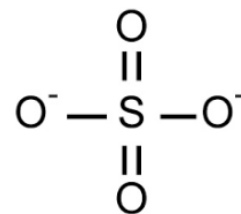


SULFATES

Sulfate minerals contain a sulfate anion group, which is chemically one sulfur atom bonded with 4 oxygen atoms (SO_4) and it carries a -2 charge.



Barite – BaSO_4

Color - _____

Crystal Habit - _____

Crystal System - _____

Cleavage - _____

Hardness - _____

Luster/Streak _____/_____

Use (if any) - _____

Other _____



Often bladed



Barite rose

Celestite – SrSO_4

Color - _____

Crystal Habit - _____

Crystal System - _____

Cleavage - _____

Hardness - _____

Luster/Streak _____/_____

Use (if any) - _____

Other _____



SULFATES - Gypsum

Gypsum Varieties - CaSO_4

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

All varieties are soft and can be scratched by a fingernail.

Gypsum comes in 3 varieties. You need to know all 3.

Alabaster - CaSO_4



granular

Satin Spar - CaSO_4



fibrous

Selenite (which is crystalline) - CaSO_4



Cave of Swords, Mexico

SULFIDES

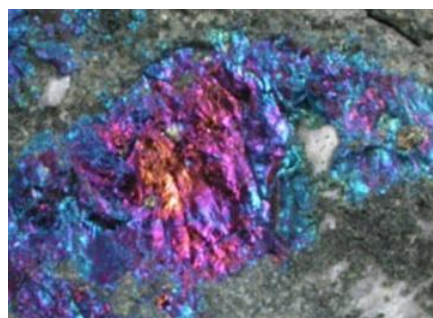
Sulfide minerals contain a sulfide ion (S^{2-}). In most cases the sulfide ion is paired with metal ions. From a human perspective many of these minerals are most important for their metal content.

Bornite Cu_5FeS_4

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



Referred to as peacock ore



Chalcopyrite $CuFeS_2$

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



sphalerite



chalcopyrite
pyrite

SULFIDES - continued

Galena - PbS

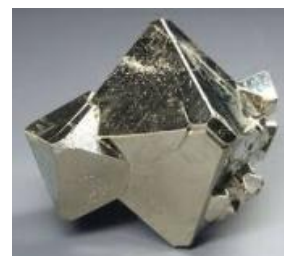
Color - _____
Crystal Habit - _____
Crystal System - _____
Cleavage - _____
Hardness - _____
Luster/Streak _____/_____
Use (if any) - _____
Other _____



Very dense

Pyrite - FeS₂

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



Cubic (cubes and octahedrons)



Sphalerite - ZnS

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



with pyrite