CHEM 261 Nov 20, 2018

Addition reactions of Alkynes

Oxidation of Alkynes

$$-C \equiv C - \underbrace{\begin{array}{c} [O] \\ O_3, \text{ then Zn} \\ \text{ or} \\ \text{KMnO}_4 \text{ (cold or hot)} \\ \text{ or} \\ \text{OsO}_4 \end{array}}^{O} OH \qquad HO$$

Any of the reagents shown can be used on an alkyne to produce the acids shown on the right.

Examples: 1-propyne

 $H_3C-C\equiv C-H$ $1. KMnO_4$ H_2O

$$H_3C-C\equiv C-H$$
 $1. O_3$
 $2. Zn$
 OH
 OH
 HOH
 HOH
 $Acetic acid$
 OH
 HOH
 HOH