Day 1

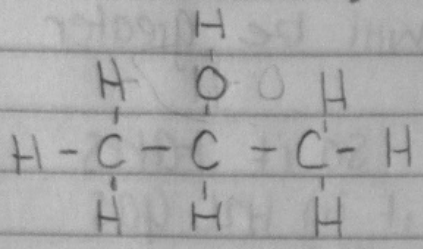
NGLM = optional

LM 1,2,3 due @ 9AM

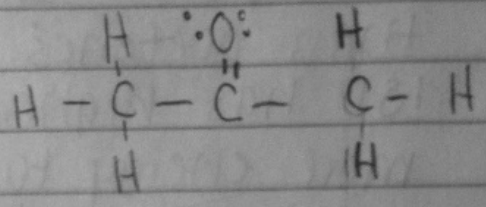
Worksheet

① Both are clear liquid on a macroscopic level
Acetone evaporated quicker and is ripply.
Microscopic:

$CH_3CHOHCH_3$



CH_3COCH_3



Polar (electronegativities) / neither is symmetrical

Lewis Structure

Hydrogen is always terminal!

Molecular Geometry

IPR	Acetone
tetrahedral	tetrahedral
tetrahedral	trigonal planar
tetrahedral	tetrahedral

Intermolecular Forces

IPR	acetone
van der waals	van der waals
hydrogen bonding → because of OH group	dipole-dipole (bc polar molecule)
dipole-dipole (polar)	

Higher boiling point: Isopropanol has hydrogen bonding & stronger IMF, and also evaporated slower

8. Gas phase has ↑ enthalpy than liquid
9. positive ΔH°_{vap}
10. Isopropanol's ΔH°_{vap} will be greater than acetone's.
11. ISP has higher IMF so it takes more energy to put it in the gas phase. It has higher IMF because of the hydrogen bonding & higher boiling point.
11. Gas phase has high entropy
12. Sign of entropy ΔS°_{vap} is (+) for $X_{(\ell)} \rightarrow X_{(g)}$

13. Isopropanol has *same ΔS°_{vap} as acetone because most liquid → gas transitions have the same ΔS°_{vap} !!!
14. $\Delta G = \Delta H -$

* Gibbs Free Energy Change tells us about spontaneity. (+) = <u>not</u> spontaneous
Also tells about stability. (+) big change = not stable
Think of ice / water / gas at different T