

Why consider conj. base stability, and not HX bond "weakness"?

- For A/B rxns: thermal E \gg ΔG^\ddagger s for fwd & reverse \Rightarrow always reach EQM
- Thus: $K = e^{-\Delta G_{rxn}/RT}$ Dominant product = most thermo. stable product

Example: Ethanol's most acidic H is the hydroxyl hydrogen. WHY?

If base removes the O-H:

- breaks OH bond (BDE \approx 463 kJ/mol)
 \rightarrow but, not homolytic cleavage!
- Base-H bond forms (stronger)
- lone pair left on O (more stable than on Base)

If base removes a C-H:

- breaks CH bond (BDE \approx 346 kJ/mol)
- Base-H bond forms (stronger)
- lone pair left on C (not as stable as O)
- rxn less favourable...

