

Diels-Alder Reactions of Dienophiles and Cyclopentadiene Using a Sealed Tube Protocol

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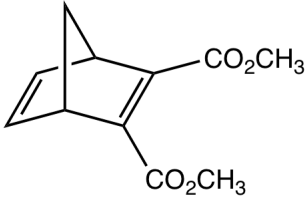
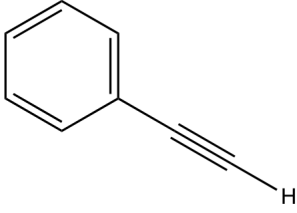
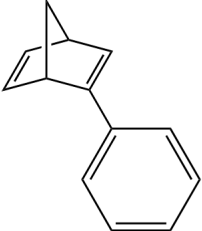
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Procedure

- Rather than 'crack' dicyclopentadiene in a separate step, reactants are placed in a sealed tube and heated to 180 for various times
- Dienophile as limiting reagent
- Analyze by GC/MS and NMR

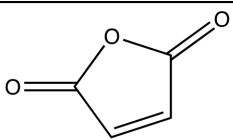
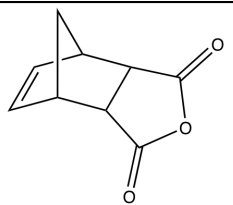
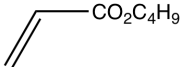
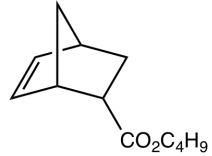
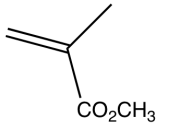
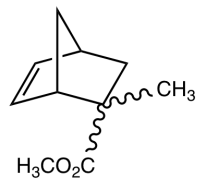
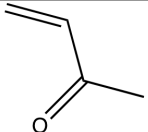
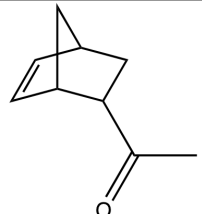
Alkyne dienophiles

- No stereochemical implications

Dienophile	Mass dienophile Time	Product	Endo/Exo	Yield
	3.5g 60min		NA	75%
	2.55g 90min		NA	trace

Alkene dienophiles – less stereoselectivity than low T

Likely not exclusively a kinetic phenomenon – at least somewhat reversible

	4.96g 60min		4/1	46%
	3.25g 3.5h		1.85/1	90
	2.55g 3.5h		0.64/1	80%
	2.14g 60min		2.56/1	10%