

1 **Amine exchange into ammonium bisulfate and ammonium**  
2 **nitrate nuclei**

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8 **Supplemental Information**

9 Table S1. Pseudo-first order rate constants obtained for the substitution of pure 3-2  
10 ammonium bisulfate as well as for the partially substituted cluster with DMA.

Initial Substitution	Pseudo-first order rate constant (s <sup>-1</sup> )		
	<i>k</i> <sub>1</sub>	<i>k</i> <sub>2</sub>	<i>k</i> <sub>3</sub>
$[(\text{NH}_4)_3(\text{HSO}_4)_2]^+ \rightarrow [(\text{NH}_4)_2(\text{HDMA})(\text{HSO}_4)_2]^+$	0.49 ± 0.03	0.41 ± 0.03	0.44 ± 0.05
$[(\text{NH}_4)_2(\text{HDMA})(\text{HSO}_4)_2]^+ \rightarrow [(\text{NH}_4)(\text{HDMA})_2(\text{HSO}_4)_2]^+$		0.40 ± 0.01	0.42 ± 0.01
$[(\text{NH}_4)(\text{HDMA})_2(\text{HSO}_4)_2]^+ \rightarrow [(\text{HDMA})_3(\text{HSO}_4)_2]^+$			0.43 ± 0.02

11