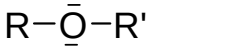
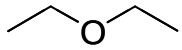
5.GAIA: ETERRAK ETA OXIRANOAK

1. EGITURA ETA EZAUGARRI FISIKOAK

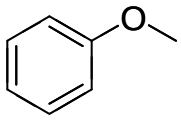
Egitura:



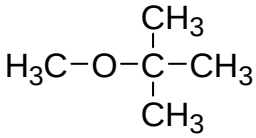
Adib.:



Dietil eterra

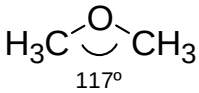


Fenil metil eterra



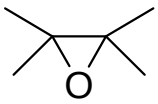
MTBE

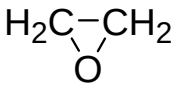
- Egitura angeluarra da.



- Molekula polarrak dira.
- Oxiranoak edo epoxidoak: 3 aldetako eterrak.

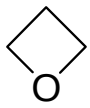
Alkenoen peroxiazidoen bidezko oxidazioaz lortzen dira.



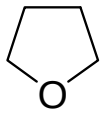
Adib: 

Etileno oxidoa

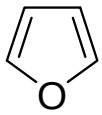
- Beste zenbait eter zikliko:



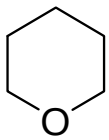
Oxetanoa



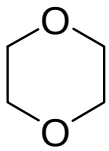
THF (oxolanoa)



Furanoa



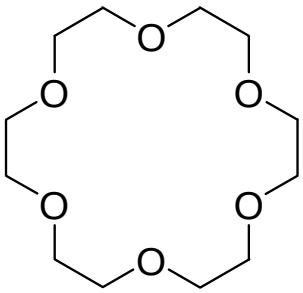
Oxanoa



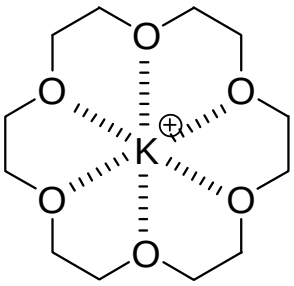
1,4-dioxanoa

- Koro eterrak: polieter ziklikoak

Adib:



18-koroa-6



18-koroa-6

Erabilera: $KMnO_4$ gatza disolbatzeko erabiltzen da.

Koro eter espezifikoak daude katio bakoitza solbatatzeko.

Katio alkalinoak garraiatzeko erabili daitezke, mintz zelularrak zeharkatzeko. Antibiotiko moduan erabiltzen dira.

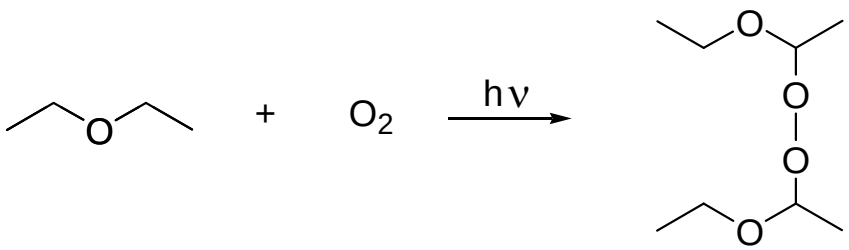
Ezaugarri fisikoak:

- Polartasun txikia dute, beraz i.p. eta u.p.-ak alkoholenak baino baxuagoak dira.

Konposatua	I.P. (ºC)
Me-O-Me	-24
Et-O-Et	35
Pr-O-Pr	91

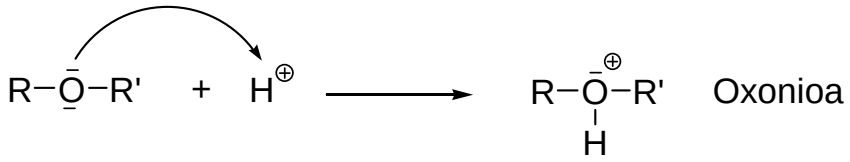
- Disolbatzaile organikoetan disolbatzen dira.
- Disolbatzaile oso erabiliak dira. Arrazoiak:
  - Konposatu organikoak ondo disolbatzen dituzte.
  - Nahiko hegazkorrak dira.
  - Geldoak dira. Erreakzio gutxitan parte hartzen dute, beraz ez da albo-erreakziorik gertatzen.
  - Urarekin nahastezinak dira, beraz erauzketak egiteko erabilgarriak dira.

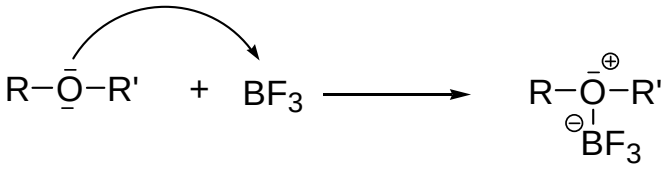
- Eterrak berez oxida daitezke inguruko O_2-arekin erreakzionatuz. Horrela, leherkorrak diren peroxidoak sortzen dira.



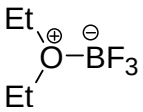
2. ERREAKTIBOTASUNA

- Eterrak base modura jokatzen dute oxonioa eratuz.





Adib:



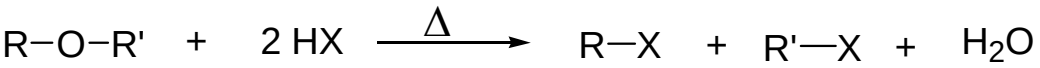
Boro trifluoruroaren dietil eteratoa.

- Eterrak geldoak dira , batez ere baseen aurrean.

Oxidatzaile eta erreduzitzaileen aurrean ere geldoak dira.

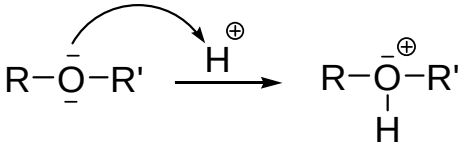
- **Eterren degradazioa** (ingurune azidoan)

Normalean hidrogeno haluroez egiten da, produktuak alkil haluroak dira.



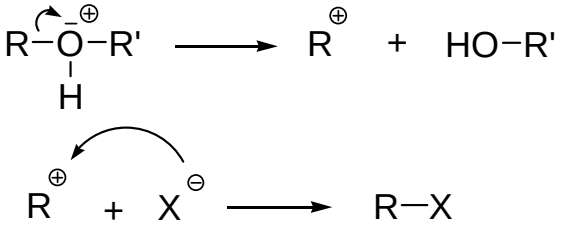
Mekanismoa:

1) Talde ateragarri ona bihurtu:

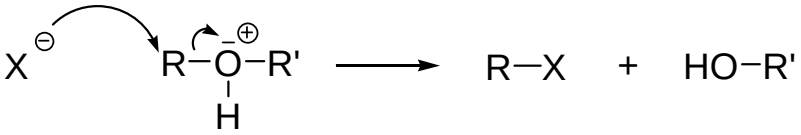


2) Ordezkapena:

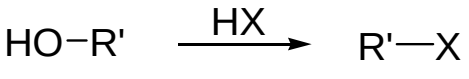
S_N1 (3^{arioak} eta 2^{arioak})



S_N2 (1^{arioak})

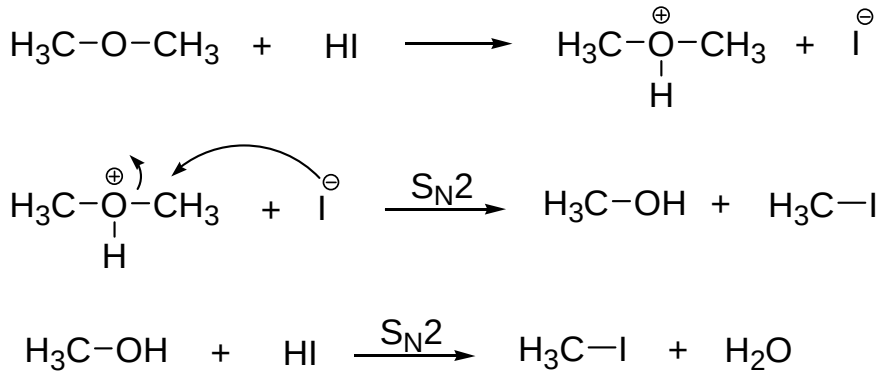


3) Alkoholaren halogenazioa

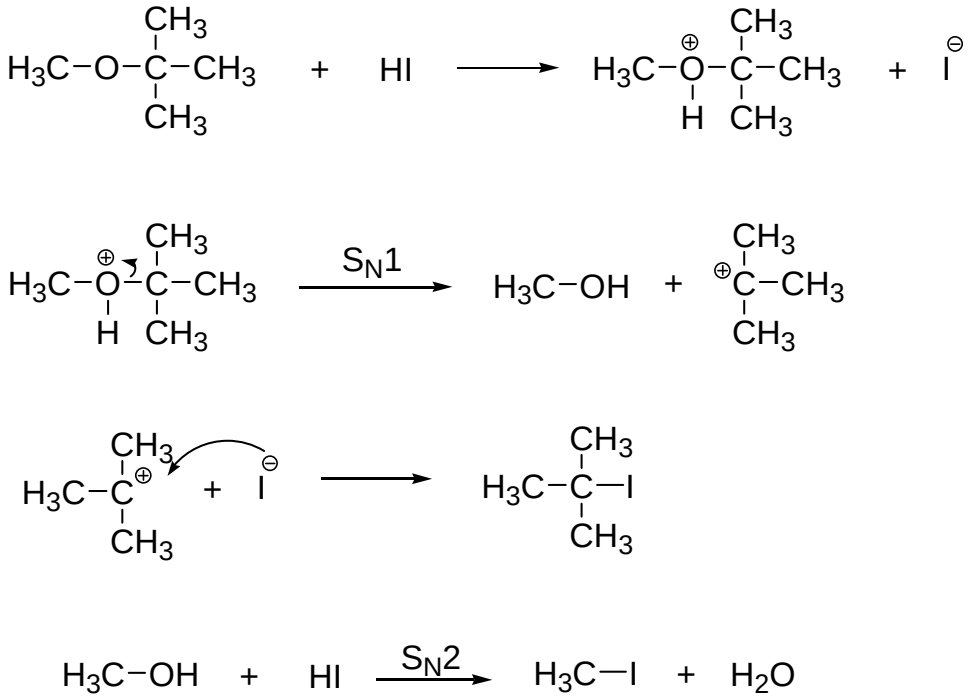


R eta R' ordezkatzaileen arabera S_N1 edo S_N2

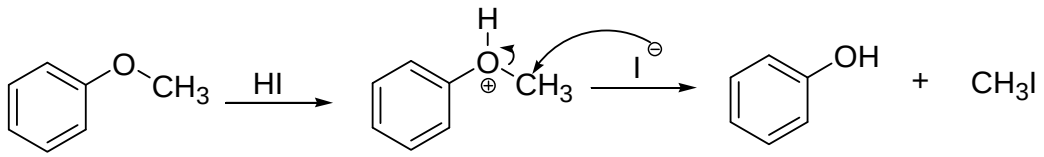
Adib: Dimetil eterraren degradazioa



Adib: metil t-butil eterraren degradazioa



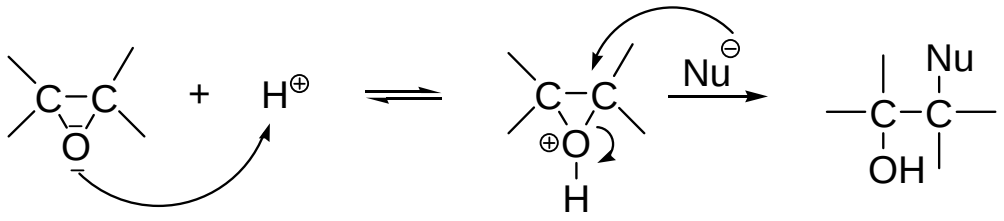
Fenil eterren kasuan fenola eta alkil haluroa eratzen dira.



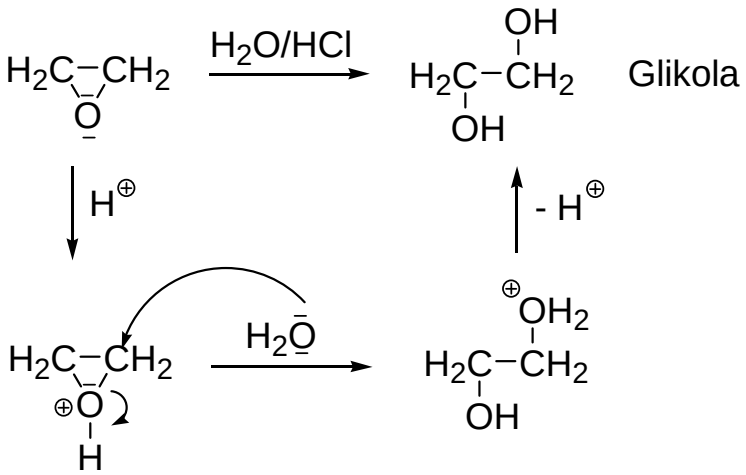
3.- OXIRANOEN ERREAKTIBOTASUNA

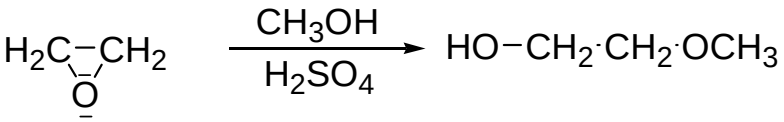
Eter aziklikoak baino erreaktiboagoak dira. Ingurune azidoan edo basikoan eraztunaren irekiera erraz gertatzen da.

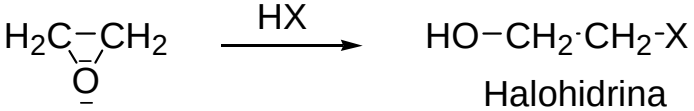
- **Ingurune azidoan:**



Adib:

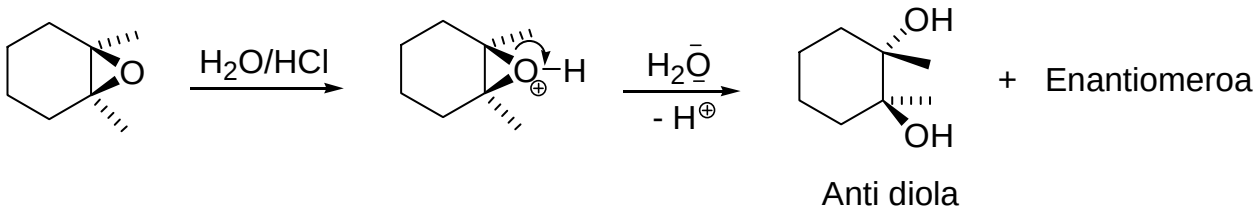
- 

- 

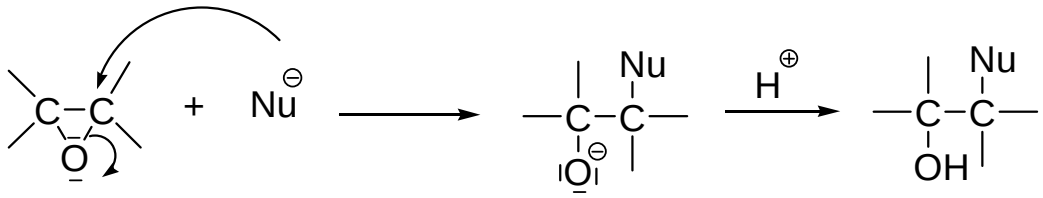
- 

Estereokimika: Anti

Adib:



- **Ingurune basikoan:**



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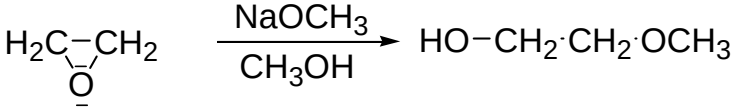
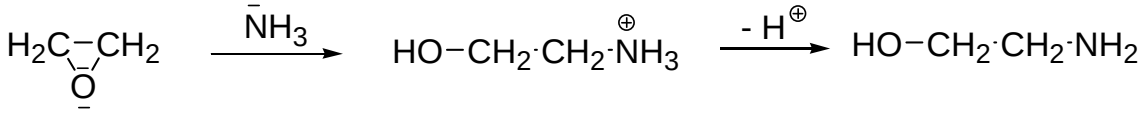
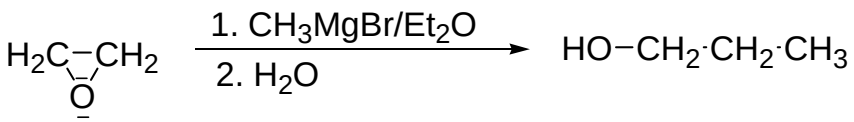
- 

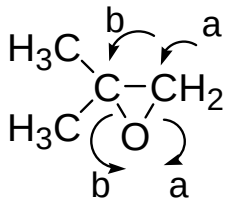
- 

- 

Epoxidoen irekierak balio handikoak dira sintesi organikoan.

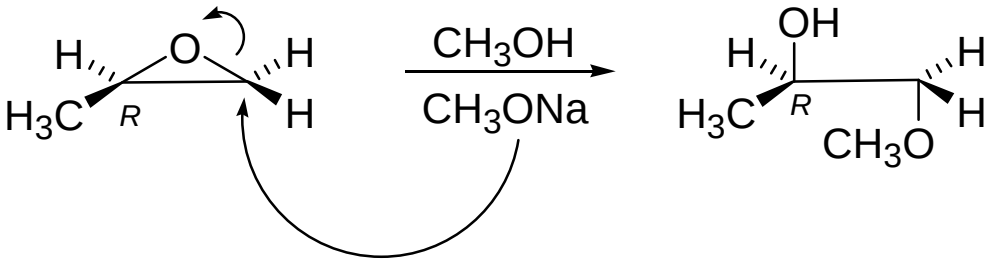
- **Erreakzioaren norantza:**

Epoxidoa asimetrikoa denean bi modutan ireki daiteke:



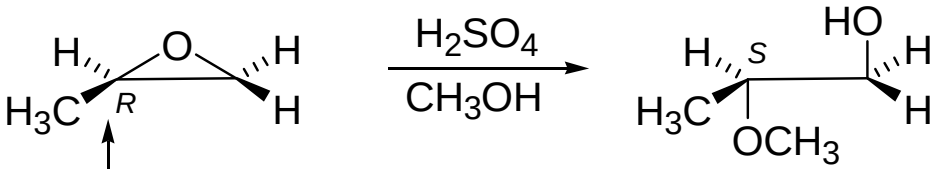
a. Ingurune basikoan "S_N2" erreakzioa gertatzen da. Nukleozaleak ordezkapen gutxieneko karbonoa erasotzen du (efektu esterikoa). Erasoa atzetik gertatzen da.

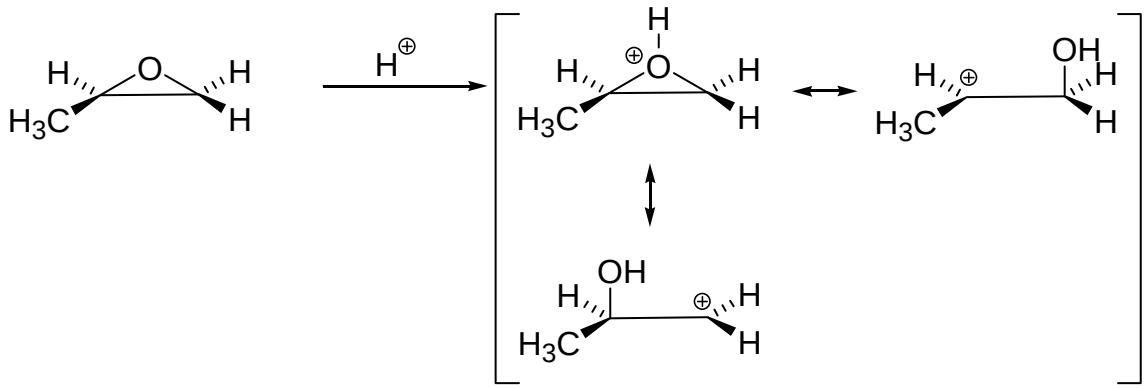
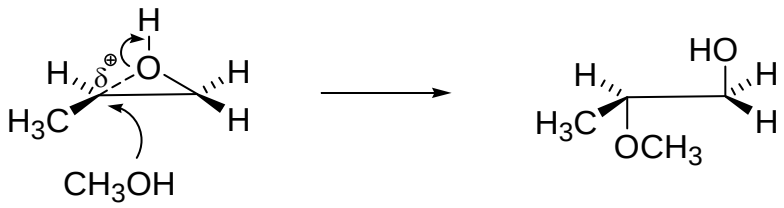
Adib:



Erreakzioa erregioselektiboa da.

b. Ingurune azidoan erregioselektibitatea aldatzen da. Nu-ak karbono ordezkatuena erasotzen du nagusiki. Efektu elektronikoa nagusitzen da.



Aurreko erreakzioaren erregioisomeroa lortzen da.

Ingurune azidoan lehenengo protonazioa gertatzen da eta oxonioa eratzen da. Karga positiboa zikloan parte hartzen duten atomoen artean banatzen da. Karbono ordezkatuenean δ^+ handiagoa da eta beraz nukleozalearen erasoa karbono horretan gertatuko da.