

INTERCONVERSION: GOING DOWNHILL

The potential energy curve linking the carboxyloids can be used as a guide to how these compounds can be interconverted. In general, it is possible to take a compound that is higher on the ski hill and convert it to a compound that is lower on the ski hill.

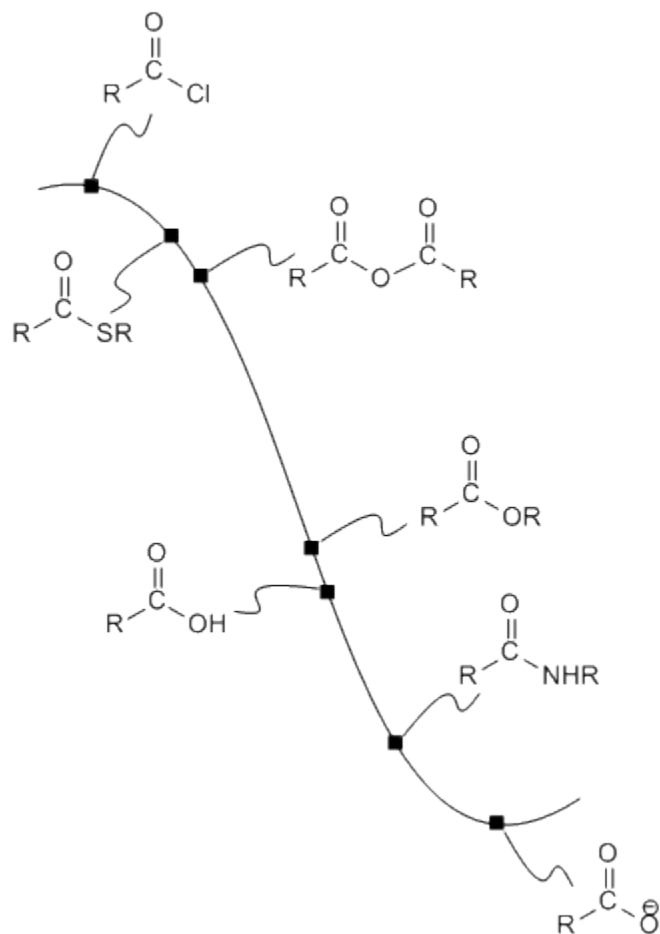
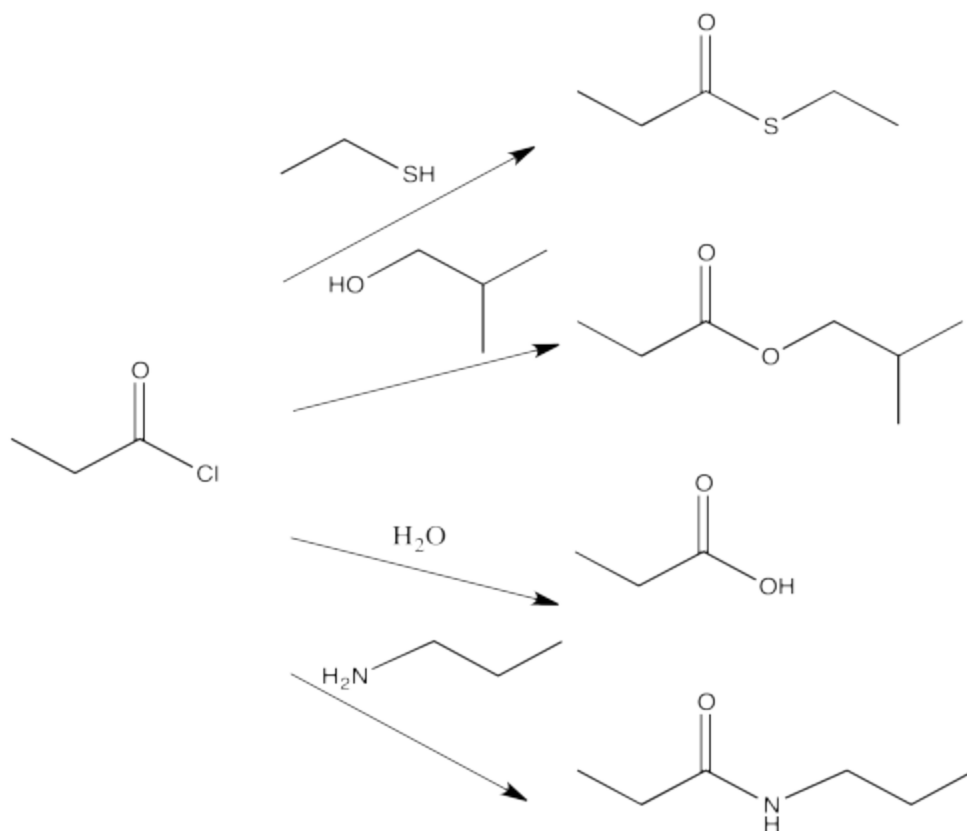


Figure CX4.1. The potential energy surface linking carboxyloids.

For example, acid chlorides are widely used to make other carboxyloids. By choosing the correct nucleophile, an acid chloride could be converted to any of the other derivatives. This is really the whole point of an acid chloride; it has no other function other than to provide an easy way to make other derivatives.



Acid anhydrides, also high on the potential energy curve, are also used in the same way. They could be used to make any of the derivatives lower than they are on the ski hill. In turn, acid anhydrides could conceivably be made from acid chlorides. However, because an acid anhydride plays the same role as an acid chloride -- providing a source with which to make the other derivatives -- we wouldn't normally make an acid anhydride from an acid chloride. We would either make one of the other derivatives directly from the acid chloride, or else make it from an acid anhydride that was obtained in another way.

Source : <http://employees.csbsju.edu/cschaller/Reactivity/carboxyl/carboxyldownhill.htm>