



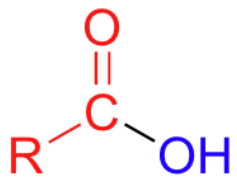
Derivati karboksilnih kiselina



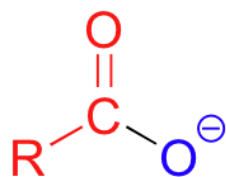


Derivati karboksilnih kiselina

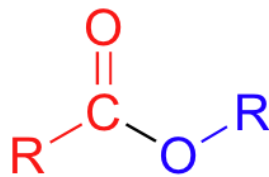
- derivati karboksilnih kiselina nastaju zamjenom -OH grupe u -COOH grupi
- derivati kiselina u reakciji s vodom ponovno daju karboksilne kiseline iz kojih su izvedeni



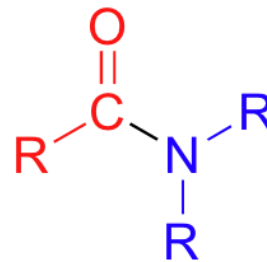
karboksilna
kiselina



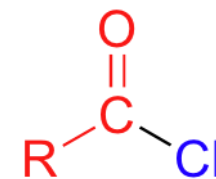
karboksilat



ester



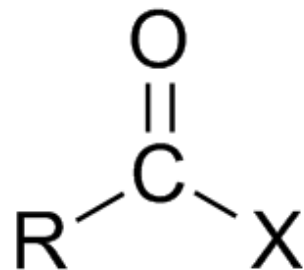
amid



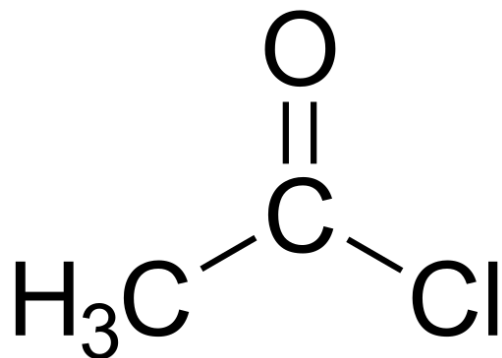
acil-halogenid
(klorid)



Acil-halogenidi



- derivati karboksilnih kiselina u kojima je atom halogenog elementa neposredno vezan za acilnu skupinu
- imena acil-halogenida dobiju se kada se umjesto sufiksa **-ska kiselina** doda sufiks **-oil** i odvojeno crticom doda naziv halogenida



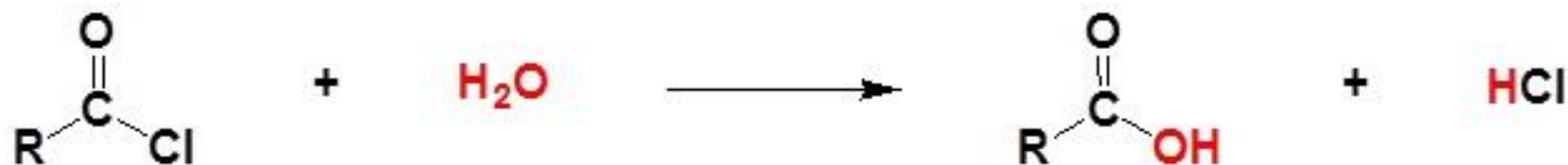
etan**oil-klorid**

acetil-klorid

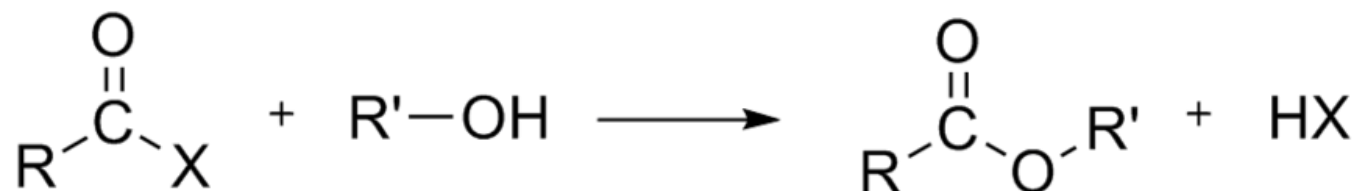


Acil-halogenidi

- vrlo reaktivni spojevi koji se koriste u organskoj sintezi
- u reakciji s vodom daju karboksilne kiseline



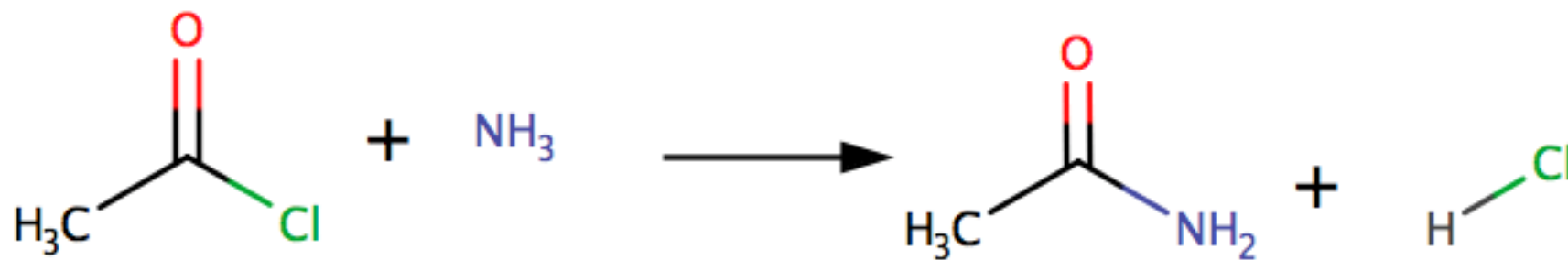
- s alkoholima daju estere





Acil-halogenidi

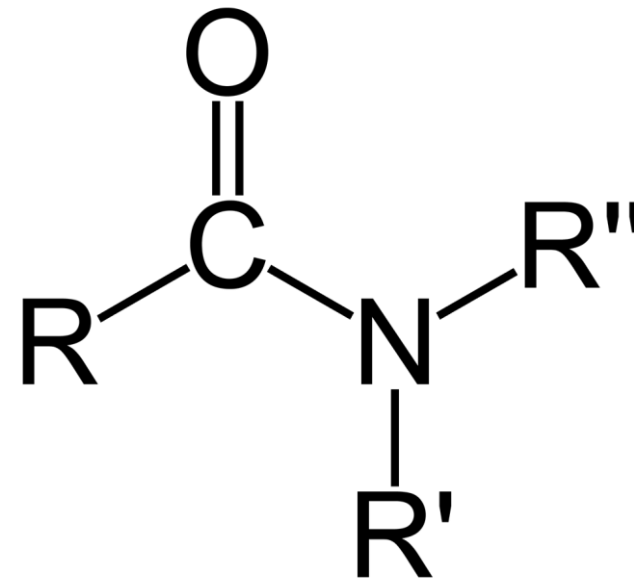
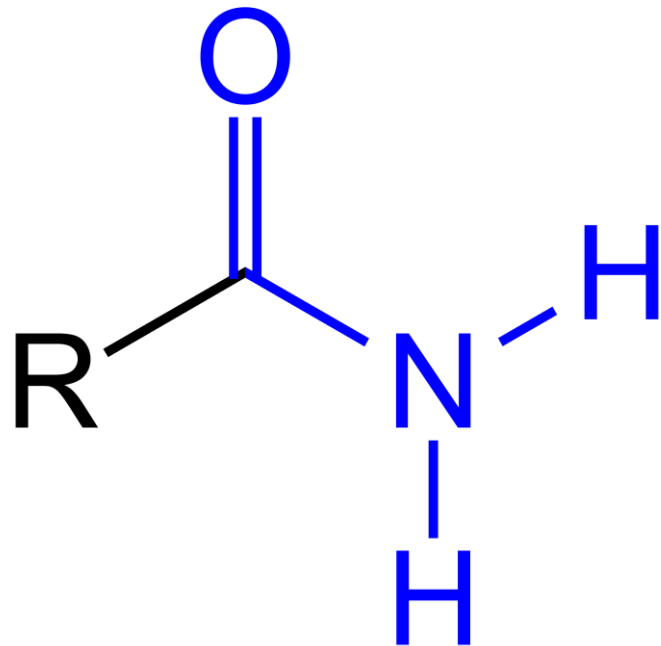
- u reakciji s amonijakom nastaju amidi





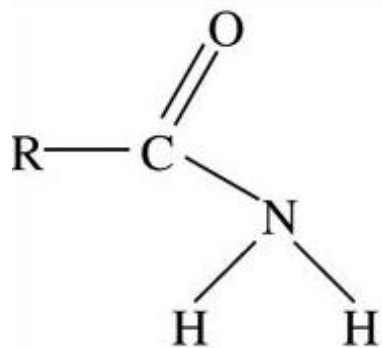
Amidi

- nastaju zamjenom –OH iz karboksilne grupe amino grupom

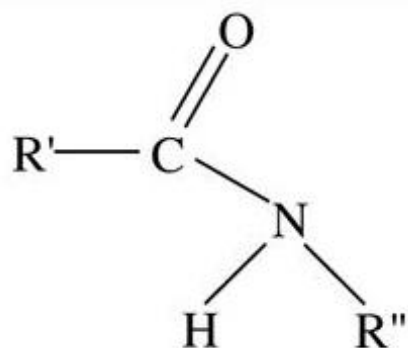




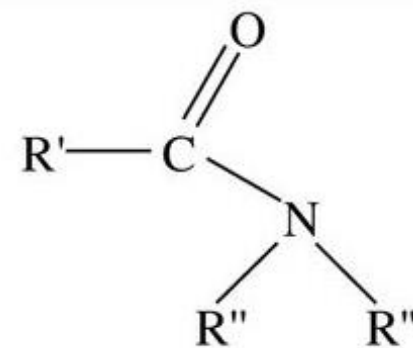
Podjela amida



PRIMARNI



SEKUNDARNI

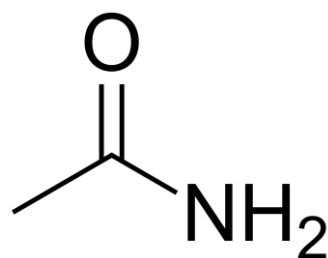


TERCIJARNI

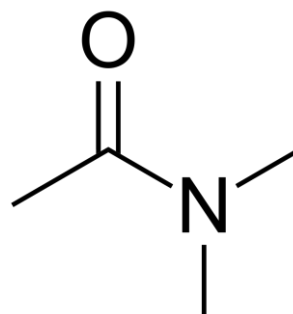


Nomenklatura amida

- amidi karboksilnih kiselina dobivaju sustavna imena tako da se u imenima odgovarajućih karboksilnih kiselina sufiks **–ska kiselina** zamijeni sufiksom **–amid**
- prefiksi **N-** i **N,N-** stavljaju se u nazivima sekundarnih i tercijarnih amida ispred supstituenata (R) koji su vezani na **dušikov atom**



etan**amid**
acet**amid**



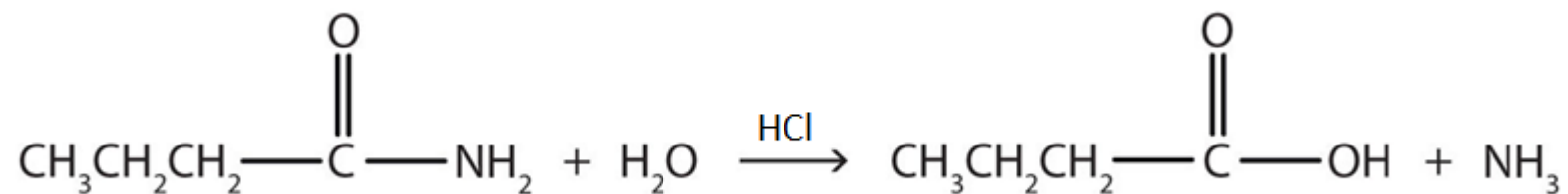
N,N-dimetiletan**amid**
N,N-dimetilacet**amid**



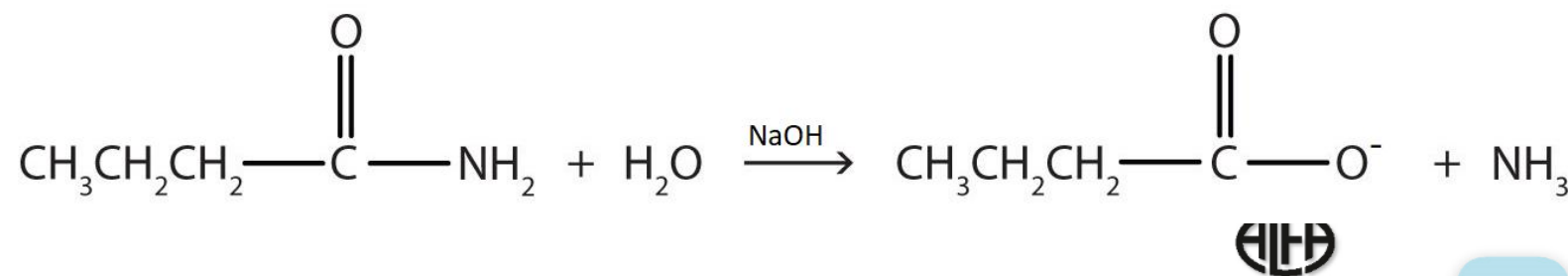


Svojstva amida

- amfoterni spojevi
- hidrolizom u **kiselom mediju** daju **karboksilnu kiselinu** i amonijak

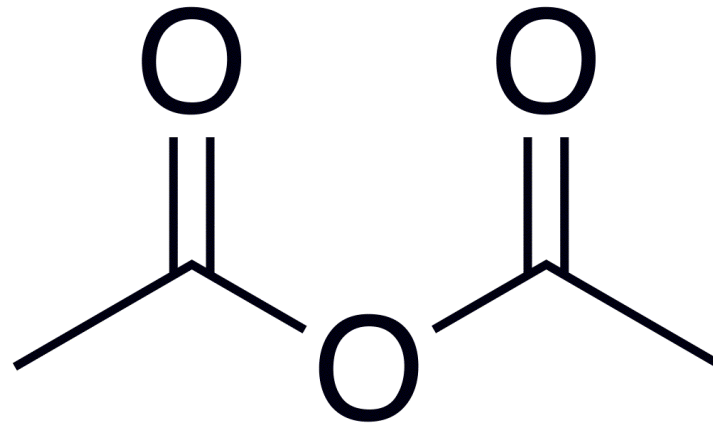


- a hidrolizom u **lužnatom mediju** odgovarajuću **sol** i amonijak

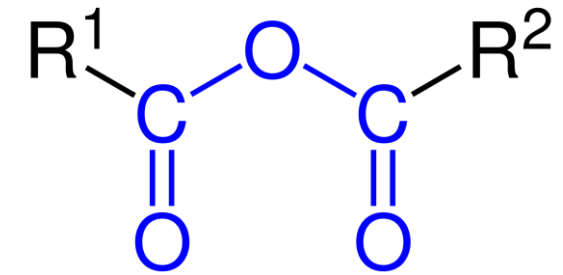




Anhidridi karboksilnih kiselina



anhidrid octene kiseline
acet**anhidrid**





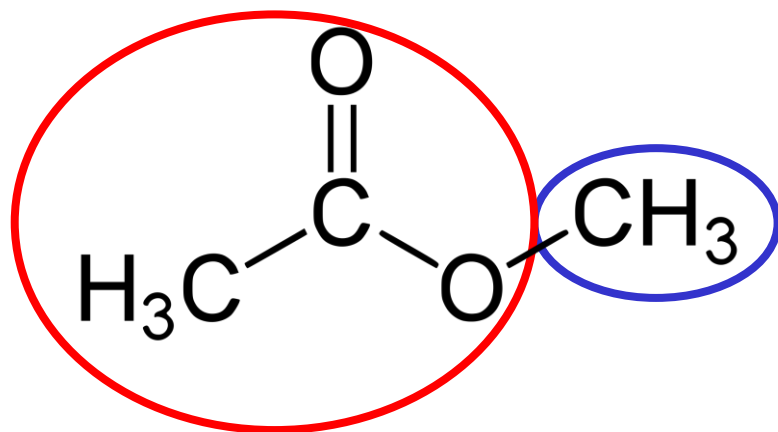
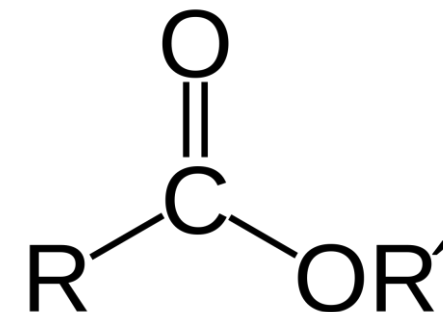
Esteri

- nazivaju se prema kiselini i alkoholu iz kojih su dobiveni

- **IUPAC pravila:**

- 1) prvo se označava ime **alkil grupe** alkohola

- 2) zatim slijedi ime kiseline, s tim što se umjesto nastavka **-ska** za kiselinu, stavlja nastavak **-oat**



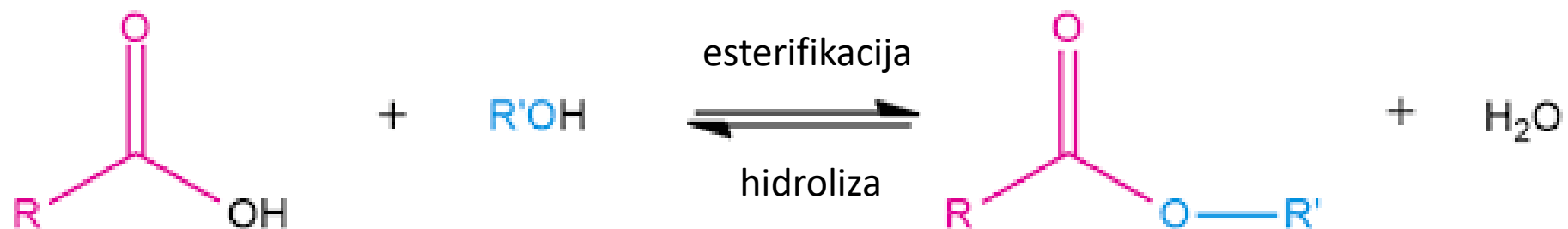
metil-**etanoat**





Esterifikacija

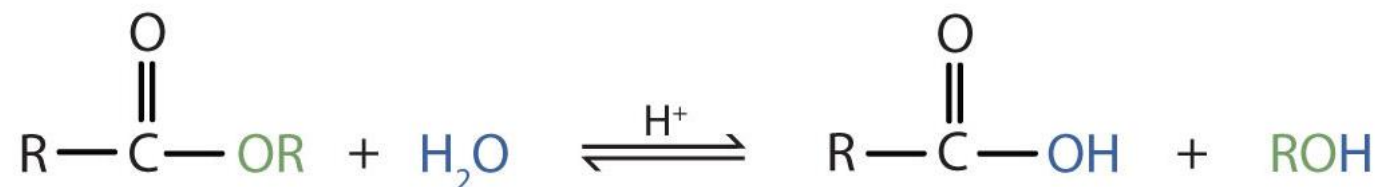
- reakcija karboksilne kiseline i alkohola kojom nastaju ester i voda





Hidroliza

- reakcija estera i vode u kojoj nastaju alkohol i kiselina
- **kisela hidroliza** – nastaju karboksilna kiselina i alkohol



- **bazna hidroliza** – nastaju karboksilatni ion i alkohol (**saponifikacija**)

