

### **Chapter 13 Quiz Study List**

1. Know which states of matter are compressible, have definite volume, fills its container, has a definite shape, and which has the strongest or weakest intermolecular forces.
2. Know how to convert units of pressure and how to convert between Celsius and Kelvin
3. Know the temperature at absolute zero and what happens to the particles at that temperature.
4. Know how to tell if a relationship is inverse or direct.
5. Know what creates gas pressure according to the Kinetic Molecular Theory (KMT).
6. Know that kinetic energy is directly related to temperature according to the KMT.
7. Know how the volume of a gas compares to the distance between the gas particles according to the KMT.
8. Know that the particles in a gas do not attract or repel each other according to KMT.
9. Know all of the phase changes (melting, freezing, evaporation, condensation, sublimation, deposition)
10. Know the definition of intermolecular forces, viscosity, and surface tension.
11. Know how to read a phase diagram and identify the location of the solid, liquid, and gas.
12. Know how to find the critical point and triple point on a phase diagram.
13. Be able to explain what the critical point, triple point, and supercritical fluid are.
14. Be able to locate all the places on the phase diagram where each phase change is taking place.
15. Be able to locate locations on a phase diagram where more than one state of matter coexists.
16. Be able to identify the normal boiling, freezing, melting, and condensation points on a phase diagram.
17. Know what it means for a substance to be at normal pressure.
18. Be able to tell if the liquid or solid is more dense based on the liquid/solid line.

### **Honors Chemistry (all items above plus the following)**

19. Know the difference between intermolecular forces and intramolecular forces.
20. Know that intramolecular forces are stronger than intermolecular forces.
21. Know how to predict which intermolecular forces (London dispersion, Dipole-dipole, Hydrogen bonding) are present in a molecule.
22. Be able to rank the intermolecular forces from weakest to strongest.
23. Be able to tell which molecules have the highest boiling point, highest melting point, highest vapor pressure, and highest viscosity.
24. Know that atmospheric pressure must equal vapor pressure for a substance to boil.
25. Be able to read a vapor pressure graph to determine the boiling point at a certain temperature, normal boiling point, strongest intermolecular forces, and highest or lowest vapor pressure.
26. Know how to use Dalton's law to calculate the total pressure of a mixture of gases or partial pressure of one gas. This includes finding the partial pressure of the dry gas alone.
27. Know the definition of effusion and diffusion.
28. Know how to use Graham's Law to calculate relative rates of diffusion and effusion.
29. Know the definition of surfactant, adhesion, and cohesion.