

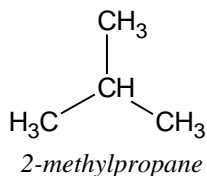
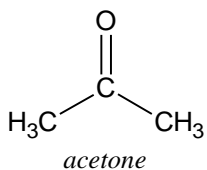
**Intermolecular Forces Worksheet #1**  
(2011 Version)

1. List all of the intermolecular forces that are present for each of the following:

$\text{Br}_2$	$\text{H}_2\text{S}$	$\begin{array}{c} \text{H} \\ \text{H} - \text{C} - \text{O} - \text{H} \\ \text{H} \end{array}$

2. Which gas would be expected to have a greater boiling point: Xe or Ar ? Explain your reasoning.

3. Acetone boils at  $56^\circ\text{C}$ . Would you expect 2-methylpropane to boil at a higher or lower temperature than acetone? Explain your reasoning.



4. Which compound would be expected to have the higher boiling point? Explain your reasoning.

(a) HF or HCl

(b)  $\text{CHCl}_3$  or  $\text{CHBr}_3$

(c)  $\text{Br}_2$  or ICl

5. Which of the following atoms would you expect to be most polarizable: O, S, Se, or Te? Explain.

6. Predict the order of boiling points for the following compounds:  $\text{GeCl}_4$ ,  $\text{CH}_4$ ,  $\text{SiCl}_4$ ,  $\text{SiH}_4$ , and  $\text{GeBr}_4$

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lowest BP highest BP

7. Which member of the following pairs has the stronger London dispersion forces?

(a)  $\text{H}_2\text{O}$  or  $\text{H}_2\text{S}$

(b)  $\text{CO}_2$  or  $\text{CO}$

(c)  $\text{CH}_4$  or  $\text{CCl}_4$

8. Which of the following molecules is capable of showing hydrogen bonding? Explain your reasoning.

$\text{CH}_3\text{F}$

$\text{CH}_3\text{NH}_2$

$\text{CH}_3\text{OH}$

$\text{CH}_3\text{Br}$