

Mineral name: Pyrite

General Mineral formula: FeS₂

Mineral chemical class: Sulfide

Specific Gravity: 5.02	Crystal System: Isometric
Hardness: 6-6.5	Crystal Class: 2/m 3 bar
Cleavage: Uneven Fractures	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">Forms these small grains of pyritohedron, can also form cubesStriationsSubhedral
Streak: Black	
Characteristic Color(s): Brassy Yellow	

Environment (where you find the mineral): <ul style="list-style-type: none">hydrothermal environmentsit can also occur as an accessory mineral in igneous or metamorphic rocks	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">GoldGalena, Chalcopyrite, sphalerite
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Scientific use/significance: <ul style="list-style-type: none">	Industrial or societal use/significance: <ul style="list-style-type: none">Source of iron and sulfideFools goldHistorical medical treatments	Environmental significance: <ul style="list-style-type: none">Most common sulfideMining can create sulfuric acid by oxidizing with iron
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Mineral name: Marcasite

General Mineral formula: FeS₂

Mineral chemical class: Sulfide

Specific Gravity: 4.89	Crystal System: Orthorhombic
Hardness: 6-7	Crystal Class: 2/m 2/m 2/m
Cleavage: Cleavage on {101} but can't tell on sample	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">• "cockscomb" or spear-shaped groups• Sawlike, leafy• twinning
Streak: Black	
Characteristic Color(s): Silvery Bronze	

Environment (where you find the mineral): <ul style="list-style-type: none">• hydrothermal sulfide deposits• low temperature	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• galena and sphalerite
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Scientific use/significance: <ul style="list-style-type: none">• Precipitated in biomineralization process	Industrial or societal use/significance: <ul style="list-style-type: none">• Sulfur and Iron	Environmental significance: <ul style="list-style-type: none">• Unstable on earth's surface
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Cockscomb
Like Groups



Silvery bronze

Mineral name: Galena

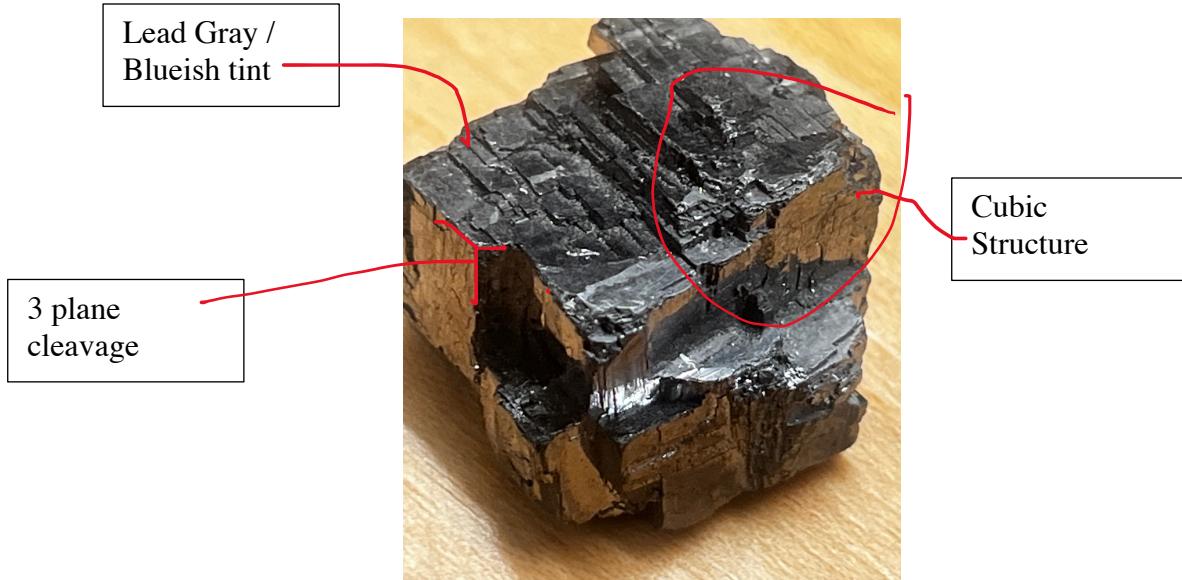
General Mineral formula: PbS

Mineral chemical class: Sulfide

Specific Gravity: 7.58	Crystal System: Isometric
Hardness: 2.5	Crystal Class: 4/m 3bar 2/m
Cleavage: Perfect 3 planes of cubic cleavage	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">• Cubic with clean 90 degree cleavage faces• Euhedral.
Streak: Black	
Characteristic Color(s): Silvery Blue / Lead Gray	

Environment (where you find the mineral): <ul style="list-style-type: none">• Hydrothermal sulfide deposits	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• sphalerite, pyrite, chalcopyrite, quartz, calcite, fluorite, and/or barite
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Scientific use/significance: <ul style="list-style-type: none">• Semiconductor• Lead oxide can be toxic	Industrial or societal use/significance: <ul style="list-style-type: none">• Silver and Lead Extraction• Lead acid batteries, solder• Crystal healing, folk treatment for diarrhea	Environmental significance: <ul style="list-style-type: none">•
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Mineral name: Sphalerite

General Mineral formula: ZnS

Mineral chemical class: Sulfide

Specific Gravity: 3.9-4.1	Crystal System: Isometric
Hardness: 3-4	Crystal Class: 4bar 3 m
Cleavage: Dodecahedral Cleavage (6 planes)	Crystal description (common forms, habit, etc.):
Luster: Submetallic to Resinous	
Streak: White/Brownish	
Characteristic Color(s): Black/ Dark Amber Red	

Environment (where you find the mineral): <ul style="list-style-type: none">Hydrothermal sulfide depositsAccessory mineralCan also be potentially biologically made	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">galena, pyrite, chalcopyrite, pyrrhotite, and other sulfides,quartz, carbonates, and sulfates
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Scientific use/significance: <ul style="list-style-type: none">pyroelectricsome exhibits triboluminescenceBacteria can precipitate potentially	Industrial or societal use/significance: <ul style="list-style-type: none">Zinc OreCadmiumIndiumGalliumGermanium	Environmental significance:
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Mineral name: Sulfur

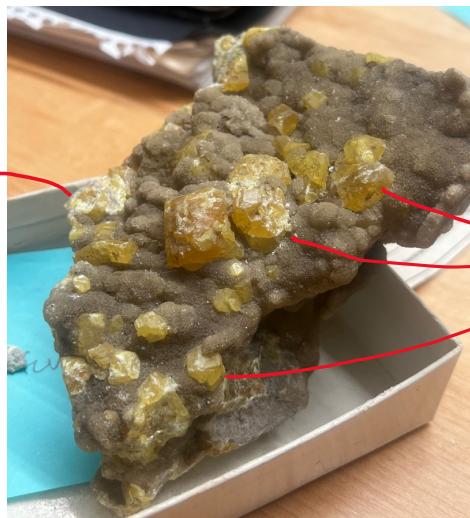
General Mineral formula: S

Mineral chemical class: Native Element

Specific Gravity: 2.07	Crystal System: Orthorhombic
Hardness: 1.5-2.5	Crystal Class: 2/m 2/m 2/m
Cleavage: Conchoidal	Crystal description (common forms, habit, etc.):
Luster: Resinous to Greasy	<ul style="list-style-type: none">Polyhedral Masses on sample, can appear as dipyramidalSubhedralJust smells like sulfur
Streak: White	
Characteristic Color(s): Yellow to yellowish brown	

Environment (where you find the mineral): <ul style="list-style-type: none">fumaroles or volcanic ventshot springs and marine evaporite deposits	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">Gypsum, anhydrite (alterations)
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Scientific use/significance: <ul style="list-style-type: none">Hydrogen sulfide to elemental sulfide through oxidation	Industrial or societal use/significance: <ul style="list-style-type: none">Sulfuric AcidIngredient in shampoosFertilizers and nutrientsMedical	Environmental significance: <ul style="list-style-type: none">
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Yellow to yellowish brown

Polyhedral like Masses

Mineral name: Silver

General Mineral formula: Ag

Mineral chemical class: Native Element

Specific Gravity: 10.1 – 11.1	Crystal System: Isometric
Hardness: 2.5-3	Crystal Class: 4/m 3 bar 2/m
Cleavage: No cleavage	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">• Fibrous Wires• Anhedral Masses• Tarnishes black
Streak: Silvery White	
Characteristic Color(s): Silvery white or dull gray	

Environment (where you find the mineral): <ul style="list-style-type: none">• oxidized portion of silver-bearing hydrothermal sulfide deposits	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• Gold
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Scientific use/significance: <ul style="list-style-type: none">• Antimicrobial	Industrial or societal use/significance: <ul style="list-style-type: none">• Jewlery, Tableware• Alternative Medicine• Use in photographic film	Environmental significance: <ul style="list-style-type: none">•
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Mineral name: Copper

General Mineral formula: Cu

Mineral chemical class: Native Element

Specific Gravity: 8.95	Crystal System: Isometric
Hardness: 2.5-3	Crystal Class: 4/m 3bar 2/m
Cleavage: None	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">Mildly Dendritic, outward irregular growthsDoesn't usually form crystalsAnhedral
Streak: Copper Reddish	
Characteristic Color(s): Copper Red	

Environment (where you find the mineral): <ul style="list-style-type: none">Mafic Volcanic Rock	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">copper sulfates, and copper carbonatescuprite, chalcocite, bornite, epidote, calcite, chlorite, and zeolites
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Scientific use/significance: <ul style="list-style-type: none">Antimicrobial	Industrial or societal use/significance: <ul style="list-style-type: none">Electrical WireEarly source of general metalworking	Environmental significance: <ul style="list-style-type: none">
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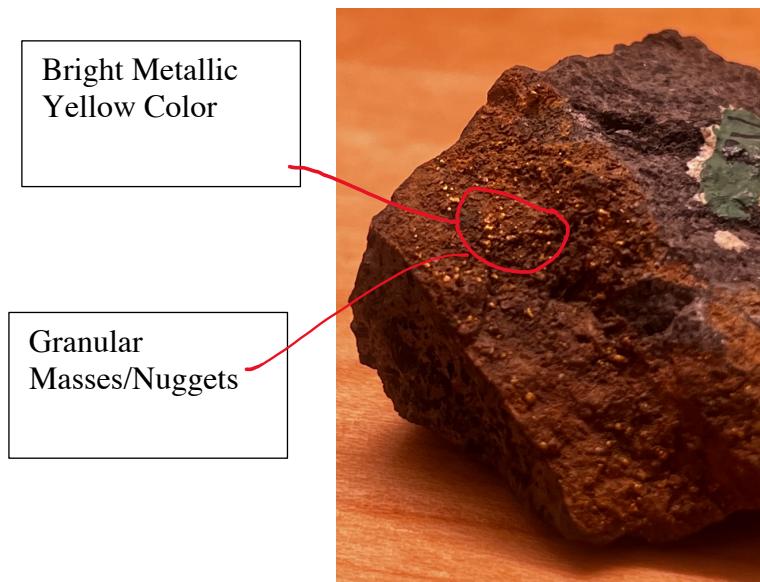
Mineral name: Gold

General Mineral formula: Au

Mineral chemical class: Native Element

Specific Gravity: 19.3	Crystal System: Isometric
Hardness: 2-3	Crystal Class: 4/m 3 bar 2/m
Cleavage: No Cleavage	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">• Granular Masses• Malleable and sectile• Anhedral
Streak: Gold-Yellow	
Characteristic Color(s): Gold yellow	

Environment (where you find the mineral): <ul style="list-style-type: none">• Hydrothermal Sulfide Deposits• Placer Deposits (Sedimentary Processes)	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• Pyrite, Chalcopyrite	
Scientific use/significance: <ul style="list-style-type: none">• Certain bacteria can extra gold from solution and precipitate• Electrical Conductor	Industrial or societal use/significance: <ul style="list-style-type: none">• Jewelry• Monetary Standard• Electronic Applications	Environmental significance: <ul style="list-style-type: none">• Almost all gold is recycled.



Mineral name: Graphite

General Mineral formula: C

Mineral chemical class: Native Element

Specific Gravity: 2.09-2.23	Crystal System: Hexagonal
Hardness: 1-2	Crystal Class: 6/m 2/m 2/m
Cleavage: Basal Cleavage	Crystal description (common forms, habit, etc.):
Luster: Dull metallic	<ul style="list-style-type: none">• Foliated Masses / plates• Slippery, leaves markings• Anhedral
Streak: Black	
Characteristic Color(s): Silvery Black	

Environment (where you find the mineral): <ul style="list-style-type: none">• metamorphic rocks whose protoliths were sedimentary rocks containing organic matter	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• Diamond• Garnets, Quartz, Tourmalines
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Scientific use/significance: <ul style="list-style-type: none">• Conductor	Industrial or societal use/significance: <ul style="list-style-type: none">• Pencil Lead• Dry Lubricator• Electrical Resistors	Environmental significance: <ul style="list-style-type: none">•
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Black color with a dull metallic luster that gives a silvery color



Mineral name: Chalcopyrite

General Mineral formula: CuFeS₂

Mineral chemical class: Sulfide

Specific Gravity: 4.1-4.3	Crystal System: Tetragonal
Hardness: 3.5-4	Crystal Class: 4bar 2/m
Cleavage: poor 2 planes of cleavage	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">• Tetrahedral like crystals• Subhedral• Iridescent tarnish
Streak: Greenish Black	
Characteristic Color(s): Brass yellow	

Environment (where you find the mineral): <ul style="list-style-type: none">• Hydrothermal Sulfide deposits	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• galena, sphalerite, pyrite, and other sulfide minerals.
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Scientific use/significance: <ul style="list-style-type: none">•	Industrial or societal use/significance: <ul style="list-style-type: none">• Copper Ore• Folk Medicine• Electrical Wire	Environmental significance: <ul style="list-style-type: none">•
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Brass Yellow

Tetrahedra

Mineral name: Iron

General Mineral formula: Fe

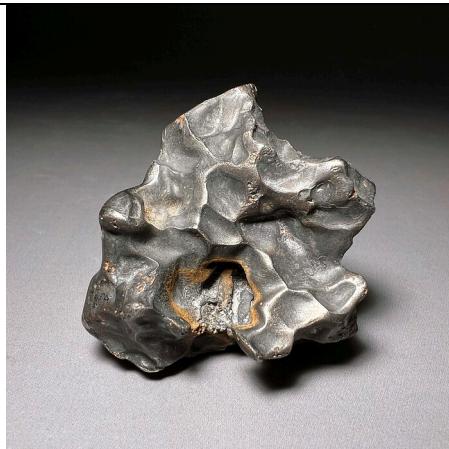
Mineral chemical class: Native Element

Specific Gravity: 7.3-7.9	Crystal System: Isometric
Hardness: 4	Crystal Class: 4/m 3bar 2/m
Cleavage: One plane of cleavage	Crystal description (common forms, habit, etc.):
Luster: Metallic	<ul style="list-style-type: none">• Magnetic• Irregular masses• Malleable and ductile
Streak: Iron Black	
Characteristic Color(s): Iron Black	

Environment (where you find the mineral): <ul style="list-style-type: none">• basalts, with carbonaceous sediments, or with organic matter	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">•
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Scientific use/significance: <ul style="list-style-type: none">• Vital nutrient	Industrial or societal use/significance: <ul style="list-style-type: none">• Steel production• Magnets• General sheeted metal for everyday applications	Environmental significance: <ul style="list-style-type: none">•
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Iron Back / Silver



Mineral name: Diamond

General Mineral formula: C

Mineral chemical class: Native Element

Specific Gravity: 3.51	Crystal System: Isometric
Hardness: 10	Crystal Class: 4/m 3bar 2/m
Cleavage: Perfect {111} cleavage	Crystal description (common forms, habit, etc.):
Luster: Adamantine	<ul style="list-style-type: none">• Octahedral Crystals• Euhedral
Streak: White	
Characteristic Color(s): Colorless, many other colors(yellow,blue, etc.) depending on impurities	

Environment (where you find the mineral): <ul style="list-style-type: none">• Very high pressure areas like, kimberlites• Can also be brought up to the surface from deep pressure	Common Mineral Associations (in samples; also consult text, notes): <ul style="list-style-type: none">• olivine, pyroxene, garnet, magnetite, and phlogopite	
Scientific use/significance: <ul style="list-style-type: none">• <i>large-band gap semiconductor</i>	Industrial or societal use/significance: <ul style="list-style-type: none">• Gemstone• Cutting tools / abrasive• Folk medicinal effects	Environmental significance: <ul style="list-style-type: none">• Pressure indicator in ultra high pressure metamorphic rocks

Octahedral Crystal

