

# Download File PDF Pogil Answer Key

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so many fake sites. this is the first one which worked! Many thanks

## Model 2 - Ternary Acids (Oxyacids)

Acid	Name of Acid in Aqueous Solution	Carbon (c)	Polyatomic Anion (a)	Polyatomic Anion Name
HClO <sub>4</sub>	Chloric acid	1(+7)	ClO <sub>4</sub> <sup>-4</sup>	Chlorate
H <sub>2</sub> SO <sub>4</sub>	Sulfuric acid	2(+6)	SO <sub>4</sub> <sup>-2</sup>	Sulfate
H <sub>2</sub> SO <sub>3</sub>	Sulfurous acid	2(+4)	SO <sub>3</sub> <sup>-2</sup>	Sulfite
H <sub>3</sub> PO <sub>4</sub>	Phosphoric acid	3(+5)	PO <sub>4</sub> <sup>-3</sup>	Phosphate
H <sub>3</sub> PO <sub>3</sub>	Phosphorous acid	3(+3)	PO <sub>3</sub> <sup>-2</sup>	Phosphite
HNO <sub>3</sub>	Nitric acid	1(+5)	NO <sub>3</sub> <sup>-2</sup>	Nitrate
HNO <sub>2</sub>	Nitrous acid	1(+3)	NO <sub>2</sub> <sup>-2</sup>	Nitrite
H <sub>2</sub> CO <sub>3</sub>	Carbonic acid	2(+4)	CO <sub>3</sub> <sup>-2</sup>	Carbonate

6. Look at the formulas of the ternary acids in Model 2.
8. How are ternary acids different from binary acids in their structure?  
*Ternary acids contain three elements and they also contain the element oxygen.*
9. What number do you think the prefix "tri-" refers to?  
*3*
7. When ternary acids are mixed with water, ions will form. Fill in the table above with the formula and names of the anions.
8. Examine the pairs of ternary acids in Model 2 that contain sulfur, phosphorus, and nitrogen. Each pair has one acid that ends in "-ic" and another that ends in "-ous". These endings are related to the name of the polyatomic anion found in the acid ("ite" or "ate"). Complete the statements below with the correct acid name ending.
- Polyatomic anion ending in "-ite" → acid name ending in ite
- Polyatomic anion ending in "-ate" → acid name ending in ate
9. If the prefix "hypo-" were used to name a ternary acid, what problem would this create when naming HClO<sub>2</sub>? *HClO<sub>2</sub> has the same number of chlorine atoms as HClO<sub>3</sub>. It would be replaced with HClO<sub>2</sub>. If HClO<sub>2</sub> is used as a prefix, it would be HClO<sub>2</sub> HClO<sub>2</sub>. This is not correct. The correct name is HClO<sub>2</sub>, not HClO<sub>2</sub>.*
- The prefix "hypo-" is not used in the same manner as acids contain more than two elements and one of the elements is oxygen. "ate" is replaced with "ite" and "ite" is replaced with "ous".*
11. Replace the name of the chlorine acid.
- HClO<sub>2</sub>
12. Circle the acid(s) below that would be named beginning with the prefix "hypo-".
- H<sub>2</sub>SO<sub>4</sub>            H<sub>2</sub>CO<sub>3</sub>   HNO<sub>2</sub>

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Key

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