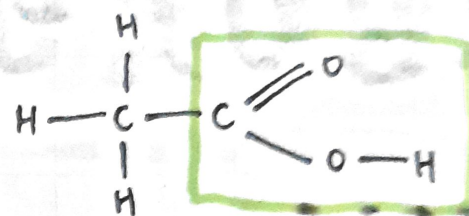


CARBOXYLIC ACIDS

- contain carboxyl ($-\text{COOH}$)
- $\text{C}_n\text{H}_{2n+1}\text{COOH}$, $n \geq 0$



name	molecular formula	structural formula
methanoic acid	HCOOH	$\text{H}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{O}-\text{H} \end{array}$
ethanoic acid	CH_3COOH	$\begin{array}{c} \text{H} \\ \\ \text{H}-\text{C}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{O}-\text{H} \end{array} \\ \\ \text{H} \end{array}$
propanoic acid	$\text{C}_2\text{H}_5\text{COOH}$	$\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{H}-\text{C}-\text{C}-\text{C} \begin{array}{l} \nearrow \text{O} \\ \searrow \text{O}-\text{H} \end{array} \\ \quad \\ \text{H} \quad \text{H} \end{array}$

properties

- react with metals to form a salt and hydrogen gas
- react with carbonates to give a salt, carbon dioxide and water
- react with bases to give a salt and water

production

- oxidation of alcohol
 - potassium manganate (VII) oxidising agent
 - atmospheric oxygen in the presence of bacteria