

Name

Key

Intermolecular Forces and Boiling Point

Order each set from highest boiling point to lowest boiling point.

Example: 3 HCl 1 KCl 2 H<sub>2</sub>O

a. 1 Fe 2 HF 3 N<sub>2</sub>  
 metallic H-bond London

b. 2 O<sub>2</sub> 3 N<sub>2</sub> 1 NH<sub>3</sub>  
 32 g/mol 28 g/mol H-bond

c. 1 CO<sub>2</sub> 2 O<sub>2</sub>  
 44 g/mol 32 g/mol

d. 1 Kr 3 He 2 Ar  
 84 g/mol 4 g/mol 40 g/mol

e. 2 NO<sub>2</sub> 1 H<sub>2</sub>O 3 O<sub>2</sub>  
 d-d H-bond London

f. 1 H<sub>2</sub>O 2 H<sub>2</sub>S 3 CH<sub>4</sub>  
 H-bond d-d London

g. 2 Br<sub>2</sub> 3 Cl<sub>2</sub> 5 H<sub>2</sub> 1 I<sub>2</sub> 4 F<sub>2</sub>  
 160 71 2 254 38

h. 3 ICl 1 MgF<sub>2</sub> 2 H<sub>2</sub>O 4 CCl<sub>4</sub>  
 d-d Ionic H-bond London

i. 3 PH<sub>3</sub> 2 HF 1 W 4 CH<sub>4</sub>  
 d-d H metal London

j. 1 NaCl 4 H<sub>2</sub> 3 PH<sub>3</sub> 2 NH<sub>3</sub>  
 ionic London d-d H

k. 4 He 3 Ne 2 Ar 1 Kr  
 4 20 40 84

l. 3 CH<sub>4</sub> 2 C<sub>2</sub>H<sub>6</sub> 1 C<sub>3</sub>H<sub>8</sub>

m. 2 CH<sub>4</sub> 1 CCl<sub>4</sub>  
 16 g/mol 152 g/mol

n. 2 N<sub>2</sub> 1 CO  
 28 London 28 d-d

o. 2 Br<sub>2</sub> 1 ICl  
 London d-d

p. 1 HF 2 HCl  
 H-bond d-d