

Arrange the mechanism steps in order:

## Mechanism for $S_N1$ Reaction

Reaction		
Step	Mechanism	
Step 1		
	Aided by the polar solvent, a chlorine departs with the electron pair that bonded it to the carbon.	This slow step produces the $3^\circ$ carbocation intermediate and a chloride ion.
Step 2		
	A water molecule acting as a Lewis base donates an electron pair to the carbocation (a Lewis acid). This gives the cationic carbon eight electrons.	The product is a <i>tert</i> -butyloxonium ion.
Step 3		
	A water molecule acting as a Bronsted base accepts a proton from the <i>tert</i> -butyloxonium ion.	The products are <i>tert</i> -butyl alcohol and a hydroxonium ion.

