

Sodium sulfate has formula Na_2SO_4 and sodium carbonate Na_2CO_3 . Apparently, the only way to convert sodium sulfate into sodium carbonate is reaction of sodium sulfate with barium carbonate. The last one is not soluble compound, K_{sp} (solubility products constant) is 2.58×10^{-9} , but barium sulfate is even less soluble: K_{sp} is equal to 1.08×10^{-10} , this is the reason why the next reaction occurs:

