

Assessment**Chapter 6****BLM 6-7****Chapter 6 Test****Goal**

Demonstrate your understanding of the concepts studied in Chapter 6.

What To Do

Write your answers to the following questions on a separate piece of paper and attach it to this page. You may use a calculator and the Periodic Table in your textbook as aids.

- (a) Name the law that is also called “constant composition.”

(b) What does this law claim about magnesium oxide samples from Calgary, Chatham, and Charlottetown?
- (a) What information about a compound is provided by its empirical formula?

(b) What additional information does the molecular formula provide?
- (a) What does the formula $\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O}$ tell us about the crystals of this compound?

(b) What name is given to such a compound?

(c) Suggest how the water can be removed.

(d) What term would describe the compound without the water?

(e) What is the mass percent of water in $\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O}$?
- A 316.0 g sample of a compound was found to contain 3.740 g of hydrogen, 132.8 g of chlorine and 179.5 g of oxygen. Find the percentage composition of this compound.
- What is the percentage composition of silver nitrate, AgNO_3 ?
- A compound of chromium and oxygen is 68.4% Cr and 31.6% O. What is its empirical formula?
- A particular rocket fuel has the empirical formula NH_2 . The molar mass of the fuel is 32.1 g/mol. What is the molecular formula of the fuel?
- A 1.000 g sample of a compound (containing C, H, and O) was placed in a combustion analyzer. The combustion produced 1.174 g of water and 1.913 g of carbon dioxide. Find the masses of C, H, and O in the original sample.
- A 3.00 g sample of $\text{CoCl}_2 \cdot x\text{H}_2\text{O}$ was heated and after the water was driven off, 1.64 g of CoCl_2 remained. Find the value of x .