

HALIDES

The **halide mineral** class include those **minerals** with a dominant **halide** anion (F^- , Cl^- , Br^- and I^-). Each carries a -1 charge that must be balanced. You are only responsible for two.

Fluorite – CaF_2

Color - _____
 Crystal Habit - _____
 Crystal System - _____
 Cleavage - octahedral
 Hardness - _____
 Luster/Streak _____/_____
 Use (if any) - _____
 Other _____

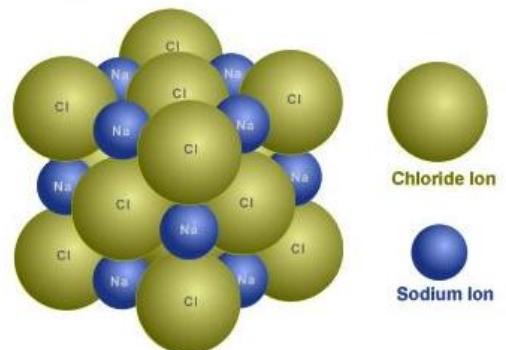


Halite - $NaCl$

Color - _____
 Crystal Habit - _____
 Crystal System - _____
 Cleavage - _____
 Hardness - _____
 Luster/Streak _____/_____
 Use (if any) - _____
 Other _____



Arrangement of Sodium and Chloride Ions in Halite



Evaporite mineral

OXIDES

An **oxide** is a chemical compound that contains at least one oxygen atom and one other element in its chemical formula.

Corundum - Al_2O_3

Color - _____
Crystal Habit - _____
Crystal System - _____
Cleavage - _____
Hardness - _____
Luster/Streak _____/_____
Use (if any) - _____
Other _____



Rubies and sapphires are gem corundum.

Ruby Gemstone Information



rubies are red,



sapphires are blue !!

OXIDES – continued -- Iron OXIDES

Goethite/Limonite (FeO(OH))

Color - _____
Crystal Habit - _____
Crystal System - _____
Cleavage - _____
Hardness - _____
Luster/Streak _____/_____
Use (if any) - _____
Other _____



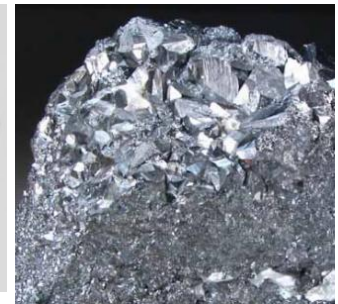
Hematite Fe₂O₃

Color - _____
Crystal Habit - _____
Crystal System - _____
Cleavage - _____
Hardness - _____
Luster/Streak _____/_____
Use (if any) - _____
Other _____



Magnetite Fe₃O₄

Color - _____
Crystal Habit - _____
Crystal System - _____
Cleavage - _____
Hardness - _____
Luster/Streak _____/_____
Use (if any) - _____
Other _____



PHOSPHATES

Phosphate minerals are those minerals that contain the tetrahedrally coordinated phosphate (PO_4^{3-}) anion along with the freely substituting **arsenate** (AsO_4^{3-}) and **vanadate** (VO_4^{3-}). **Chlorine** (Cl^-), **fluorine** (F^-), and **hydroxide** (OH^-) anions also fit into the crystal structure.



Apatite $\text{Ca}_5(\text{PO}_4)_3(\text{F},\text{Cl},\text{OH})$

Color - _____
Crystal Habit - _____
Crystal System - _____
Cleavage - _____
Hardness - 5 on Mohs scale
Luster/Streak _____/_____
Use (if any) - _____
Other _____

