

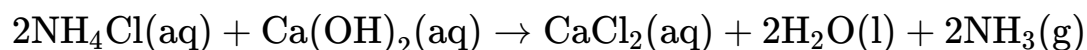
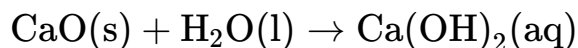
Solvay Process Ammonia Recovery

Correctness

<https://gemini.google.com/app/0c2844e15b3c4ebe>

User prompt: can we consider statement 2 as correct?

Response: In the Solvay process for manufacturing sodium carbonate (Na_2CO_3), ammonia (NH_3) is recovered from ammonium chloride (NH_4Cl) using calcium hydroxide ($\text{Ca}(\text{OH})_2$), which is formed by reacting calcium oxide (CaO) with water:



Since CaO obtained from limestone calcination is slaked with water to produce $\text{Ca}(\text{OH})_2$, which directly regenerates NH_3 , **Statement 2 is correct** (and Statement 1 is also correct, as CaCl_2 is indeed the primary by-product).
