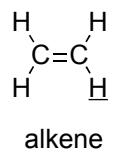


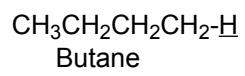
## pKa Table: Effect of electronegativity and resonance

Acid	pKa	Conjugate Base	
$\text{HCl}$	-7	$\text{Cl}^-$	
$\text{H}_2\text{SO}_4$	-4	$\text{HSO}_4^-$	
$\text{HNO}_3$	-2	$\text{NO}_3^-$	
$\text{CH}_3\text{CH}_2\overset{\text{H}}{\underset{\text{H}}{\text{O}}}^+-\text{H}$	-2	$\text{CH}_3\text{CH}_2\text{OH}$	
$\text{H}-\overset{\text{H}}{\underset{\text{H}}{\text{O}}}^+$	-2	$\text{H}_2\text{O}$	
$\text{O}\text{---OH}$	5	$\text{O}\text{---}\bar{\text{O}}$	
$\text{H}-\overset{\text{H}}{\underset{\text{H}}{\text{N}}}^+\text{---H}$	9 (10)	$\text{H}_3\text{N}$	
$\text{C}_6\text{H}_5\text{OH}$ phenol	10	$\text{C}_6\text{H}_5\text{O}^-$ phenoxide	$\text{C}_6\text{H}_5\text{O}^- \text{Na}^+$ e.g., sodium phenoxide
$\text{O}\text{---C(=O)CH}_2\text{CO}_2\text{Et}$ acetoacetic ester	11	$\text{O}^-\text{---C(=O)CH}_2\text{CO}_2\text{Et}$	e.g. $\text{O}^-\text{---C(=O)CH}_2\text{CO}_2\text{Et Na}^+$ [only most stable resonance shown here]
$\text{HO-H}$ water	15.7 (15)	$\text{HO}^-$ hydroxide	$\text{HO}^- \text{Na}^+$ e.g., sodium hydroxide
$\text{CH}_3\text{CH}_2\text{OH}$ ethanol	16 (15)	$\text{CH}_3\text{CH}_2\text{O}^-$ ethanoxide	$\text{CH}_3\text{CH}_2\text{O}^- \text{Na}^+$ e.g., sodium ethoxide
$\text{H}-\overset{\text{H}}{\underset{\text{H}}{\text{C}}}(\text{O})-\text{H}$ acetone	20	$\text{O}^-$ enolate	$\text{O}^- \text{Li}^+$ e.g., lithium enolate [only most stable resonance shown here]
$\text{H}-\text{C}\equiv\text{C}-\text{H}$ alkyne	25	$\text{H}-\text{C}\equiv\text{C}^{\ominus}$ acetylide	$\text{H}-\text{C}\equiv\text{C} \text{Na}^+$ e.g., sodium acetylide
$\text{H}_2\text{N}-\text{H}$ ammonia	35	$\text{H}_2\text{N}^-$ amide	$\text{H}_2\text{N}^- \text{Na}^+$ e.g., sodium amide
$\text{H}-\text{H}$ Hydrogen	35	$\text{H}^-$ Hydride	$\text{H}^- \text{Na}^+$ e.g., sodium hydride

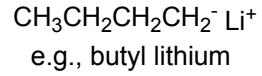
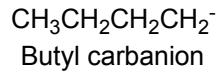


**44**

alkene



**60**



↓  
Basicity