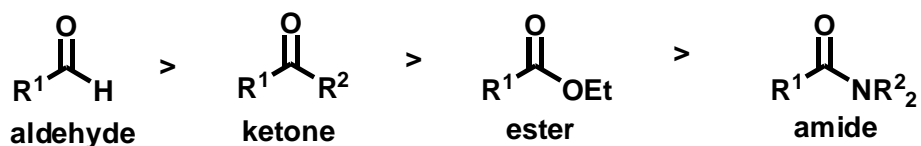


## Crossed Aldols

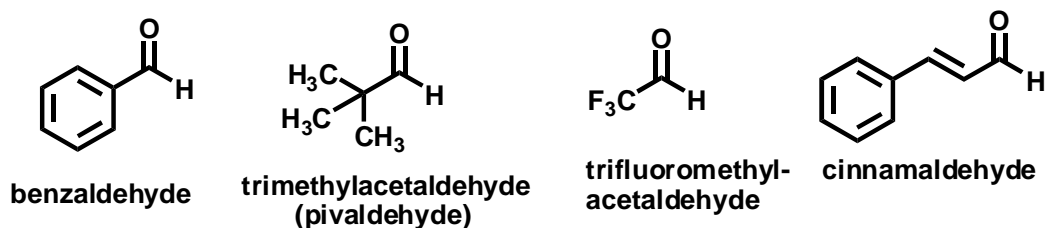
So far we have done the aldol reaction between two of the same molecules, but it doesn't absolutely have to be this way. It *is* possible to do base catalyzed aldols between two different molecules, but there are a couple of requirements that must be met in order for the reaction to work well:

- 1) Only *one* of the carbonyls can be enolizable
- 2) The *non*-enolizable one must be more electrophilic

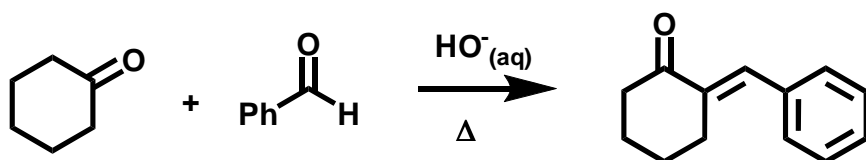
The order of reactivity of carbonyls to nucleophiles is as follows:



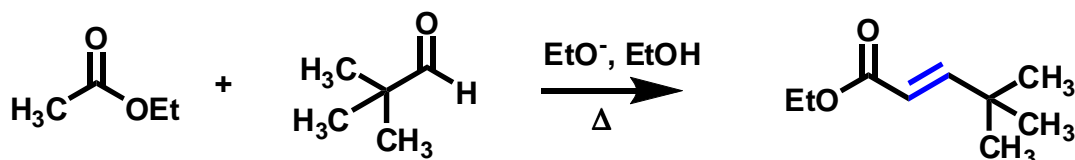
So, excellent choices for carbonyls that will react as the electrophilic part only in a base catalyzed aldol include:



An example of a well-working crossed aldol would then be:

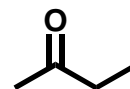


Under such circumstances, the fact that an ester isn't quite as acidic really doesn't matter any more; it can be used as the enolate source, provided that you're wise with the choice of base for the aldol.

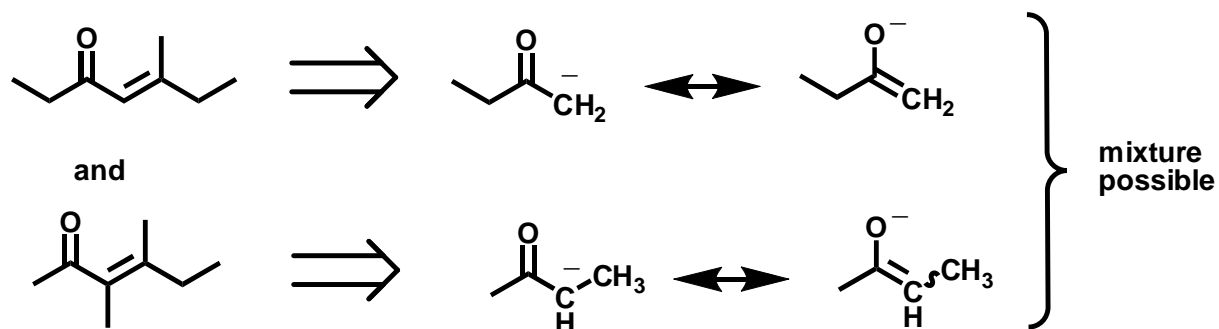


## Aldols in Unsymmetrical Ketones

So far, we have been doing pretty simple aldol, where there is only one potential acidic C-H. Consider, for example, the following case.....what if an aldol was attempted on this compound?



Neglecting alkene stereochemistry, there are two possible products...



Answer?- There must be a better way of doing this.

It does turn out, though, that it isn't always absolutely impossible. Consider something like 3-methyl-2-butanone.

