

Warm Up

Name the following:



Write formulas for the following:

dichlorine heptoxide

diphosphorus pentoxide

Objectives

TSWBAT:

Create chemical formulas and name compounds with polyatomic ions

Polyatomic Ions

Def: A tightly bound group of atoms that behaves as a unit and has a positive or negative charge

Get your textbook and open to p. 257 so you can follow along!

Naming

The names of **most** polyatomic ions end in "-ite" or "-ate."

Examples, nitrite, NO_2^-
nitrate, NO_3^-

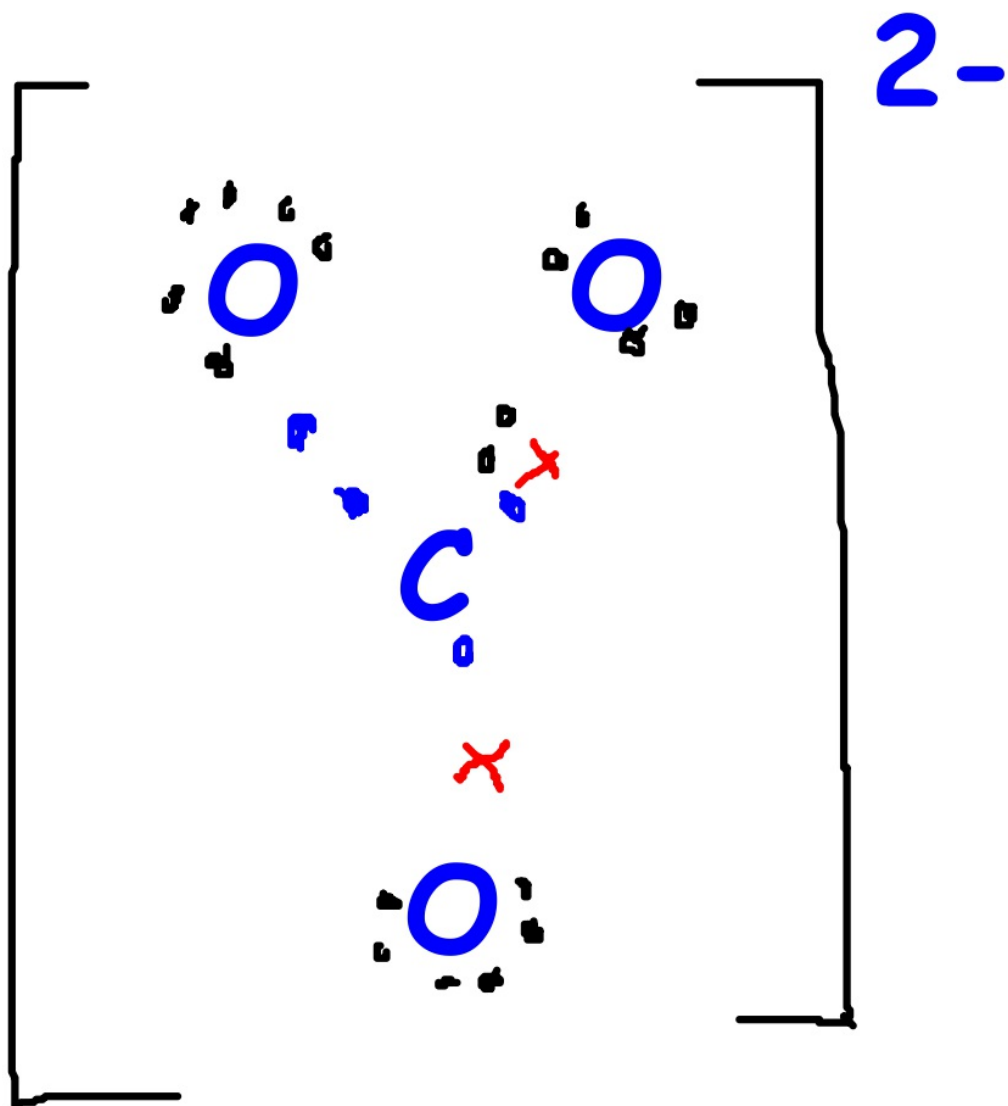
When there is a pair of polyatomics, the one with fewer oxygens ends in "-ite"

However, not ALL polyatomic ions contain oxygen. Here is one with no oxygen:

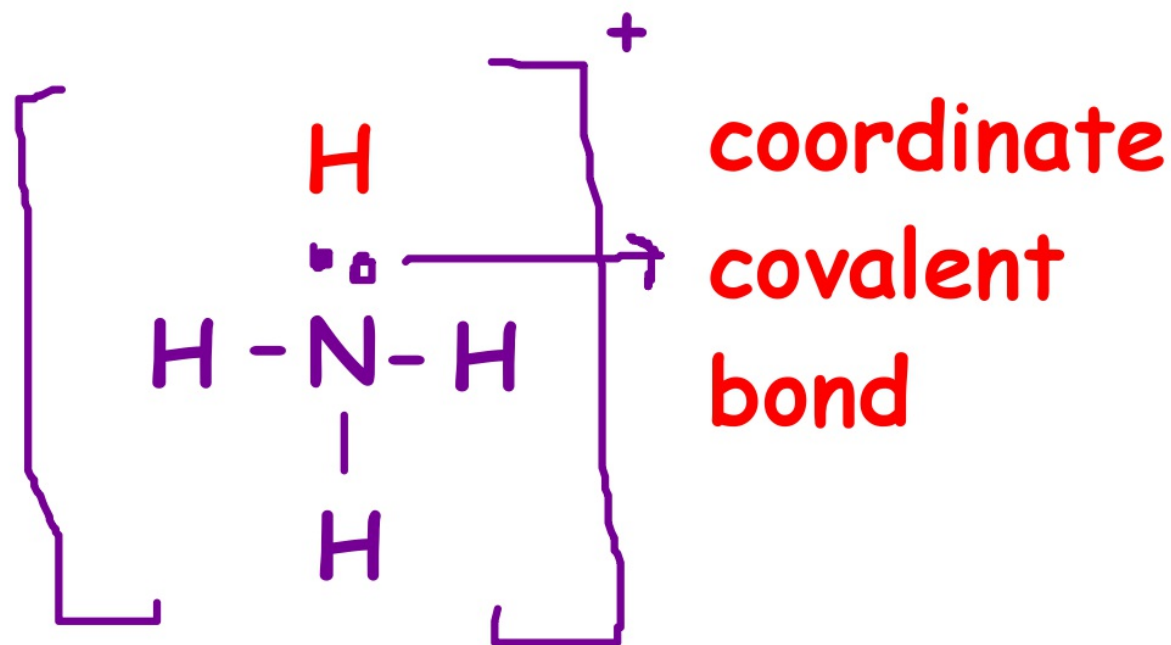
Cyanide, CN^-

Also, hydroxide (OH^-) has oxygen but DOES NOT end in "-ite" or "-ate."

Example: carbonate ion, CO_3^{2-}



Most of the polyatomic ions we will work with have a negative charge.
The one **positively** charged polyatomic we will work with is ammonium, NH_4^+



Refer to the list of polyatomic ions on p. 257.

Next week there will be a quiz that requires you to **MEMORIZE** the name, formula and charge of the following polyatomic ions:

Chem CP: hydroxide, cyanide, nitrite, nitrate, sulfite, sulfate, carbonate, phosphite, phosphate, & ammonium

Chem Honors: **ALL of them!**

How do we use polyatomic ions? We can make compounds with these charged groups in the same way we do other ionic compounds. The charges **MUST** balance out to zero (neutral.)

Example: Sodium phosphate



You try:

potassium hydroxide

magnesium permanganate

lithium sulfate

calcium nitrate

Warm Up

Write the formula for:

potassium nitrate

sodium sulfate

potassium nitride

cesium nitrite

We can also go the other way.
Write the names of these
compounds:

KCN

$\text{Ca}(\text{NO}_2)_2$

$\text{Mg}_3(\text{PO}_4)_2$