

Functional Groups Worksheet

Use p.731 for help		(Use a four carbon compound as the example for each category below.)			
Organic Group Class	General Formula with group name	Nomenclature	Molecular Formula	Structural Formula	Condensed Structural Formula
	R hydrocarbon				
	R=R hydrocarbon				
	R≡R hydrocarbon				
cycloalkanes	not applicable hydrocarbon				
	R-OH hydroxyl				
	R-X halogen				
	R-O-R' ether				
	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{H} \end{array}$ aldehyde				
	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{R}' \end{array}$ carbonyl				
	$\begin{array}{c} \text{R}-\text{N}-\text{H} \\ \\ \text{H} \end{array}$ amine				
	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{O}-\text{H} \end{array}$ carboxyl				
	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{O}-\text{R}' \end{array}$ ester	methyl propanoate			
thiol	R-S-H sulfhydryl	1-butanthiol	C ₄ H ₉ SH		CH ₃ -CH ₂ -CH ₂ -CH ₂ -SH
phosphate	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{O}-\text{P}-\text{O}^- \\ \\ \text{O}^- \end{array}$ phosphate	butane-1-phosphate	C ₄ H ₉ PO ₄ ²⁻		CH ₃ -CH ₂ -CH ₂ -CH ₂ -PO ₄ ²⁻