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### On the Redox Properties of Cyclophosphanes

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# On the Redox Properties of Cyclophosphanes

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While sulfur rings form stable, isolable dications, corresponding dications of cyclophosphanes are not known so far. Here we report on the electrochemical formation of the mono- and dication of **1** ( $R=N(i\text{-propyl})_2$ ). The monocation of **1** is a stable species, even at room temperature. On the contrary the corresponding dication rearranges under a sequence of fast 1.2-shifts of the substituents, even at temperatures below  $-80^\circ\text{C}$  to intermediary 'carbene-like' structures, which finally fragment into the diamino-phosphenium cation, **3**, and  $P_2$  (which subsequently polymerizes). Quantum chemical investigations are in support of these findings and suggest a general model for the redox properties of cyclophosphanes.

