O Chem 2

- R-OH $\Leftrightarrow$ pKa $\approx 16-19$
- R-H $\Leftrightarrow$ pKa $> 55$

"R:0" only proceed in forward direction since R:0 is very unstable. Reverse reaction does not occur.

- N≡C-H pKa $\approx 10$

\[
\text{R}^+ + \text{NaOH} \rightarrow \text{C≡N}
\]

pKa of conjugate acid of this species $= 16-19$

- \(\text{R}^+ + \text{NaCN} \rightarrow \text{NR}\)
- \(\text{R}^- + \text{HCN} \rightarrow \text{NR}\)
- \(\text{R}^+ + \text{NaCN} + \text{HCN} \rightarrow \text{NR}\)

- \(\text{R}^- + \text{HCN} \rightarrow \text{NR}\)

\(\text{Br}^-\) Bromohydrin

(HCN is not a Nu:)

Cyano hydrin

- \(\text{H}-\text{C≡N}\) or Stronger acid. H-C≡N too weak

\(\text{H}=\text{C≡N}\) Not a carbon Nu
This step drives reactants to products.

\[
\text{Na}^+ \text{O} : \text{C} \equiv \text{N} \rightarrow \text{O} : \text{C} \equiv \text{N} + \text{H}^+ \text{C} \equiv \text{N} + \text{H}^+ \text{C} \equiv \text{N}
\]

This is a good enough leaving group to leave.

\[\text{NO mechanism to act here}\]

\[\text{spryroid orbital - not so basic}\]

\[\text{END OF CHAPTER 19}\]

**CHAPTER 10** Carboxylic Acids: \[\text{H}_2\text{C} \equiv \text{O} - \text{H}\text{ pK}_a \approx 5 \text{ important}\]

- B.P. = 100°C
- B.P. ~ -30°C
- B.P. ~ 118°C
- B.P. ~ 57°C

\[\text{same mol. wt.}\]

\[\text{know trends}\]

\[\text{not as acidic = weaker}\]

\[\text{indicate H bond}\]
*Reason for higher B.P. of CCHO compared to ketones even though they have similar molecular weights.

*Resonance stabilized anion

*Mechanism:

*Fisher esterification