

Percent Composition Activity

Name _____
Date _____ Sample # _____

Background: You have discovered two new elements, *Boltium* and *Nutter*, which have the chemical symbols Bo and Nt. Nutter has an oxidation number of -1. Boltium has several oxidation numbers, +1, +2, +3, and +4, similar to iron which has oxidation numbers of +2 and +3.

Purpose: To find the percentage composition of some compounds made of the elements Bo and Nt.

Materials: Balance, container of boltium and nutter atoms



Part I: Assemble as many molecules of BoNt as possible. Put any excess aside.

_____ How many molecules of BoNt did you make?

- _____ Mass of all BoNt molecules.
- _____ Mass of all Bo atoms used.
- _____ Mass of all Nt atoms used.
- _____ Percent, by mass, of Bo in BoNt .
- _____ Percent, by mass, of Nt in BoNt .
- _____ Name the compound you just made.
- _____ How many molecules of these atoms are in one mole of BoNt ?
- _____ How many atoms of Bo are in one mole of BoNt ?
- _____ How many atoms of Nt are in one mole of BoNt ?

Part II: Assemble as many molecules of BoNt_2 as possible. Put aside any excess.

_____ How many molecules of BoNt_2 did you make?

- _____ Mass of all BoNt_2 molecules.
- _____ Mass of all Bo atoms used.
- _____ Mass of all Nt atoms used.
- _____ Percent, by mass, of Bo in BoNt_2 .
- _____ Percent, by mass, of Nt in BoNt_2 .
- _____ Name this compound, using the correct roman numeral in the name.
- _____ How many molecules of these atoms are in one mole of BoNt_2 ?
- _____ How many atoms of Bo are in one mole of BoNt_2 ?
- _____ How many atoms of Nt are in one mole of BoNt_2 ?

Part III: Assemble as many molecules of BoNt_3 as possible. Put aside any excess.

_____ How many molecules of BoNt_3 did you make?

- a) _____ Mass of all BoNt_3 molecules.
- b) _____ Mass of all Bo atoms used.
- c) _____ Mass of all Nt atoms used.
- d) _____ Percent, by mass, of Bo in BoNt_3 .
- e) _____ Percent, by mass, of Nt in BoNt_3 .
- f) _____ Name this compound, using the correct roman numeral in the name.
- g) _____ How many molecules of these atoms are in one mole of BoNt_3 ?
- h) _____ How many atoms of Bo are in one mole of BoNt_3 ?
- i) _____ How many atoms of Nt are in one mole of BoNt_3 ?

Part IV: Assemble as many molecules of BoNt_4 as possible. Put aside any excess.

_____ How many molecules of BoNt_4 did you make?

- a) _____ Mass of all BoNt_4 molecules.
- b) _____ Mass of all Bo atoms used.
- c) _____ Mass of all Nt atoms used.
- d) _____ Percent, by mass, of Bo in BoNt_4 .
- e) _____ Percent, by mass, of Nt in BoNt_4 .
- f) _____ Name this compound, using the correct roman numeral in the name.
- g) _____ How many molecules of these atoms are in one mole of BoNt_4 ?
- h) _____ How many atoms of Bo are in one mole of BoNt_4 ?
- i) _____ How many atoms of Nt are in one mole of BoNt_4 ?

Questions:

1. Which compound has the highest percentage by mass of Boltium? _____
2. Which compound has the highest percentage by mass of Nutter? _____
3. Which compound has the most atoms per molecule? _____
4. Which compound has the least atoms per molecule? _____

