

Intermolecular Forces

For questions 1-5, identify the main type of intermolecular force in each compound:

- 1) carbon disulfide
- 2) ammonia
- 3) oxygen
- 4) CH_2F_2
- 5) C_2H_6

Rank the following compounds by increasing melting point:

- 6) C_2H_6 , $\text{C}_2\text{H}_5\text{OH}$, $\text{C}_2\text{H}_5\text{F}$
- 7) H_2S , H_2O , H_2
- 8) BBr_3 , BI_3 , BCl_3

Intermolecular Forces - Key

For questions 1-5, identify the main type of intermolecular force in each compound:

- 1) carbon disulfide
Van der Waal forces
- 2) ammonia
Hydrogen bonding
- 3) oxygen
Van der Waal forces
- 4) CH_2F_2
Dipole-dipole forces
- 5) C_2H_6
Van der Waal forces

Rank the following compounds by increasing melting point:

- 6) C_2H_6 , $\text{C}_2\text{H}_5\text{OH}$, $\text{C}_2\text{H}_5\text{F}$
 C_2H_6 (-183.3⁰ C), $\text{C}_2\text{H}_5\text{F}$ (-143.2⁰ C), $\text{C}_2\text{H}_5\text{OH}$ (-117.3⁰ C)
- 7) H_2S , H_2O , H_2
 H_2 (-259.3⁰ C), H_2S (-85.5⁰ C), H_2O (0⁰ C)
- 8) BBr_3 , BI_3 , BCl_3
 BCl_3 (-107.3⁰ C), BBr_3 (-46⁰ C), BI_3 (49.9⁰ C)

All melting points were taken from The Handbook of Chemistry and Physics, 72nd Edition, by the Chemical Rubber Company. If you don't have a CRC, you need one because it contains all the reference material you'll ever need!