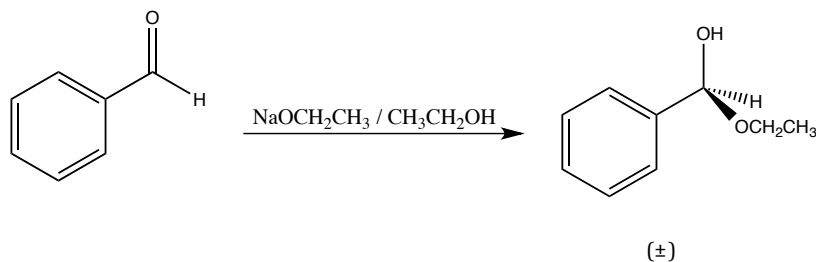
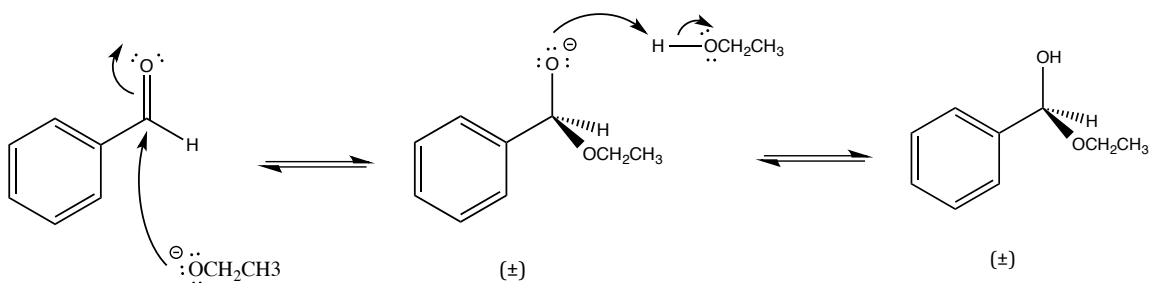


Base Catalyzed Formation of a Hemiacetal

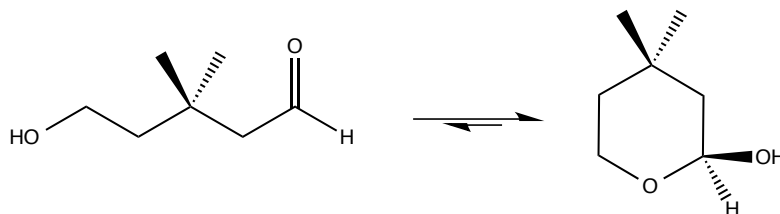
Reaction:



Mechanism:



Hemiacetals can be synthesized in basic solution. But they cannot further react to form an acetal in basic solution. Furthermore, hydroxy aldehydes can react spontaneously to form cyclic hemiacetals of *five* or *six*-membered rings.



Cyclic hemiacetals are readily formed from sugars in aqueous solution. They are quite stable even under slightly acidic conditions. The hemiacetal carbon atom is stereogenic. This new stereogenic center is called anomeric carbon.

