

Name _____ Period _____ Date _____

Mystery Vials

Go around to room to find all 18 vials of substances. Vials with the same number contain identical substances. Use the common ion list and the information given to complete the rest of the spaces in the chart below.

Ion Name	Ion Formula	Ion Name	Ion Formula	Ion Name	Ion Formula
nitrate	NO ₃	oxide	O ⁻	chloride	Cl ⁻
sulfide	S ⁻	sulfate	SO ₄	hydroxide	OH
phosphate	PO ₄	fluoride	F ⁻	carbonate	CO ₃

Vial	Chemical Name	Chemical Formula	Observations
1		Fe(NO ₃) ₂ (aq)	
2		Cu(NO ₃) ₂ (s)	
3	iron (II) nitrate		
4		_____ (g)	Clear, colorless gas
5	sodium nitrate		
6		NaOH (s)	
7	copper (II) chloride		

8			
9		$\text{HNO}_3 (aq)$	
10			Shiny, reddish solid. metal?
11	sodium hydroxide		
12	copper (II) oxide		
13		_____ (l)	Clear, colorless liquid
14	sulfuric acid		
15		CuO	
16		$\text{CuCl}_2 (aq)$	
17	copper (II) nitrate		
18		$\text{FeCl}_2 (s)$	

2. These symbols represent elements. Identify each element.

a. Cu -

b. H -

c. Zn -

3. Compounds are substances that are made up of more than one element. In your data table, place a C next to the number of each vial that contains a compound.

4. What do you think (s), (l), and (g) stand for?

a. (s) -

b. (l) -

c. (g) -

5. How would you write the chemical formula for ice?

6. What do all the substances labeled (aq) have in common?