

### Building Molecular Molecules

Formula	Lewis Structure	Shape (angles included, and name of shape) and Polar Bonds	Shape and Molecular Polarity	Intermolecular Forces Present
CH <sub>3</sub> CCCH <sub>3</sub> 2-butyne		<p>tetrahedral, linear no polar bonds</p>	non polar	LF
HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>		<p>tetrahedral, trigonal planar, angular</p>	<p>LF, DD, HB</p>	LF, DD, HB
H <sub>2</sub> O		<p>angular</p>	<p>non polar</p>	LF, DD, HB
BrF <sub>3</sub>		<p>trigonal planar, no polar bonds</p>	non polar	LF
H <sub>2</sub> S		<p>angular, no polar bonds</p>	non polar	LF

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$N_2H_4$				LF, DD, HB
$AsCl_3$				LF, DD
$PCl_5$				LF
$NOCl$				LF, DD
$HCN$	$H-C \equiv N$			LF, DD

Formula	Lewis Structure	Shape (angles included, and name of shape) and Polar Bonds	Shape and Molecular Polarity	Intermolecular Forces Present
$\text{CCl}_2\text{H}_2$	$  \begin{array}{c}  \text{H} \\    \\  \text{H}-\text{C}-\text{Cl} \\    \\  \text{Cl}  \end{array}  $	<p>tetrahedral H 109°</p>	<p>nonpolar</p>	LF, DD
$\text{C}_2\text{H}_4$	$  \begin{array}{c}  \text{H} \quad \text{H} \\    \quad   \\  \text{C}=\text{C} \\    \quad   \\  \text{H} \quad \text{H}  \end{array}  $	<p>trigonal planar H 120°</p>	<p>nonpolar bonds</p> <p>nonpolar</p>	LF
$\text{SF}_4\text{Cl}_2$	$  \begin{array}{c}  \text{Cl} \\    \\  \text{F}-\text{S}-\text{F} \\  / \quad \backslash \\  \text{F} \quad \text{Cl}  \end{array}  $	<p>nonpolar Cl 90°</p> <p>octahedral</p>	<p>nonpolar</p>	LF

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$\text{BCl}_3$		<p>trigonal planar</p>	<p>non polar</p>	LF
$\text{CH}_2\text{O}$		<p>trigonal planar</p>	<p>polar</p>	LF, DD
$\text{CH}_3\text{F}$		<p>tetrahedral</p>	<p>polar</p>	LF, DD
$\text{CH}_4$		<p>tetrahedral</p>	<p>no polar bonds</p>	LF
$\text{CS}_2$		<p>linear</p>	<p>no polar bonds</p>	LF