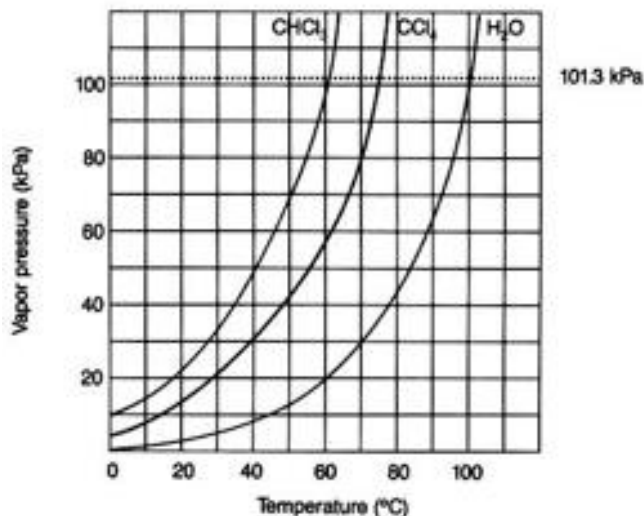


Phase Changes, Equilibrium, Vapor Pressure – Sample Questions

23. Which term best describes the process by which particles escape from the surface of a nonboiling liquid and enter the gas state?
- a. vaporization
 - b. evaporation
 - c. surface tension
 - d. aeration
24. What causes particles in a liquid to escape into a gas state?
- a. high kinetic energy
 - b. a freezing temperature
 - c. surface tension
 - d. the combining of liquids
34. When melting and freezing proceed at the same rate, the system is
- a. sublimated.
 - b. amorphous.
 - c. metallic.
 - d. in equilibrium.
36. A volatile liquid
- a. has strong attractive forces between particles.
 - b. evaporates readily.
 - c. has an odor.
 - d. is ionic.
37. What is the process of a substance changing from a solid to a vapor without passing through the liquid phase?
- a. condensation
 - b. evaporation
 - c. sublimation
 - d. vaporization
47. Which phase change is exothermic?
- a. melting
 - b. Vaporization
 - c. sublimation
 - d. deposition
58. If the rate of evaporation from the surface of a liquid exceeds the rate of condensation,
- a. the system is in equilibrium.
 - b. the liquid is boiling.
 - c. heat energy is no longer available.
 - d. the concentration of the vapor is increasing.
64. A system is in equilibrium when
- a. no physical or chemical changes are occurring.
 - b. the physical changes counteract the chemical changes.
 - c. opposing physical or chemical changes occur at equal rates.
 - d. only physical changes are occurring.

PART B – VAPOR PRESSURE GRAPHS Use the graph below to answer the following questions.

2. What is the vapor pressure of CHCl_3 at 50°C ? _____
3. What is the boiling point of H_2O when the external pressure is 30 kPa? _____
4. What is the normal boiling point of CCl_4 ? _____
5. Which substance has the weakest IMF? _____



Answers:

- | | | |
|-------|----------------------------|-----------------------|
| 23. b | Vapor P Questions (Graph): | 2. 70 kPa |
| 24. a | | 3. 70°C |
| 34. d | | 4. 73°C |
| 36. b | | 5. CHCl_3 |
| 37. c | | |
| 47. d | | |
| 58. d | | |
| 64. c | | |