

Worksheet # 1- Naming Binary Acids

You will now learn to name and write formulas for acids. The first type of acid we will name is a binary acid. Recall that binary compounds contain two different elements. The cation in all acids is the hydrogen ion or H^{+1} .

All binary acids are named using the following rule: hydro_____ ic acid. The name of the element goes in the blank. For example:

HCl would be hydrochloric acid

H₂S would be hydrosulfuric acid

Name the following acids.

Formula	Name	Formula	Name
HBr		H ₂ Se	
HI		HF	
H ₃ P		H ₂ Te	

When you write the formulas for acids you use the same method you used when writing the formula for compounds containing metals.

- First you write each symbol with the charge. (Remember that the cation will always be H^{+1})
- Next you switch the charges and make them subscripts. (Swap and Drop)

For example: hydroiodic acid $\rightarrow H^{+1}$ and I^{-1} becomes HI

hydrophosphoric acid $\rightarrow H^{+1}$ and P^{-3} becomes H₃P

Name	Formula
hydrosulfuric acid	
hydrochloric acid	
hydroarsenic acid	
hydrofluoric acid	
hydroiodic acid	
hydrotelluric acid	

Worksheet #2: Naming Polyatomic Acids

Now you will learn to name acids that contain polyatomic ions. Here you do NOT use the hydro.

Name the polyatomic ion (look at your chart if you need to)

Change the ending of the polyatomic ion to “-ic” or “-ous”.

If the ending of a polyatomic ion is “-ate” you will use the ending “-ic”.

If the ending of a polyatomic ion is “-ite” you will use the ending “-ous”.

An easy way to remember how to change the endings is: “ate-ic...ite-ous”.

For example: HClO_3 = Because the acid contains the chlorate ion, it is called chloric acid
 HClO_2 = Because the acid contains the chlorite ion, it is called chlorous acid
 H_2SO_3 = Because the acid contains the sulfite ion, it is called sulfurous acid
 H_2SO_4 = Because the acid contains the sulfate ion, it is called sulfuric acid

Name the following acids.

Formula	Name	Formula	Name
H_2SO_3		H_2CrO_4	
HNO_3		HIO_3	
H_3PO_3		H_3AsO_4	

Use the same rules as above as you write the formulas for the following acids, which contain polyatomic ions.

Remember these acids do NOT use the prefix of “hydro”.

Also remember that if the acid has an “-ic” ending then the “ate” ion is used in the formula.

If the acid has an “-ous” ending then the “ite” ion is used in the formula.

Name	Formula	Name	Formula
sulfurous acid		nitrous acid	
silicic acid		chloric acid	
acetic acid		permanganic acid	
boric acid		phosphorous acid	