

Ionic & Covalent Compounds Worksheet

Write formulas for the following compounds and classify as ionic (I) or covalent (C):

lithium chloride	_____	I or C
ammonium permanganate	_____	_____
silver nitrate	_____	_____
zinc hydroxide	_____	_____
carbon disulfide	_____	_____
iron(III) phosphate	_____	_____
copper(I) iodide	_____	_____
tin(IV) fluoride	_____	_____
barium dichromate	_____	_____
beryllium nitrite	_____	_____
sulfur trioxide	_____	_____
calcium bromide	_____	_____
lead(IV) carbonate	_____	_____
carbon tetrafluoride	_____	_____
strontium sulfide	_____	_____
aluminum acetate	_____	_____
sodium bicarbonate	_____	_____
tin(II) iodide	_____	_____
boron trichloride	_____	_____
dibromine pentoxide	_____	_____
ammonia	_____	_____
silicon dioxide	_____	_____
tetrasulfur tetranitride	_____	_____
magnesium phosphide	_____	_____
copper(I) bisulfite	_____	_____

Write names for the following compounds and classify as ionic (I) or covalent (C):

NaClO ₄	_____	<u>I or C</u>
P ₂ O ₃	_____	_____
Li ₃ P	_____	_____
KHSO ₄	_____	_____
FeS	_____	_____
PbCrO ₄	_____	_____
MgBr ₂	_____	_____
ZnSO ₄	_____	_____
K ₂ CO ₃	_____	_____
Cl ₂ S ₅	_____	_____
H ₂ O	_____	_____
Al ₂ O ₃	_____	_____
NF ₃	_____	_____
CO ₂	_____	_____
NH ₄ NO ₂	_____	_____
Cu(NO ₃) ₂	_____	_____
Ca ₃ N ₂	_____	_____
AlPO ₄	_____	_____
Na ₂ SO ₃	_____	_____
CCl ₄	_____	_____
KCN	_____	_____
HCl	_____	<u>strong acid⇒I</u>
CH ₄	_____	_____
Ba(OH) ₂	_____	_____
H ₂ S	_____	_____
LiC ₂ H ₃ O ₂	_____	_____

Naming Acids

Chem Worksheet 9-3

Name _____

Acids are compounds that can donate the hydrogen ion, H^+ . When the formula for an acid is written the symbol for this hydrogen generally appears at the beginning of the formula. For example the formula for hydrochloric acid is written HCl and the formula for phosphoric acid is H_3PO_4 . Notice that both formulas begin with the letter H. In both cases the acid is made of a hydrogen ion (or hydrogen ions) and a negative ion, known as the **anion**.

The name for an acid is based on the name of the anion. If the anion ends with the letters **-ide**, the acid is named one way while acids containing anions that end with **-ate** use a different rule. Remember that monatomic anions typically end with **-ide**. The rules for naming acids are summarized below.

Naming Acids

Anion called (root) **ide**
 Example: sulfide, S^{2-}
 ↓
 Acid called **hydro** (root) **ic acid**
 Example: hydrosulfuric acid, H_2S

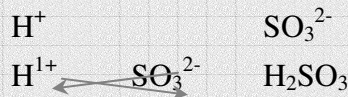
Anion called (root) **ate**
 Example: chlorate, ClO_3^-
 ↓
 Acid called (root) **ic acid**
 Example: chloric acid, $HClO_3$

Anion called (root) **ite**
 Example: chlorite, ClO_2^-
 ↓
 Acid called (root) **ous acid**
 Example: chlorous acid, $HClO_2$

Examples

#1. Write the chemical formula for: sulfurous acid.

- this acid contains the hydrogen ion and the sulfite ion:
- create a neutral compound from these ions:



#2. Name the following acid: H_2CO_3 .

- this acid contains the hydrogen ion and the carbonate ion:
- the name of the negative ion is **carbonate**, therefore the acid is called **carbonic acid**.



Fill in the following table with the missing information.

	Formula	Cation	Formula for anion	Name of anion	Name of Acid
1.	HCl	H^+	Cl^-	chloride	
2.	HNO_3	H^+		nitrate	
3.		H^+	F^-		hydrofluoric acid
4.	H_2SO_4	H^+	SO_4^{2-}		
5.		H^+		carbonate	
6.	H_2SO_3			sulfite	
7.			ClO_3^-		chloric acid
8.		H^+		phosphate	
9.	$H_2C_2O_4$			oxalate	
10.					hydrocyanic acid
11.					acetic acid
12.			I^-		
13.				sulfide	
14.	$HClO$				
15.			AsO_4^{3-}	arsenate	
16.					nitrous acid