[TP] Identify the compound with the largest energy of vaporization (kJ/mol).

33% 1. Ethane, CH_3CH_3
33% 2. Propane, $CH_3CH_2CH_3$
33% 3. Dimethyl ether, CH_3OCH_3

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Lecture 17 CH101 A1 (MWF 9 am)

Monday, October 17, 2016

- Practice: Intermolecular forces
- Dissolving ionic solids

Next lecture: Solubility rules (memorize solubility guidelines fig 6.28 p 181); precipitation reactions; concentrations after precipitation; ionization of molecular solutes; self-ionization of water

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[TP] The correct order of boiling point of CH_3OH, CH_4, S=C=O, and Xe is (lowest to highest) ...

17% 1. $CH_3OH < CH_4 < S=C=O < Xe$
17% 2. $Xe < S=C=O < CH_4 < CH_3OH$
17% 3. $Xe < CH_4 < S=C=O < CH_3OH$
17% 4. $CH_4 < Xe < CH_3OH < S=C=O$
17% 5. $CH_4 < Xe < S=C=O < CH_3OH$
17% 6. some other order

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[Quiz] The correct order of boiling point of CH_3Br, CH_2Br_2, CH_3Cl and CH_2Cl_2 is (lowest to highest) ...

17% 1. $CH_2Br_2 < CH_2Cl_2 < CH_3Br < CH_3Cl$
17% 2. $CH_2Cl_2 < CH_2Br_2 < CH_3Cl < CH_3Br$
17% 3. $CH_3Br < CH_3Cl < CH_2Br_2 < CH_2Cl_2$
17% 4. $CH_3Cl < CH_3Br < CH_2Br_2 < CH_2Cl_2$
17% 5. $CH_3Cl < CH_3Br < CH_2Cl_2 < CH_2Br_2$
17% 6. some other order

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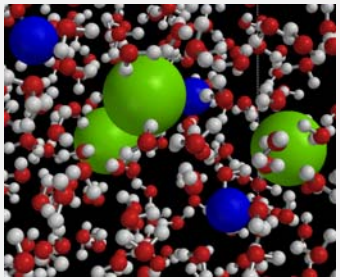
Dissolving ionic solids

Dissolving ionic salts

$Na^+(aq)$ and $Cl^-(aq)$ disperse throughout water



About "NaCl(*aq*)", etc.

Ionic solids dissolve by their ions being surrounded by water.

For example, $NaCl(s) \rightarrow Na^+(aq) + Cl^-(aq)$

The collection of hydrated ions is sometimes represented as "salt(*aq*)".

For example, $Na^+(aq) + Cl^-(aq)$ is abbreviated as $NaCl(aq)$

However, chemically, salt(*aq*) does not exist.

It is only an abbreviation for the hydrated ions, e.g., $Na^+(aq) + Cl^-(aq)$

Since salt(aq) does not exist, in this course please do not use it!

Representing 5 M NaCl solution

Make a sketch of a 5 M NaCl aqueous solution, representing
- waters as chevrons (>)
- Na^+ ions as +
- Cl^- ions as –

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[TP] From your sketch, in a 5 M aqueous solution of NaCl, for every Na^+ ion, there will be about ...

14% 1. 5 waters
14% 2. 10 waters
14% 3. 50 waters
14% 4. 100 waters
14% 5. 500 waters
14% 6. 1000 waters
14% 7. More than 1000 waters

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