1. Complete the table below for the three types of intermolecular forces.

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of force** | **Description** | **Between what types of molecules** | **Relative strength** |
| Dipole-Dipole |  |  |  |
|  | One molecule makes electrons on another molecule move and induces a charge |  |  |
|  |  | Hydrogen atoms bonded to F, N, or O |  |

1. Explain what effect molecular polarity and intermolecular forces have on the following properties:
	1. Boiling point
	2. Solubility

1. Acetone boils at about 56°C, water boils at 100 **°**C, and CO2 boils at -57 **°**C.
	1. Would you expect acetone to be polar or nonpolar? Explain why.
	2. What intermolecular forces would you predict are in acetone? Explain why.
	3. Rank the three molecules from greatest to weakest polarity. Explain your ranking.
	4. Would you expect acetone to be soluble in water? Explain why.
2. Complete the chart below

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Molecule | Lewis Structure with bond polarity | Geometry type | Molecule polarity | Type of intermolecular forces |
| SeH2 |  |  |  |  |
| AsH3 |  |  |  |  |
| SiBr4 |  |  |  |  |
| CHCl3 |  |  |  |  |
| HF |  |  |  |  |

1. Which of the chemicals in the chart above would mix with oil? Which would mix with water?
2. Answer the following questions using the chart below
	1. Rank the compounds from weakest to greatest force.
	2. Which compound(s) would you except to be polar and why?