#### N29 – Going in Depth

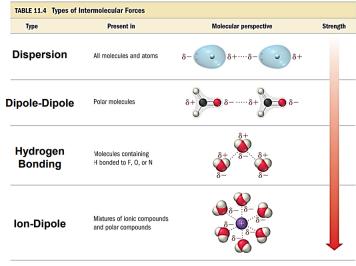
| TABLE 11.4 Types of Intermolecular Forces |  |   |          |  |
|---|--|---|----------|--|
| Туре                                      | Present in   | Molecular perspective   | Strength |  |
| Dispersion                                | All molecules and atoms                            | $\delta - \bigcirc \delta + \cdots \delta - \bigcirc \delta +$  |          |  |
| Dipole-Dipole                             | Polar molecules                                    | $\delta + \bullet \bullet \delta - \dots \delta + \bullet \bullet \delta -$   |          |  |
| Hydrogen<br>Bonding                       | Molecules containing<br>H bonded to F, O, or N     | $\overset{\delta +}{\underset{\delta -}{\overset{\delta -}}},\overset{\delta +}{\underset{\delta -}{\overset{\delta +}}}$ |          |  |
| lon-Dipole                                | Mixtures of ionic compounds<br>and polar compounds |   |          |  |

## TABLE 11.4 Types of Intermolecular F

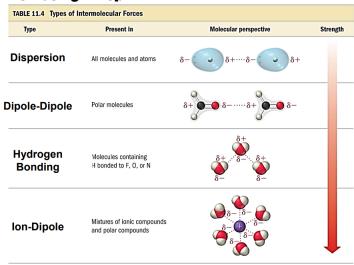
N29 – Going in Depth

| Туре                | Present in   | Molecular perspective   | Strength |
|---------------------|--|---|----------|
| Dispersion          | All molecules and atoms                            | δ- :  |          |
| Dipole-Dipole       | Polar molecules                                    | $\delta + \bullet \bullet \delta - \cdots \delta + \bullet \bullet \delta -$  |          |
| Hydrogen<br>Bonding | Molecules containing<br>H bonded to F, O, or N     | $\overset{\delta +}{\underset{\delta -}{\overset{\delta -}}},\overset{\delta +}{\underset{\delta -}{\overset{\delta +}}},\overset{\delta +}{\underset{\delta -}{\overset{\delta +}}}$ |          |
| lon-Dipole          | Mixtures of ionic compounds<br>and polar compounds |   |          |

#### N29 – Going in Depth



# N29 – Going in Depth



# N29 – Going in Depth

| -                   |  |   |          |
|---------------------|--|---|----------|
| Туре                | Present in   | Molecular perspective   | Strength |
| Dispersion          | All molecules and atoms                            | δ- Οδ+…δ- Οδ  | +        |
| Dipole-Dipole       | Polar molecules                                    | δ+ • • δ- ···· δ+ • • δ-  | -        |
| Hydrogen<br>Bonding | Molecules containing<br>H bonded to F, O, or N     | $\overset{\delta^+}{\underset{\delta^-}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^-}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}{\overset{\delta^+}}{\overset{\delta^+}}{\overset{\delta^+}}{\overset{\delta^+}}{\overset{\delta^+}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}$ |          |
| lon-Dipole          | Mixtures of ionic compounds<br>and polar compounds |   |          |

### N29 – Going in Depth

| TABLE 11.4 Types of Intermolecular Forces |  |   |          |  |  |
|---|--|---|----------|--|--|
| Туре                                      | Present in   | Molecular perspective   | Strength |  |  |
| Dispersion                                | <b>n</b> All molecules and atoms                   | $\delta - \bigcirc \delta + \cdots \delta - \bigcirc \delta +$  |          |  |  |
| Dipole-Dipo                               | Polar molecules                                    | δ+  |          |  |  |
| Hydroger<br>Bonding                       | Molecules containing<br>H bonded to F, O, or N     | $\overset{\delta^+}{\underset{\delta^-}{\overset{\circ}{\longrightarrow}}}\overset{\delta^+}{\underset{\delta^-}{\overset{\circ}{\longrightarrow}}}\overset{\delta^+}{\underset{\delta^-}{\overset{\circ}{\longrightarrow}}}$ |          |  |  |
| lon-Dipole                                | Mixtures of ionic compounds<br>and polar compounds |   |          |  |  |