

SALT BRIDGE

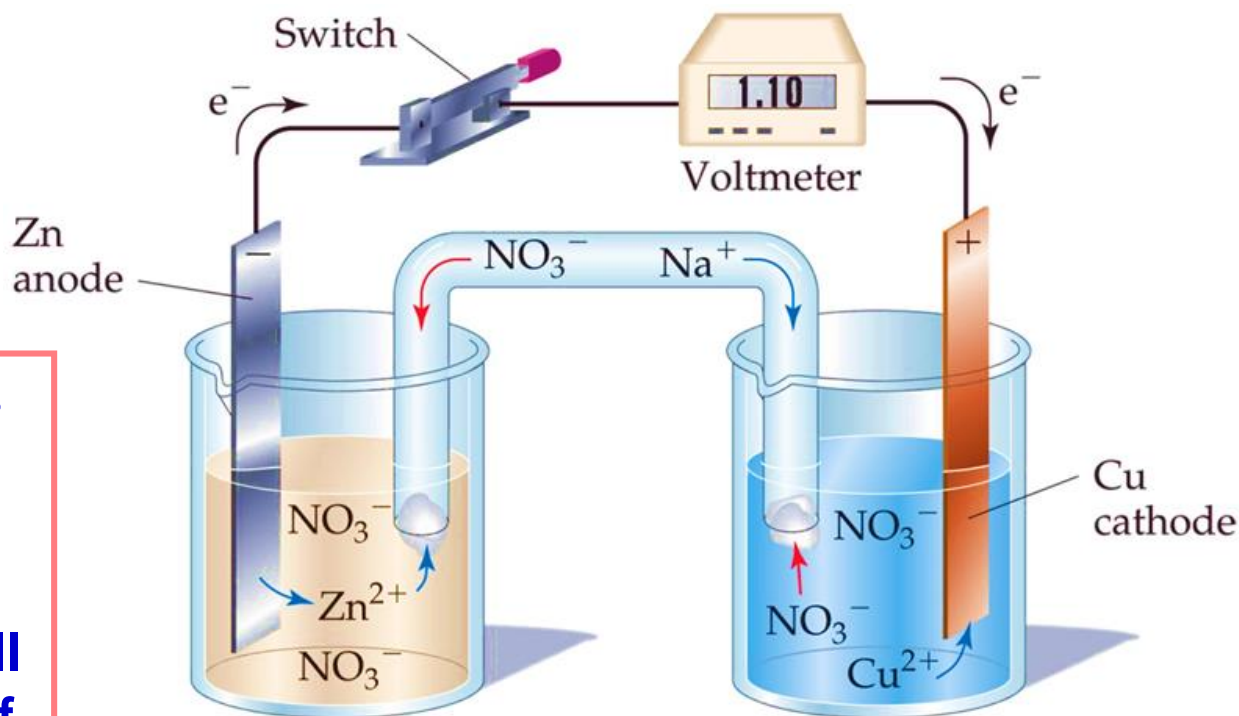
- ✿ A salt bridge contains an **electrolyte** solution that **does not take part in the reaction**.
- ✿ The salt bridge may be a **strip of filter paper** or a **U-tube** containing agar gel that soaked in saturated aqueous solution (e.g. KNO_3 , NaNO_3 , NH_4NO_3 and KCl)



Functions Of Salt Bridge

1. **To complete the circuit** by allowing ions that carry charge to move from one half-cell to another.
2. **To maintain the electrical neutrality** in the solutions surrounding the electrodes by supplying anions to neutralise the accumulation of positive charge at anode, and cations to neutralise the accumulation of negative charge at the cathode.

A Zn-Cu Voltaic Cell



Zn²⁺ ions enter the solution, causing an overall excess of positive charge.



Movement of cations



Movement of anions



Cu²⁺ ions leave the solution, positive charge removed, leaving excess of negative charge.

⇒ anions in the salt bridge move into Zn²⁺ (aq) / Zn(s) half-cell.

⇒ Cations from the salt bridge move into Cu²⁺ (aq) / Cu(s) half-cell.

If there is no salt bridge

- The reaction will cease to stop.
- The voltmeter will show a reading of 0.00 V.
- This is because excess positive or negative charges accumulate in the two half-cells.
- The charges in each half-cell would not be balanced and the flow of electrons would stop.