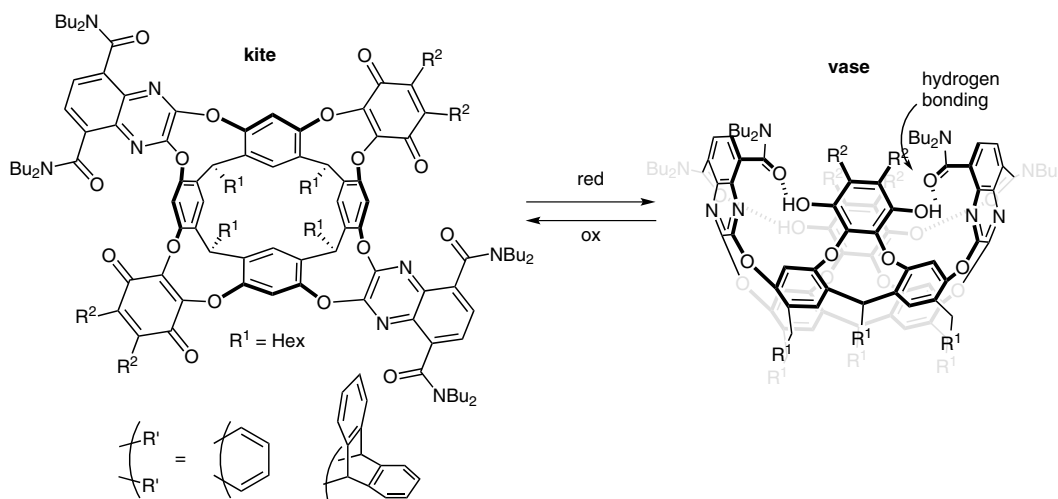


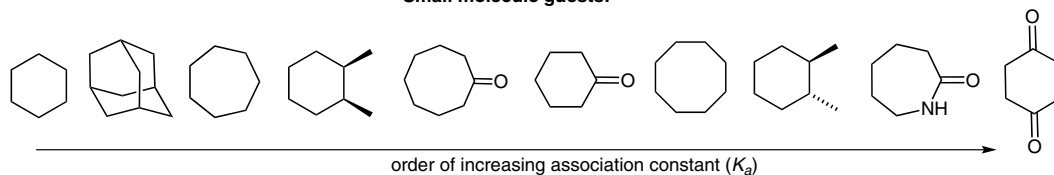
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Redox-Switchable Resorcin[4]arene Cavitands: Molecular Grippers  
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## Redox-Switchable Cavitands: Molecular Grippers



### Small molecule guests:



**Significance:** Here, a diquinone-based resorcin[4]arene cavitand goes from a kite to a vase form when reduced. The vase forms via hydrogen bonding between the central diols and the oxygens of the amides. This vase is stable even at  $-80$  °C and can be used to capture the small molecule guests shown above. The molecules are shown in order of increasing association constant  $K_a$ . The vase cavitand releases the guests upon oxidation.

**Comment:** Both the kite and vase form are stable in deuterated chloroform, tetrahydrofuran, and mesitylene. After two to four days, the reduced form reverts into the oxidized form. A crystal structure of the reduced form has a  $7.3^\circ$  cavity, which allows it to encapsulate the solvent molecule mesitylene, as well as the larger guest molecules.

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