

Unit 9: Ch 15 – What are Solutions?

CHARACTERISTICS OF SOLUTIONS:

➤ SOLUTION –

- **Solution** = _____

➤ SOLUTE –

- Can have _____ than one *solute* in a _____.

➤ SOLVENT –

- **Water** = Universal _____ - (_____ and _____)

➤ Sometimes difficult to identify _____ from _____ within _____.

- Dependent on the *state* of _____.

- Ex: Air = _____ solution → Solvent = _____

- WHY? Atmosphere = _____ and _____

➤ Solutions between any _____ states of _____.

| <i>Solute</i> | <i>Solvent</i> | <i>Example</i> |
|---------------|----------------|---|
| solid | liquid | <i>Ocean Water</i> – NaCl + Water |
| solid | solid | <i>Steel</i> – Carbon _(s) + Iron |
| liquid | solid | <i>Dental Amalgam</i> – Mercury _(l) + Silver |
| liquid | liquid | <i>Antifreeze</i> – Ethylene Glycol + Water |
| gas | gas | <i>Air</i> – Oxygen + Nitrogen |
| gas | liquid | <i>Carbonated Water</i> – CO ₂ + Water |

SOLUBILITY:

➤ DEFINITION –

○ SOLUBLE –

▪ Ex: _____

○ INSOLUBLE –

▪ Ex: _____

MISCIBILITY:

➤ MISCIBLE –

○ Ex: _____

➤ IMMISCIBLE –

○ Ex: _____

SOLVATION IN AQUEOUS (AQ) SOLUTIONS:

➤ **Solubility Model:** _____ due to _____ forces _____ particles.

○ To form solutions, _____ particles *MUST* _____ from one another and _____ in _____ particles.

➤ _____ *between* solid _____ must be _____ than IMF holding _____ particles together.

○ 1. _____ particles _____ solute particles and _____ to corresponding ions.

○ 2. *Surrounded* _____ particles then *separate* out (_____) from solid _____, and out _____.

▪ HYDRATION -