

TABLE 19.2 Classes of Organic Compounds

Ch	Class of compound	General formula*	IUPAC name** ***	Molecular formula	Condensed structural formula	Structural formula	
	* functional group name						
19	Alkane	RH	Ethane (Ethane)	C ₂ H ₆	CH ₃ CH ₃		
	* single bond						
20	Alkene	R-CH=CH ₂	Ethene (Ethylene)	C ₂ H ₄	H ₂ C=CH ₂		
	* double bond						
20	Alkyne	R-C≡C-H	Ethyne (Acetylene)	C ₂ H ₂	HC≡CH		
	* triple bond						
19/20	Alkyl halide	RX	Chloroethane (Ethyl chloride)	C ₂ H ₅ Cl	CH ₃ CH ₂ Cl		
	x halo						
22	Alcohol	ROH	Ethanol (Ethyl alcohol)	C ₂ H ₆ O	CH ₃ CH ₂ OH		
	* hydroxyl						
22	Ether	R-O-R	Methoxymethane (Dimethyl ether)	C ₂ H ₆ O	CH ₃ OCH ₃		
	* ether						
23	Aldehyde	$\begin{matrix} R-C=O \\ \\ H \end{matrix}$	Ethanal (Acetaldehyde)	C ₂ H ₄ O	CH ₃ CHO		
	* carbonyl						
23	Ketone	$\begin{matrix} R-C-R \\ \\ O \end{matrix}$	Propanone (Dimethyl ketone)	C ₃ H ₆ O	CH ₃ COCH ₃		
	* carbonyl						
24	Carboxylic acid	$\begin{matrix} R-C-OH \\ \\ O \end{matrix}$	Ethanoic acid (Acetic acid)	C ₂ H ₄ O ₂	CH ₃ COOH		
	* carboxyl						
24	Ester	$\begin{matrix} R-C-OR \\ \\ O \end{matrix}$	Methyl ethanoate (Methyl acetate)	C ₃ H ₆ O ₂	CH ₃ COOCH ₃		
	* ester						
25	Amide	$\begin{matrix} R-C-NH_2 \\ \\ O \end{matrix}$	Ethanamide (Acetamide)	C ₂ H ₅ ON	CH ₃ CONH ₂		
	* carboxamide						
25	Amine	R-CH ₂ -NH ₂	Aminoethane (Ethylamine)	C ₂ H ₇ N	CH ₃ CH ₂ NH ₂		
	* amino						
22	Thiol	R-SH	Ethanethiol	C ₂ H ₆ S	CH ₃ CH ₂ SH		
	* sulfhydryl						
22	Phenol		 ortho				
	* hydroxyl on benzene						
	 meta						
	 para						
	Nitro R-NO ₂						