

Chemistry I

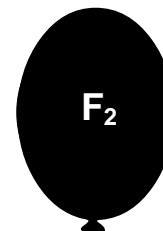
Chemical Quantities

Mixed Problems Review Sheet 7.355a

Name _____

Date _____ Period _____

SHOW YOUR WORK IN THE SPACE PROVIDED



1. Four balloons are filled with gas as indicated above. All four are at STP conditions and all four have the same volume. Calculate the density of the gas in each balloon.
2. Which of the above balloons would rise and which would sink in the surrounding air. Air has a density of about 1.29 g/L
3. Find the density of Freon™ gas at STP conditions. Freon is R-12 refrigerant, the chlorofluorocarbon that has been mostly banned for use due to its action as an ozone depleting pollutant. Its formula is CCl₂F₂.
4. Bromoxynil is a selective contact herbicide that is not very soluble in water and has a very low volatility. The formula of bromoxynil is C₇H₃Br₂NO. What is the % composition of bromine by mass?

(More on back) →

5. Composition C-4 is a plastic explosive used by the military and some private demolition companies. It consists of 90% cyclonite (known more commonly as RDX) and 10% explosive plasticizer. C-4 is white to light tan in color, has no odor, a putty-like consistency, and detonates at about 24,000 f.p.s. putting it well into the range of a high explosive. With such a high frequency of explosion, it is excellent for pulverizing concrete and penetrating thick steel armor. Determine the empirical formula of RDX. The composition of cyclonite is as follows:
- C = 16.22%
 - H = 2.72%
 - N = 37.84%
 - O = 43.22%

6. If the molecular weight of cyclonite is 222.12 g/mol, what is the molecular formula?

7. A&W Root Beer TM is advertised as a “caffeine free and very low sodium” soft drink. The label shows the following information:

1 serving = 355 mL (one 12 fluid oz can)
sodium 45 mg/serving

If you drank just 8 fluid ounces of A&W Root Beer (one cup), how many grams of sodium would you ingest?

1 gram = 1000 mg