

molekula vode. Acil-halogenidi i anhidridi lako reagiraju s vodom (odj. 9.2B) i često se upotrebljavaju kao sredstva za dehidratiranje pri nastajanju drugih anhidrida.

Acetanhidrid je razmjerno jeftin, a produkt njegove hidrolize, octena kiselina, ima vrelište koje je niže od vrelišta većine drugih kiselina. On se često upotrebljava kao sredstvo za dehidratiranje prilikom pripreve anhidrida većih molekulskih masa u reakciji koja se naziva **anhidridna izmjena**.



Iskorištenja produkata u ovoj ravnotežnoj reakciji mogu se poboljšati ako se octena kiselina destilira iz reakcijske smjese.

Zanimljivo je da izravno dehidratiranje zagrijavanjem nije uspješna metoda za priprevu anhidrida iz dviju molekula karboksilne kiseline. Međutim, ovom se metodom često priređuju peteročlani i šesteročlani ciklički anhidridi.



- a) Objasnite zašto peteročlani i šesteročlani ciklički anhidridi nastaju lakše od acikličkih.
- b) Predložite mehanizam termičkog dehidratiranja benzen-1,2-dikarboksilne kiseline (ftalne kiseline) u anhidrid.

Acetanhidrid je ekonomski važan produkt kemijske industrije. Industrijski se pripravlja adicijom octene kiseline na vrlo reaktivnu karbonilnu skupinu spoja poznatog pod imenom keten.



Anhidridi koji se upotrebljavaju u sintetičkoj kemiji većinom su simetrični, tj. sastavljeni su od dijelova dviju identičnih molekula karboksilne kiseline. Nesimetrični (miješani) anhidridi, koji se obično sastoje od dijelova organske i anorganske kiseline, često dolaze kao međuprodukti u preparativnim reakcijama (odj. 9.4A). Miješani anhidridi fosfatne kiseline imaju važnu ulogu u mnogim biološkim procesima (odj. 9.7B).

Pine Organska Kemija

Katrin Zwirglmaier



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