

Halogen Exchange

Mastering the Finkelstein and Swarts Reactions

Finkelstein Reaction

— The Iodide Maker

Swarts Reaction

— The Fluoride Maker

Le Chatelier's Principle

— The Equilibrium Driver



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

$$E=mc^2$$



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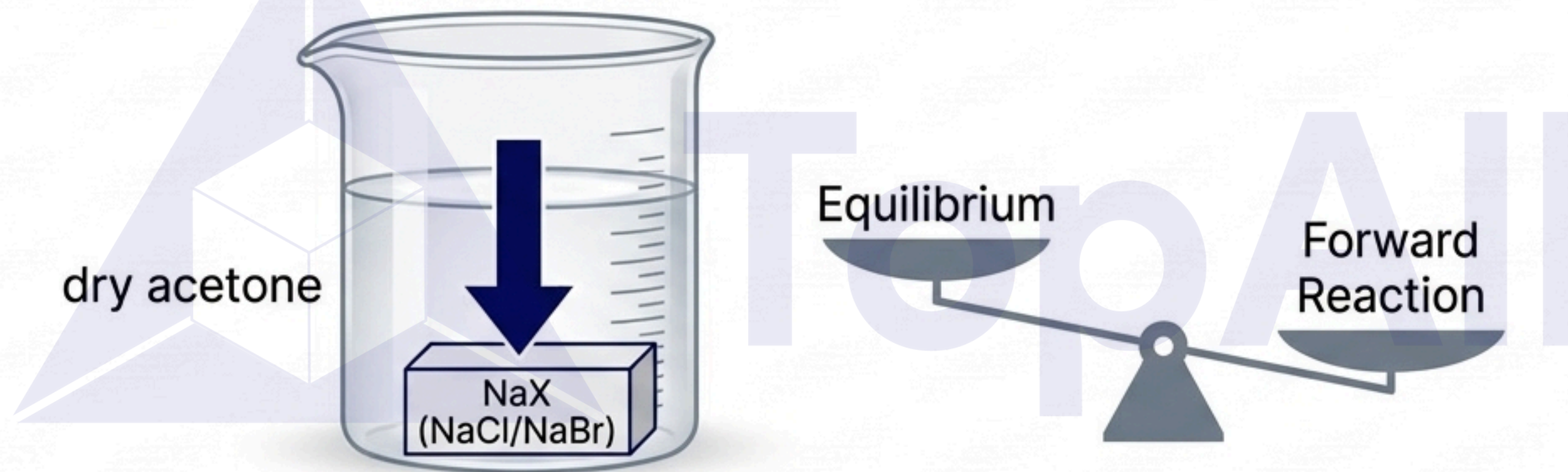
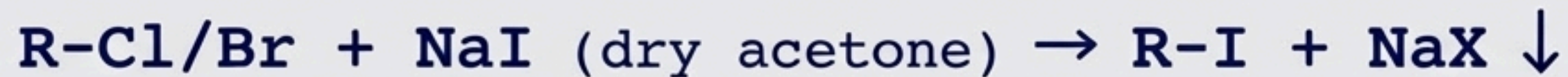


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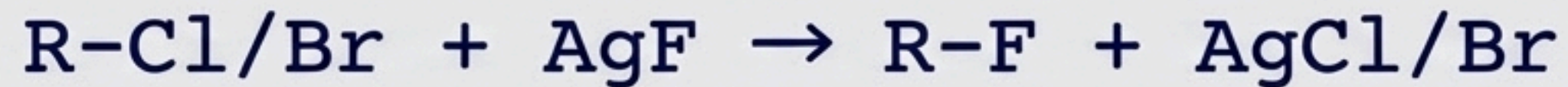
Key Highlights

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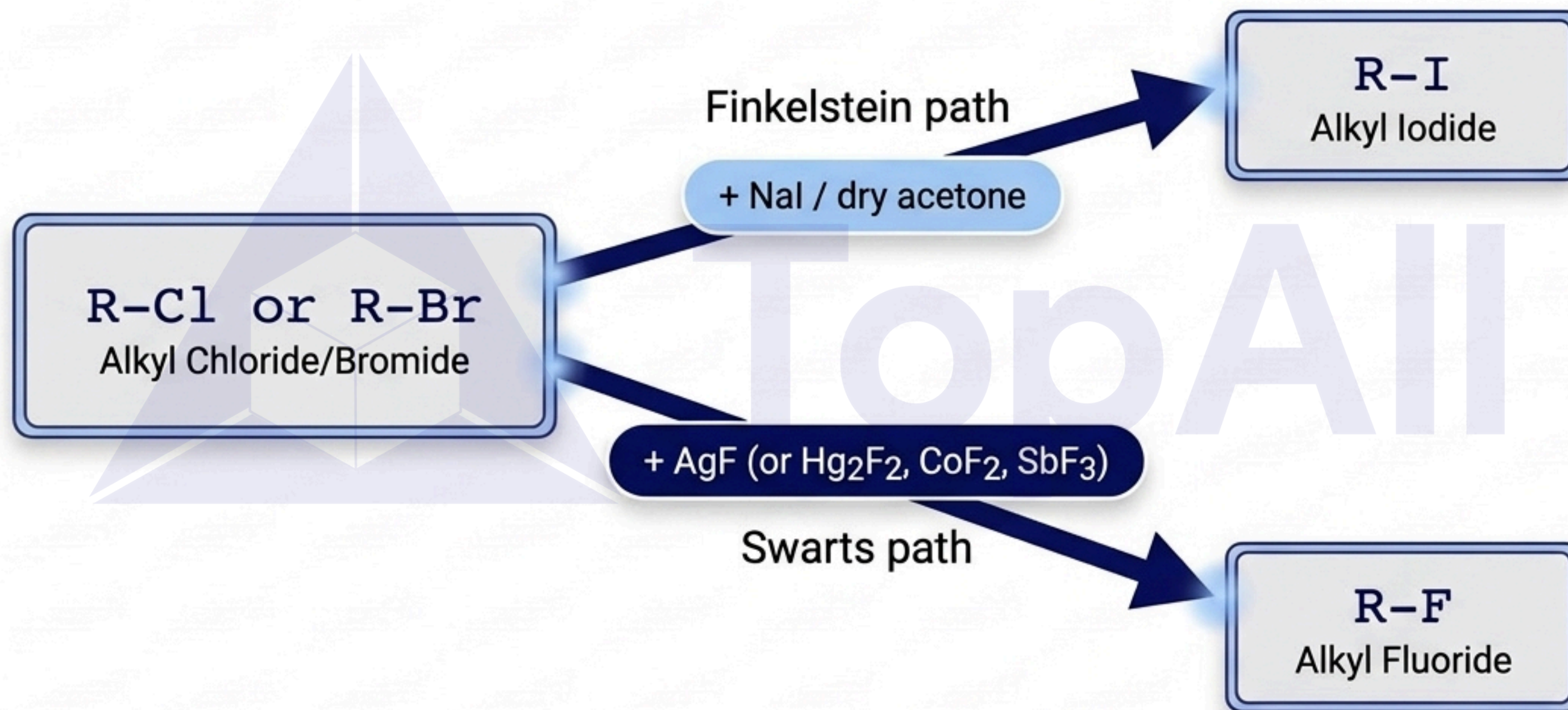
Dry acetone dissolves NaI, but not NaCl or NaBr. As the sodium halide precipitates out, it is removed from the solution. This forces the equilibrium continuously forward to produce more Alkyl Iodide, perfectly demonstrating Le Chatelier's Principle.



AgF
Hg₂F₂
CoF₂
SbF₃

Direct fluorination of alkanes is incredibly violent. Instead, we swap halogens using heavy metallic fluorides.

Molecular Exchange Board



WATCH FOR THIS:

Examiners frequently test this naming confusion.

Remember: **F**inkelstein does NOT make **F**luorides.

Finkelstein = Iodides.
Swarts = Fluorides.

Which reagent combination produces an alkyl fluoride?

A NaI / dry acetone



B AgF

Key Takeaways

- Halogen exchange reactions convert alkyl chlorides/bromides into alkyl iodides (Finkelstein) or alkyl fluorides (Swarts).
- Finkelstein is driven forward by the precipitation of NaX in dry acetone; Swarts relies on heavy metallic fluorides to safely swap in fluorine.



You've Learned the Theory.

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