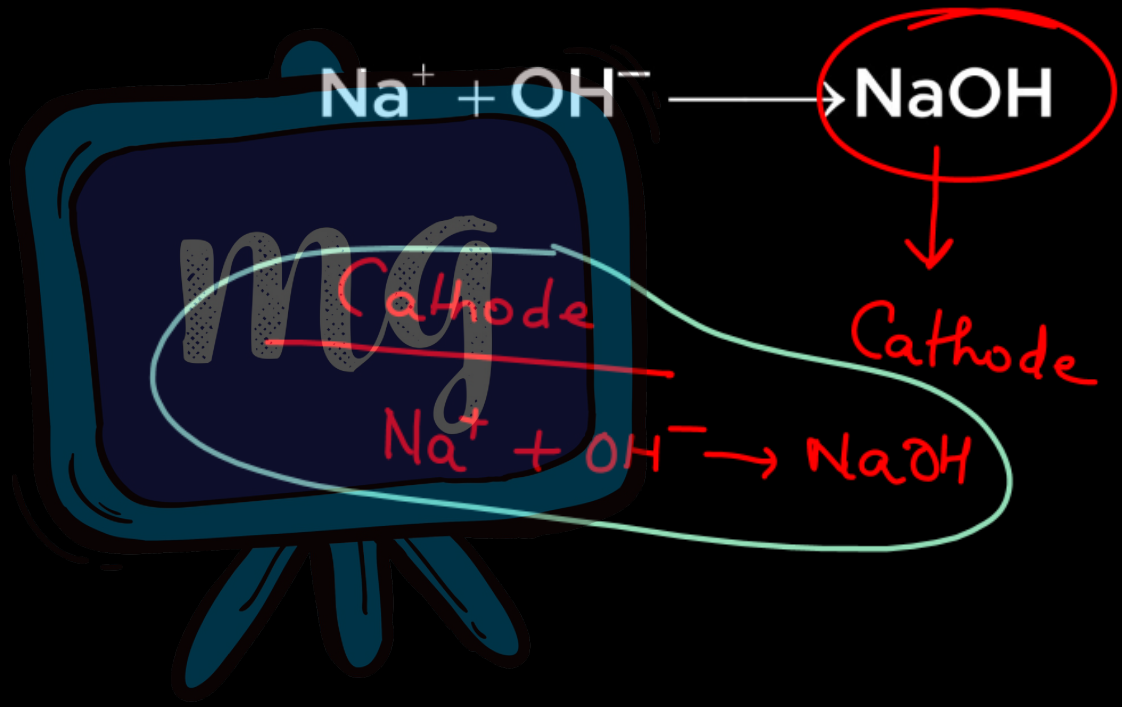
$H^+ + e^- \longrightarrow H$

$H + H \longrightarrow H_2\,(gas)$

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At Solution —



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H_2

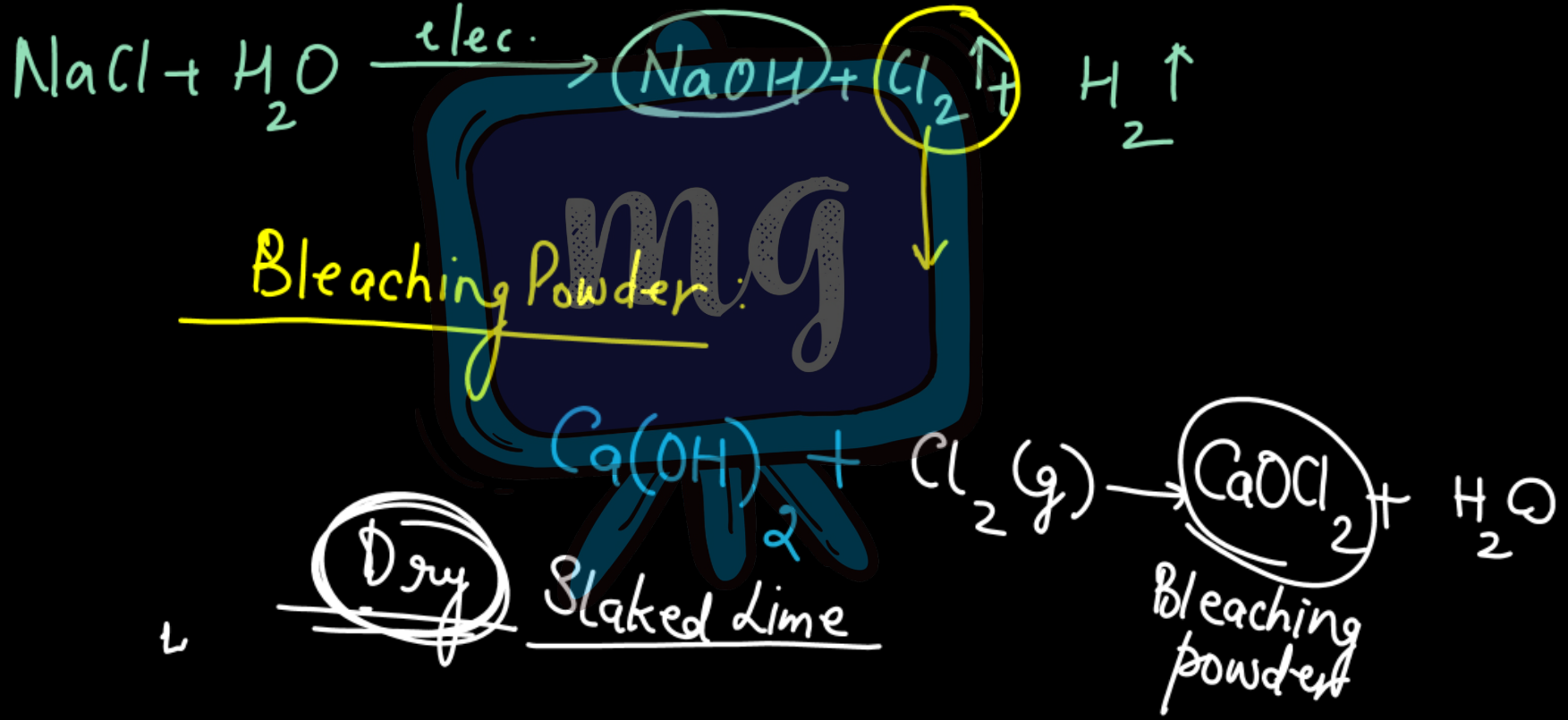
Uses of Caustic Soda —

1. Soaps, detergents and paper making.
2. Artificial fibers manufacturing.
3. De-greasing metals.
4. Manufacture of soda lime.



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Bleaching powder

3. Bleaching Powder —

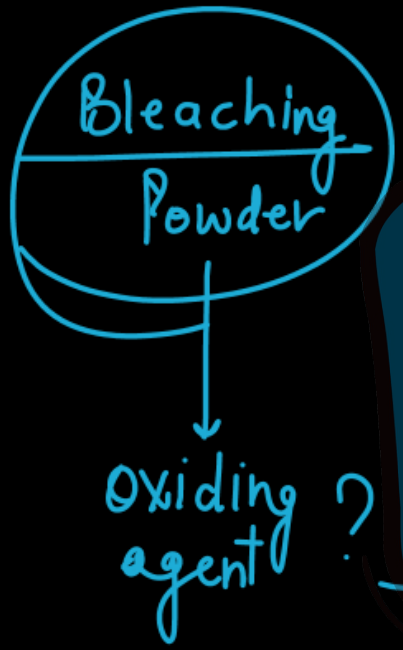
- Calcium oxychloride ($CaOCl_2$).
- Bleach → to – decolourise.
- Formation of bleaching powder

Dry slaked lime + Chlorine gas → Bleaching Powder

$$Ca(OH)_2 + Cl_2 \longrightarrow CaOCl_2 + H_2O$$

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Uses of Bleaching Powder — $CaOCl_2$

1. For bleaching cotton and linen in the textile industry, for bleaching wood pulp in paper factories and for bleaching washed clothes in laundry;
2. As an oxidising agent in many chemical industries; and

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Skin brightening
Skin whitening

$CaOCl_2$

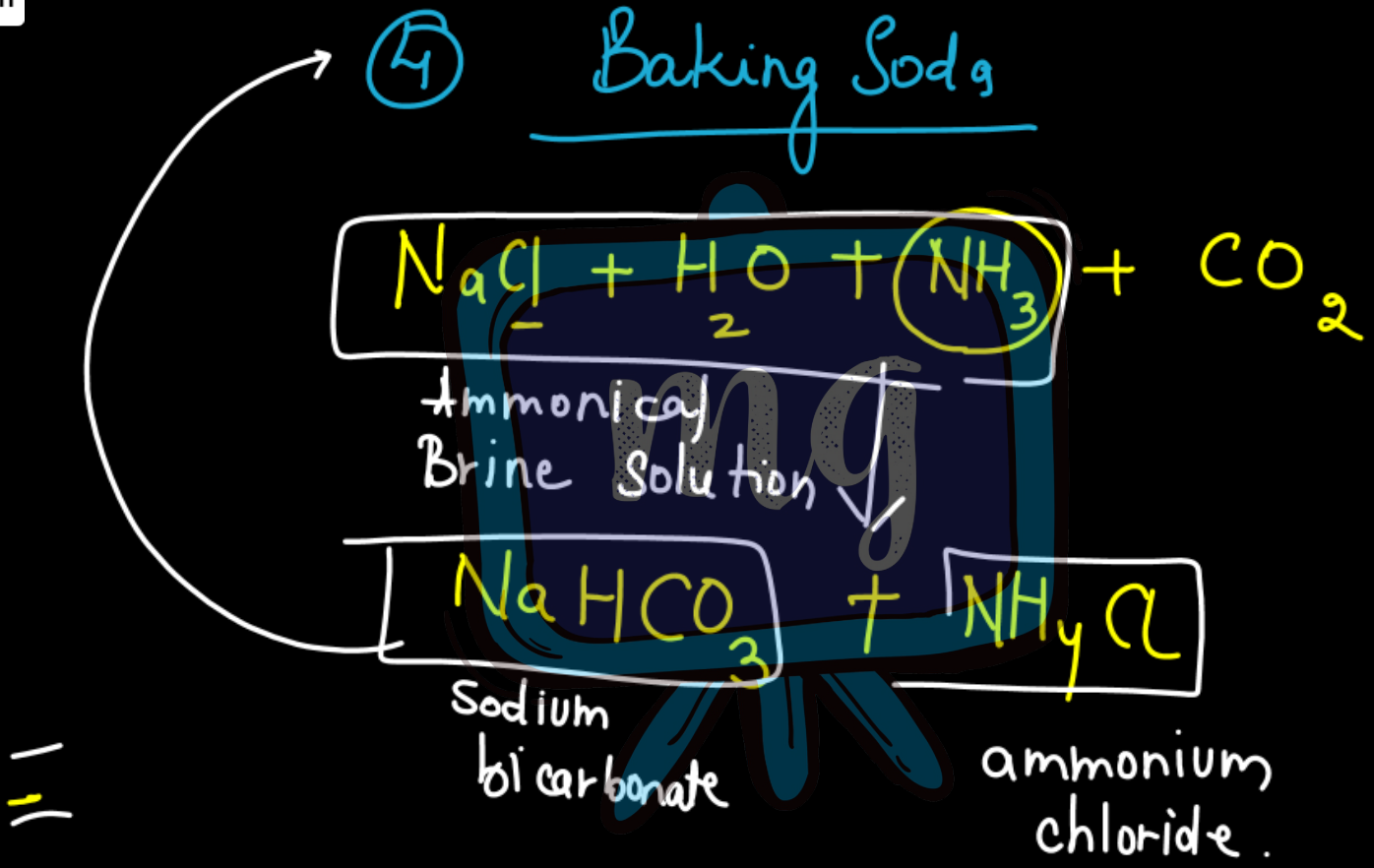
3. To make drinking water free from germs.
4. Used in cosmetic products.





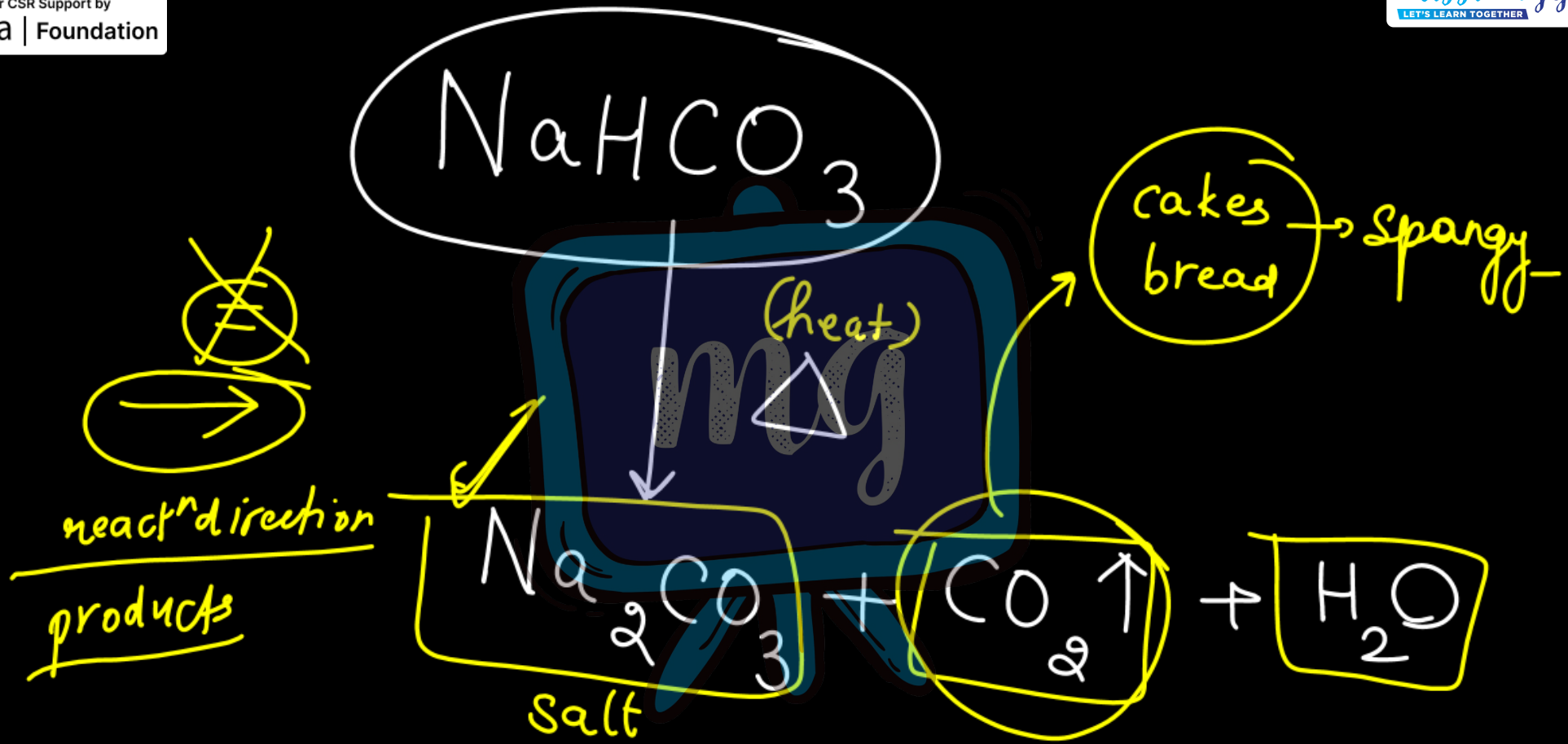
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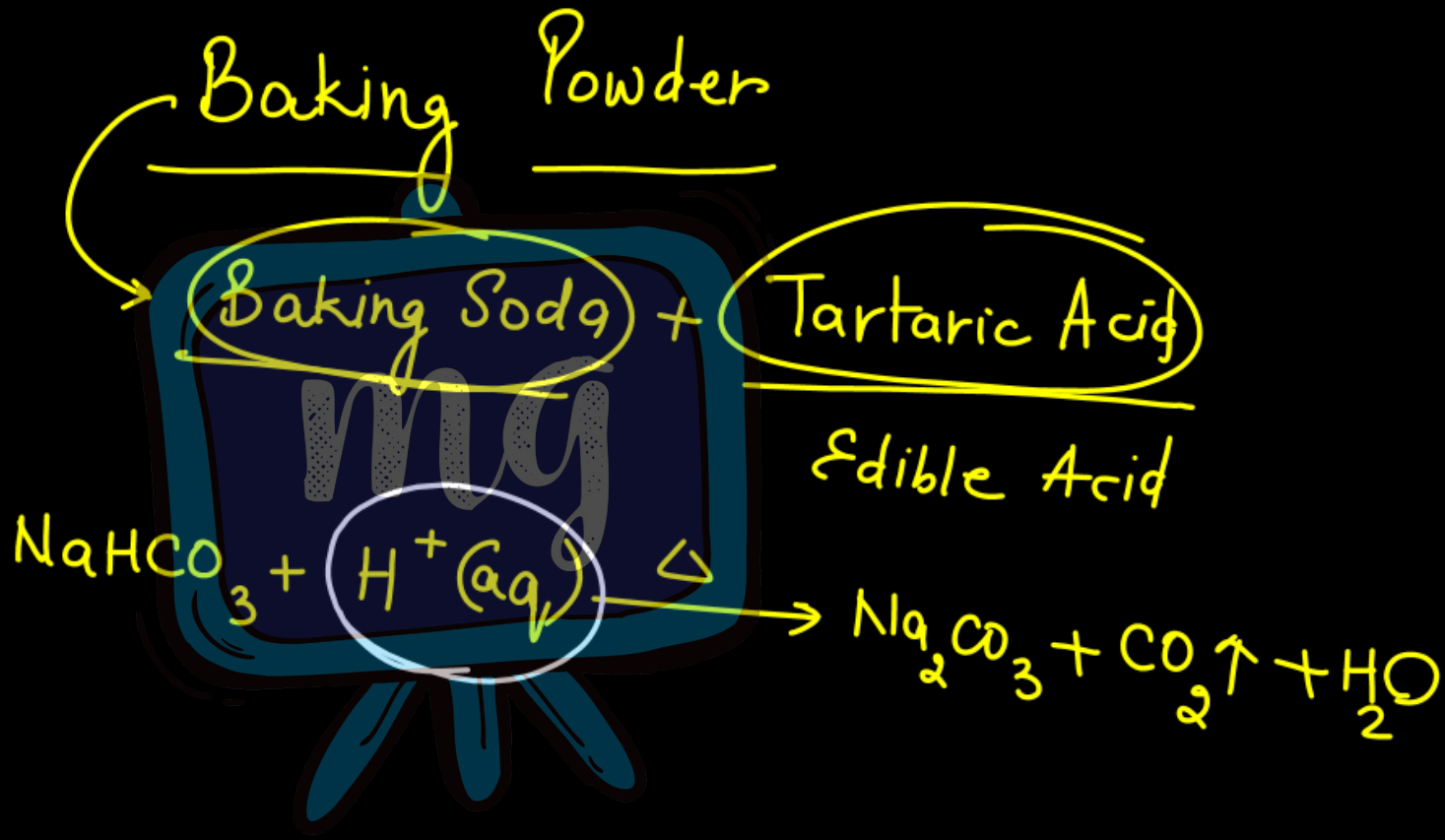
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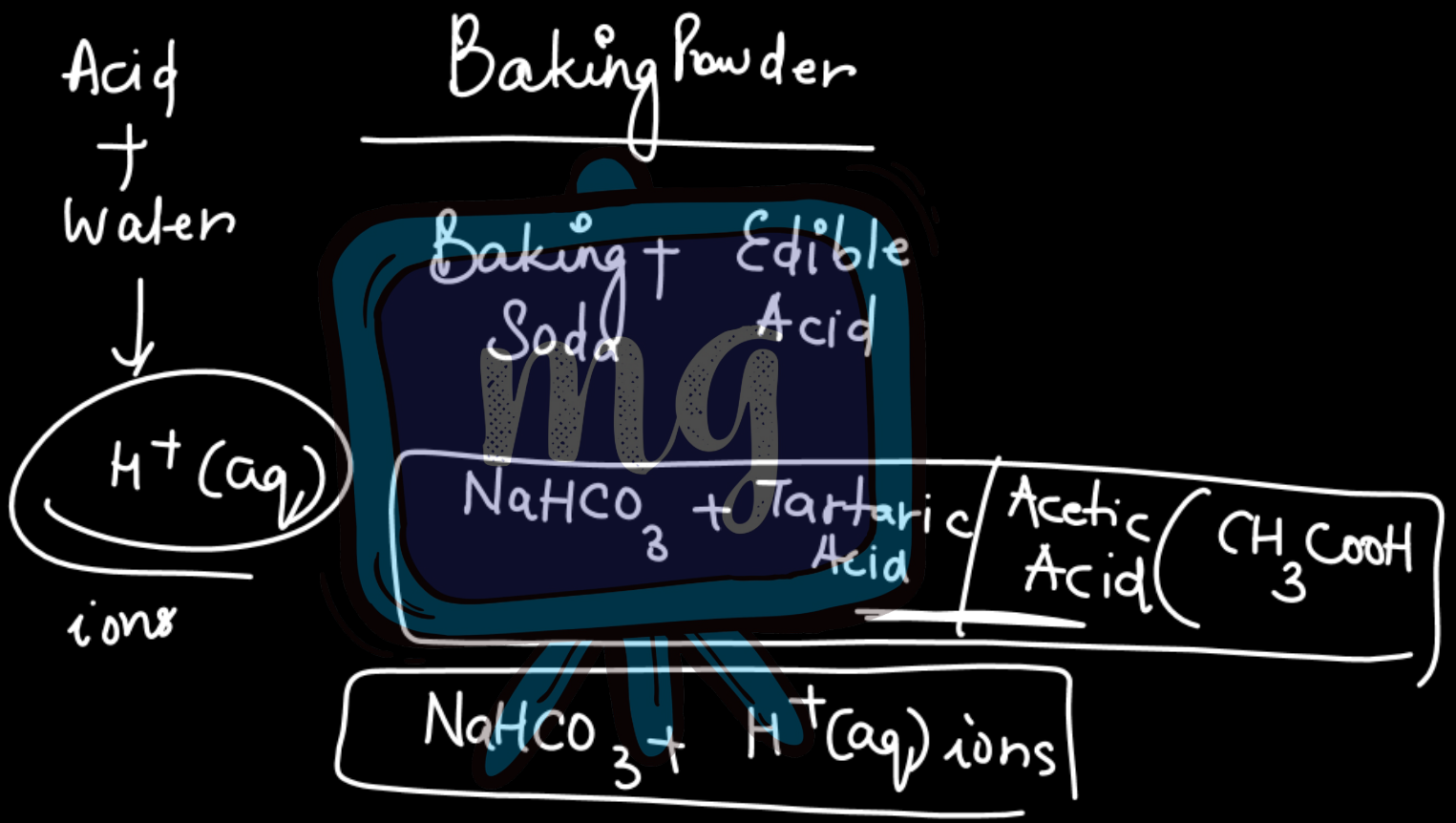
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$$NaHCO_3 + H^+ \xrightarrow{\Delta} Na_2CO_3 + CO_2\uparrow + H_2O$$



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4. Baking Soda —

- Sodium Hydrogen Carbonate or Sodium Bi Carbonate ($NaHCO_3$).
- Non-corrosive base.
- Major constituent of baking powder.

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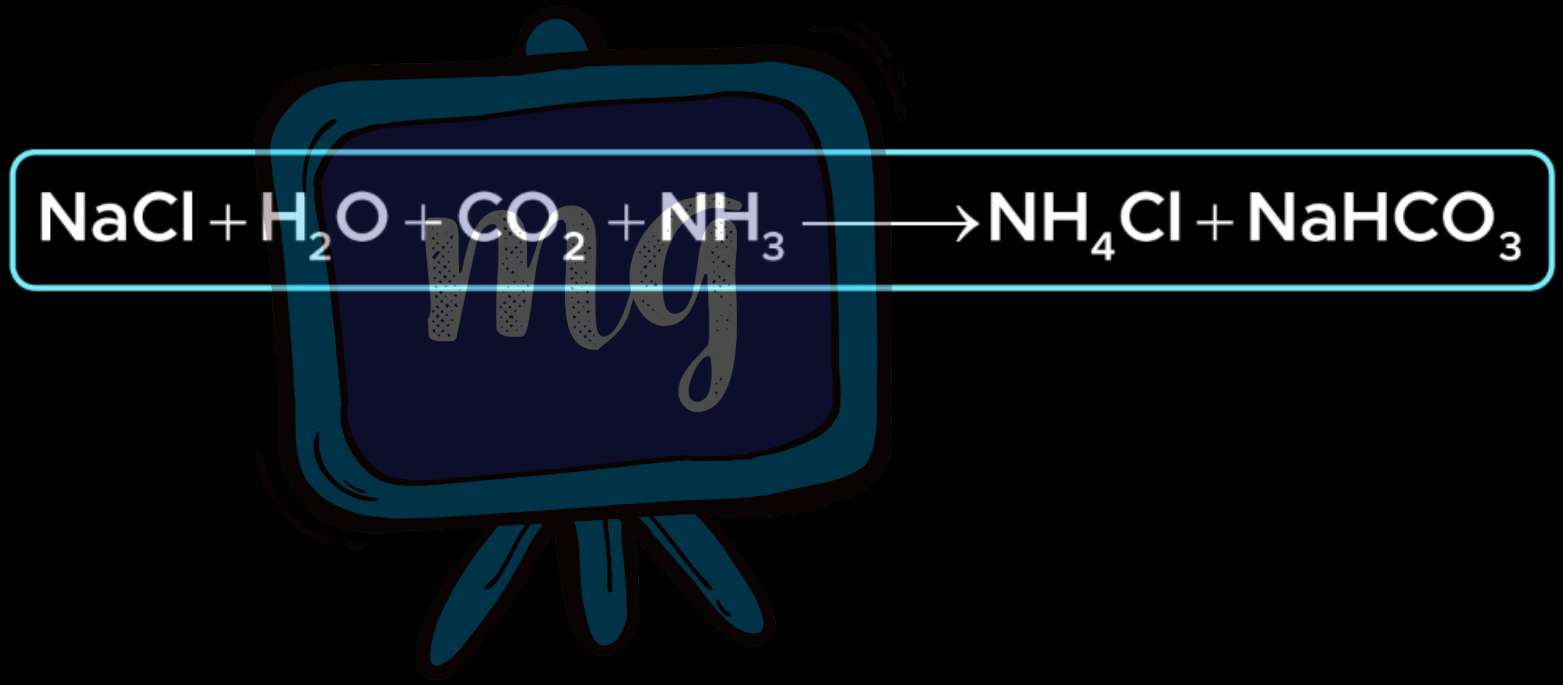
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- Use in kitchen for making crispy pakoras, added for faster cooking.



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Uses of Baking Soda —

1. For making baking powder.
   Baking soda + Mild edible acid (tartaric acid).
   Baking powder used to make cake or bread spongy and soft.

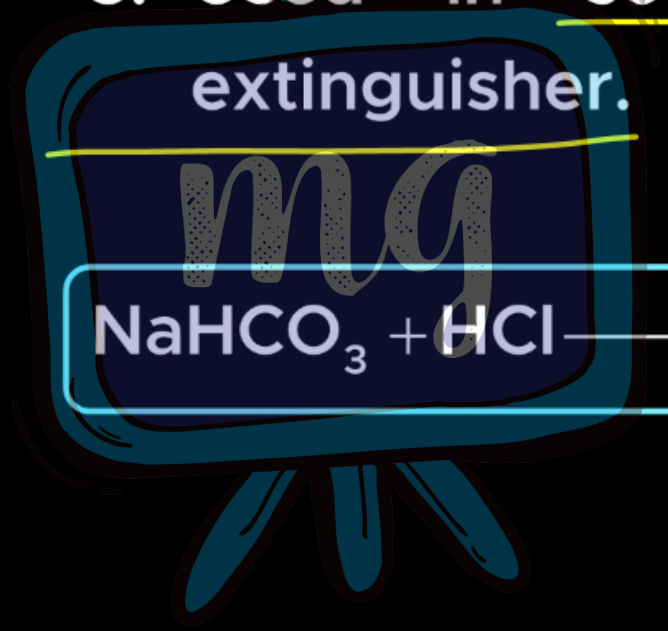
$$NaHCO_3 + H^+ \longrightarrow \underset{\text{of acid}}{\text{Sodium Salt}} + CO_2 + H_2O$$

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$NaHCO_3$ → base

2. Being alkaline, used in antacids.
3. Used in soda – acid fire extinguisher.



$$NaHCO_3 + HCl \longrightarrow NaCl + H_2O + CO_2$$