CHEM 8B, Lecture 10
Alpha(α)-Halogenation Reactions – Ch 22

1. Mono-bromination of ald/ket

2. HVZ: Mono-bromination of carb. acids

3. Poly-bromination of ald/ket

4. Haloform Reaction of Methyl Ketones

Recall Keto-Enol Tautomerization

1. α-Halogenation of Carbonyls (not carb. Acids)
2. HVZ Reaction: \( \alpha \)-Halogenation of Carboxylic Acids

Acidic, Mono-bromination examples...
**Enolate Ion**: Conjugate Base of Carbonyl Compounds

\[ \text{H}_2\text{C} = \text{Z} \xrightarrow{\text{Base}} \text{pKa 10} \]

- \(\text{pKa 10}\)
  - Acetone
  - Acetophenone
  - Acetyl chloride
  - Acetone (pKa 19)
  - Acetate

3. Polybromination

\[
\text{excess Br}_2 \quad \text{NaOH} \quad \text{can't stop, won't stop!}
\]

4. Haloform Reaction – Methyl Ketones only

\[
\text{excess Br}_2 \quad \text{NaOH} \quad \text{NaOH, HBr}_3 \quad \text{can't stop, won't stop!}
\]
Basic, polybromination examples...

Reaction Puzzle