Modern Dry Cell Battery

Insulating

Carbon Rod

Dry Paste
$\text{NH}_4\text{Cl} + \text{MnO}_2$

Cap

$\text{NH}_4\text{Cl}$

$\text{NH}_4\text{Cl}$

Zinc Case

$\text{Zn}$
1) Ammonium Chloride dissociates in the paste
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2) Chlorine atoms combine with zinc in case: \( \text{Zn Cl}_2^- \)
   • negative charge on case
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3) Charge buildup stops transfer to case
4) Ammonium ions in the paste pull electrons off the rod
   • positive charge left on rod
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5) Charge buildup on rod prevents electrons from leaving
6) Connect Rod to Case: charge flows
   - chemical reactions replace lost charge on case/rod