

Lecture 17 CH101 A2 (MWF 11:15 am) Fall 2018 Copyright © 2018 Dan Dill dan@bu.edu

[TP] The correct order of **polarity** of HBr, HCl and HI is (least to most) ...

17% 1. HBr < HCl < HI
 17% 2. HBr < HI < HCl
 17% 3. HCl < HBr < HI
 17% 4. HCl < HI < HBr
 17% 5. HI < HCl < HBr
 17% 6. HI < HBr < HCl

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Monday, October 15, 2018

For today ...

- Complete: Dipole-dipole vs. temporary dipole (dispersion)
- Putting it all together: Relative boiling points

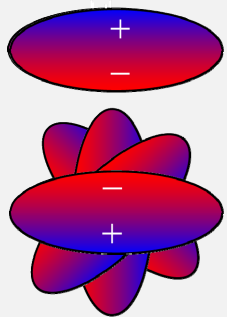
Next lecture: Practice: Intermolecular forces; Dissolving ionic solids; solubility rules; Precipitation reactions; concentrations after precipitation; ionization of molecular solutes; self-ionization of water

Memorize: solubility guidelines fig 6.28, p 181

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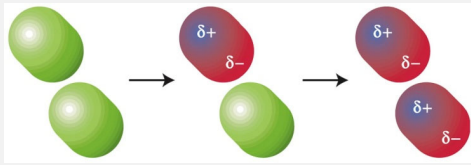
Dipole can be attractive or repulsive



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Dispersion forces are due to induced dipoles



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Induced dipoles

Sketch the induced dipole in each case:

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Dispersion always attractive

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Putting it all together: Relative boiling points

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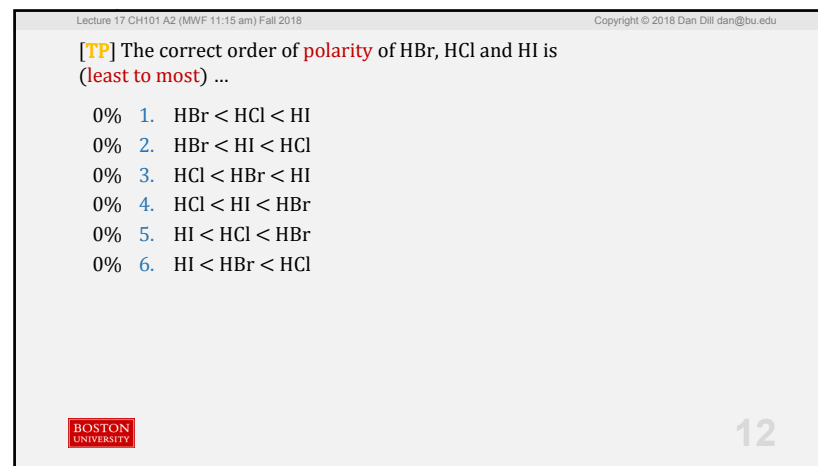
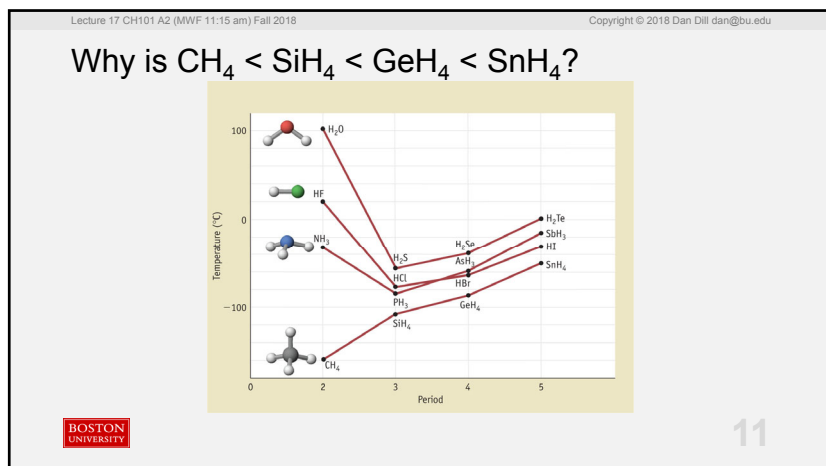
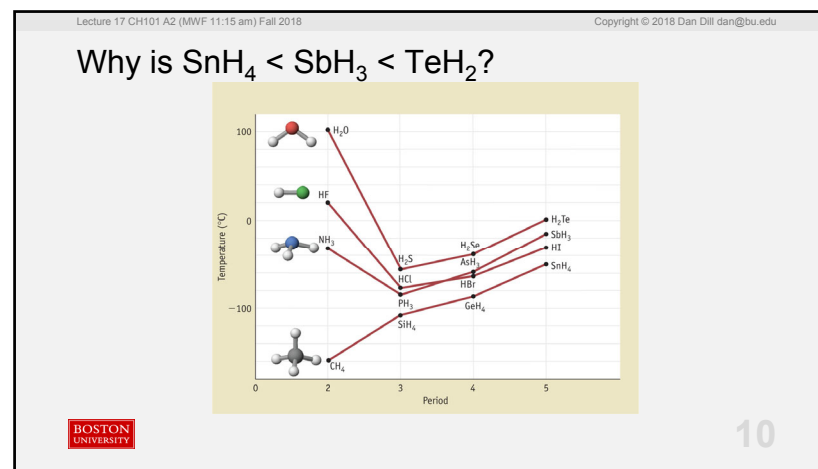
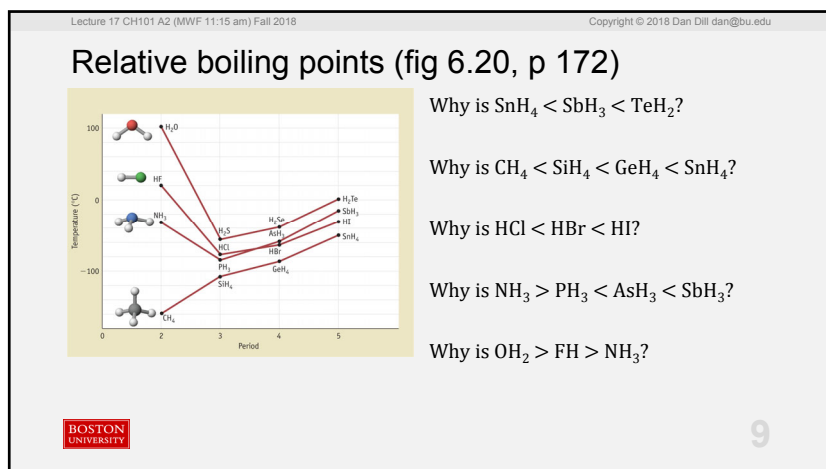
Relative boiling points

Boiling means particles overcome attraction to their neighbors and depart the liquid.

Relative boiling points reflect relative strength of intermolecular forces ...

- Dispersion
- Dipole-dipole interaction
- Hydrogen bonding

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[TP] The correct order of **boiling point** of HBr, HCl and HI is (lowest to highest) ...

- 17% 1. HBr < HCl < HI
 17% 2. HBr < HI < HCl
 17% 3. HCl < HBr < HI
 17% 4. HCl < HI < HBr
 17% 5. HI < HCl < HBr
 17% 6. HI < HBr < HCl



Response Counter

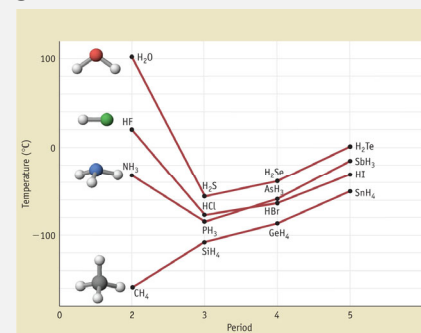
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Why is HCl < HBr < HI?

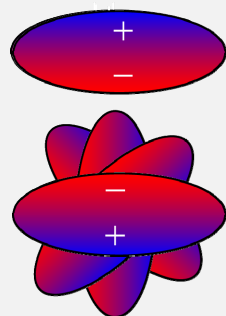


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Dipole can be **attractive** or **repulsive**

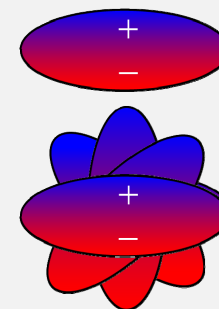


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Dispersion **always attractive**



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