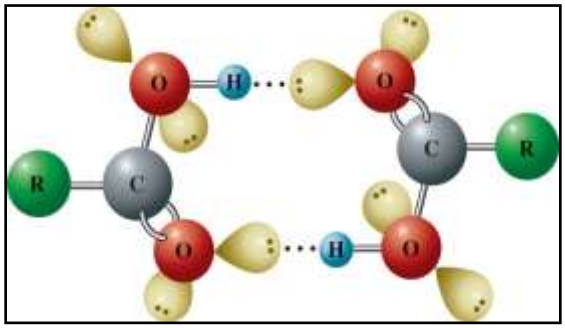
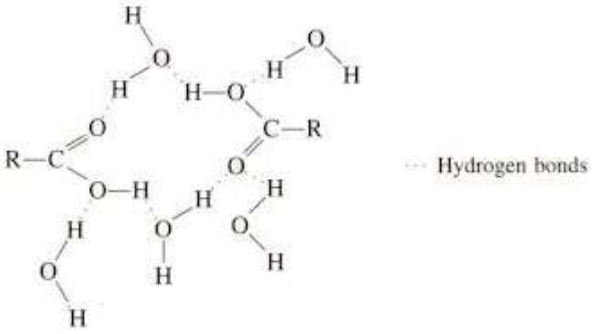
## 16.6 Physical Properties of Carboxylic Acids

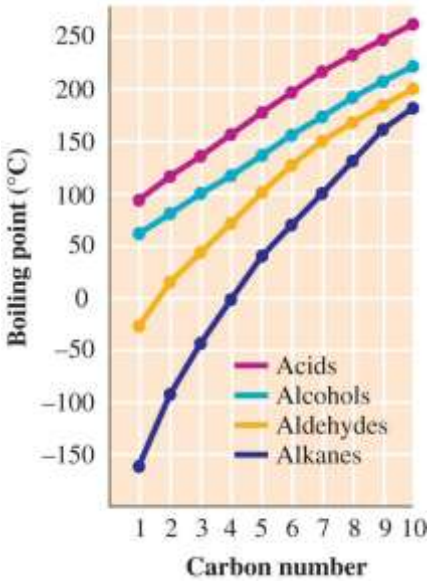
Carboxyl groups exhibit very strong hydrogen bonding. A given carboxylic acid molecule form two hydrogen bonds to another carboxylic acid molecule, producing a "dimer", a complex with a mass twice that of a single molecule.

Compounds with carboxyl groups have higher boiling points than alcohols. This is because the carboxyl groups hydrogen bond more strongly than alcohols.






Carboxyl groups make molecules very soluble in water because the group can strongly hydrogen bond with water.




## Physical Properties of carboxylic acids derivatives

Depending upon the substituent replacing -OH of the caboxylic functional group the physical properties could change.
However, they have lower boiling and melting points than parent acid.