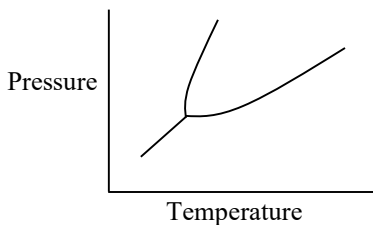


Chemistry Module 4 Homework

Assignment #1

Read pages 99 - 115

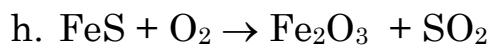
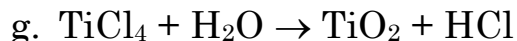
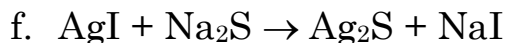
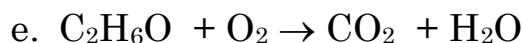
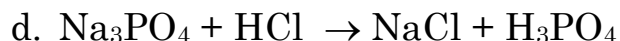
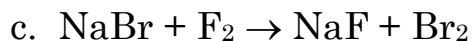
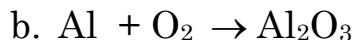
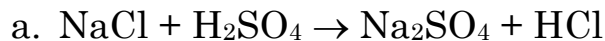
1. What is the difference between a pure substance and a mixture?
2. What is the difference between a homogeneous mixture and a heterogeneous mixture?
3. Classify as pure element, pure compound, homogeneous mixture or heterogeneous mixture.
 - a. Dirt
 - b. Iron
 - c. Milk
 - d. Table sugar
 - e. Sulfur
 - f. Carbon dioxide
 - g. Dr. Pepper
 - h. Distilled water
4. What is the difference between a chemical and a physical change?
5. Classify each as of the following as a physical change or chemical change:
 - a. burning logs in a fireplace
 - b. cooking a cake
 - c. popping a balloon
 - d. dissolving sugar in water
 - e. bending a piece of wire
 - f. iron rusting
 - g. mixing Kool-aid in water
6. Name the phase change as a substance changes from:
 - a. Gas to liquid
 - b. Gas to solid
 - c. Liquid to gas
 - d. Liquid to solid
 - e. Solid to gas
 - f. Solid to liquid
7. Explain how water is different than most substances when it comes to phase changes.
8. Honors - Label the regions (Solid, Liquid, Gas) on the phase diagram below.



9. Honors - What the triple point for water (temperature and pressure)?
10. Honors - What is the critical point for water (temperature and pressure)?

11. List the homonuclear diatomics.

12. Balance the following equations:



13. What is the chemical formula of:

- a. oxygen gas?
- b. hydrogen gas?
- c. nitrogen gas?

14. Rewrite these word equations as balanced chemical equations:

- a. hydrogen gas + sulfur gas $\rightarrow$ hydrogen sulfide (H_2S)
- b. carbon + oxygen gas $\rightarrow$ carbon monoxide gas
- c. chlorine gas + sodium bromide (NaBr) $\rightarrow$ sodium chloride (NaCl) + bromine gas

15. Honors - A sample of calcium carbonate (CaCO_3) was decomposed into calcium oxide and carbon dioxide. Write the balanced equation for this reaction.