Mineral name: Quartz **General Mineral formula:** SiO_2

Mineral chemical class: Tectosilicate

Commented [AH1]: glassy luster, hardness, and conchoidal fracture.

Specific Gravity: Medium-Light	**Crystal System: Trigonal**
Hardness: 7	**Crystal Class: 3 2**
Cleavage: Irregular / Coccoidal Fracture	**Crystal description (common forms, habit, etc.):** • Hexagonal Prismatic crystal shape • Irregular shape when cleaved
Luster: Vitreous	
Streak: White	
Characteristic Color(s): None, can be many different colors, or colorless	

Environment (where you find the mineral): • Occurs in wide variety of environments • Intrusive and extraneous igneous rock • Granite, diorite, gabbro • Sedimentary rocks	**Common Mineral Associations (in samples; also consult text, notes):** • Amethyst, Smoky Quartz, Rose Quartz, Citrine, Agate, Onyx, Chalcedony

Scientific use/significance: • Optical instruments	**Industrial or societal use/significance:** • Used for making glass • Transistors • Abrasive or filler in plastics / paints	**Environmental significance:** • Host rocks for other minerals like gold • Physically stable on earths surface

Trigonal prismatic form

Conchoidal fracture

Vitreous lustre

Mineral name: Microcline(K-feldspar)

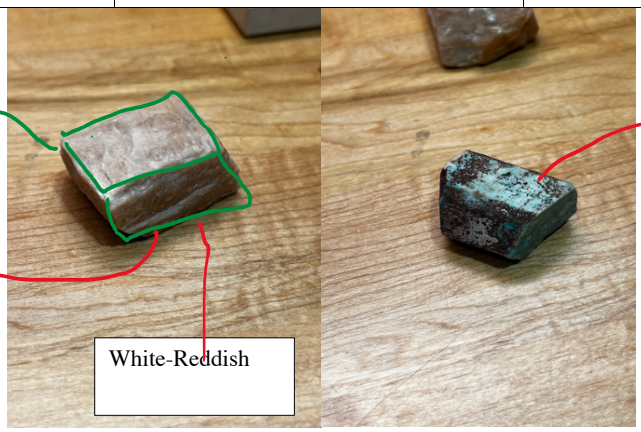
General Mineral formula: $KAlSi_3O_8$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium	**Crystal System: Triclinic**
Hardness: 6-7	**Crystal Class: Bar 1**
Cleavage: Cleavage on two planes / directions, not 90 degreees	**Crystal description (common forms, habit, etc.):** • Rhombohedron shape • Subhedral • Exsolution Lamellae
Luster: Waxy	
Streak: Dark Gray Streak	
Characteristic Color(s): Teal, white-pinkish	

Commented [AH2]: Teal due to lead impurities

Environment (where you find the mineral): • felsic igneous rocks • granite • low temperatures	**Common Mineral Associations (in samples; also consult text, notes):** • amazonite, • Sanidine, orthoclase

Scientific use/significance: •	**Industrial or societal use/significance:** • Ceramics	**Environmental significance:** •



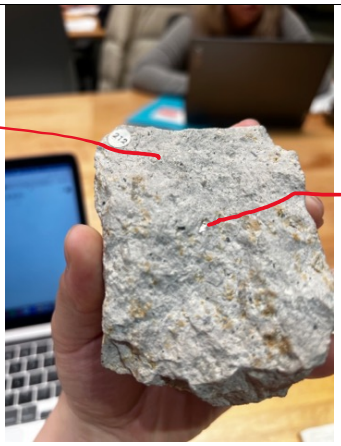
Mineral name: Sanidine(K-feldspar)

General Mineral formula: $KAlSi_3O_8$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium	**Crystal System: Monoclinic**
Hardness: 6	**Crystal Class: 2/m**
Cleavage: Cleavage on two planes	**Crystal description (common forms, habit, etc.):** • Tabular • Euhedral • Tiny / Bladed
Luster: Vitreous	
Streak: White	
Characteristic Color(s): Clear, white/grayish	

Environment (where you find the mineral): • Volcanic rocks, appear felsic • Occurs as phenocrysts in finer-grained volcanic rocks.	**Common Mineral Associations (in samples; also consult text, notes):** • Rhyolite, Rhyodacite • Microcline, Orthoclase

Scientific use/significance: • Radiometric dating for volcanic eruptions	**Industrial or societal use/significance:** • Porcelain • Gemstones	**Environmental significance:** •



Mineral name: Zeolite

General Mineral formula: $M_xD_y(Al_{x+2y}Si_{n-x-2y}O_{2n})$ m H_2O

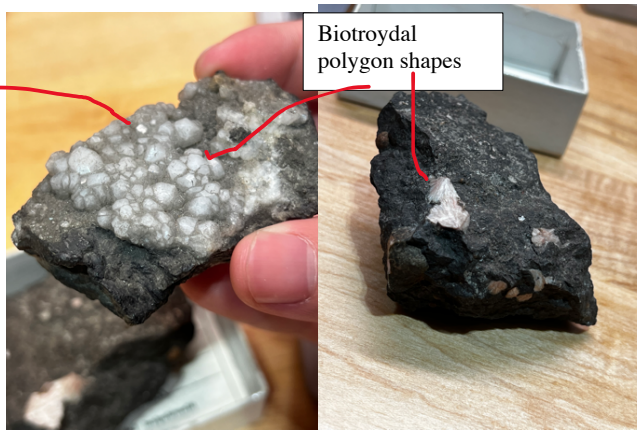
Mineral chemical class: Tectosilicate

Specific Gravity: Medium 2-2.4	**Crystal System: Triclinic**
Hardness: 4-5	**Crystal Class: 1 Bar**
Cleavage: Uneven Fracture	**Crystal description (common forms, habit, etc.):** • Botryoidal groups of dodecahedral shapes. • Subhedral •
Luster: Vitreous	
Streak: White	
Characteristic Color(s): Mainly White - brownish inpurities	

Environment (where you find the mineral): • Secondary(produced by alteration of some precursor mineral) across fractures • Veins in basaltic ignous rocks(volcanic) • Altered tuffs/ ash falls • Low grade metamorphic rocks	**Common Mineral Associations (in samples; also consult text, notes):** • Laumontite, Natrolite, Scolecite

Scientific use/significance: • Zeolites have open structure and facilitate ion exchanges	**Industrial or societal use/significance:** • Catalysis • Water purifications • Water softners • Cat litter • Laundry Detergent	**Environmental significance:** • Air purification, water retention

In Volcanic rock



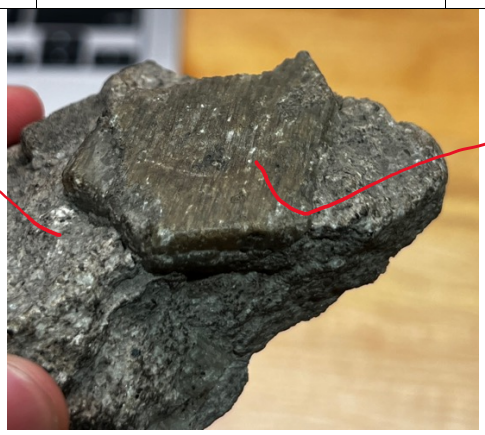
Mineral name: Orthoclase(K-Feldspar)

General Mineral formula: $KAlSi_3O_8$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium	**Crystal System:** Monoclinic
Hardness: 6	**Crystal Class:** 2 / m
Cleavage: 2 planes of cleavage at 90 degrees	**Crystal description (common forms, habit, etc.):** • Tabular / prismatic shape with clean planes, filled with little lamellae • Subhedral • Carlsbad Twinning
Luster: Dull / Sub Vitreous	
Streak: White	
Characteristic Color(s): Dark Gray / Whitish	

Environment (where you find the mineral): • Felsic Igneous Rock • Intermediete temperatures • Granites	**Common Mineral Associations (in samples; also consult text, notes):** • Granites, • Microcline, anidine

Scientific use/significance: •	**Industrial or societal use/significance:** • Ceramics • Abrasives • Crushed Stones • Gem materials	**Environmental significance:** • Chages water quality



Mineral name: Plagioclase(K-Feldspar)

General Mineral formula: $CaAl_2Si_2O_8$ - $CaAl_2Si_2O_8$

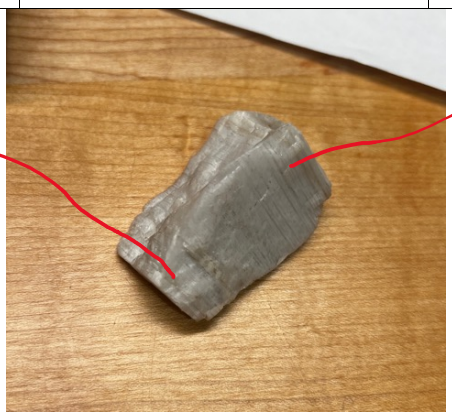
Mineral chemical class: Tectosilicate

Specific Gravity: Medium	**Crystal System:** Triclinic
Hardness: 7	**Crystal Class: bar 1**
Cleavage: 2 planes of cleavage at 90 degrees	**Crystal description (common forms, habit, etc.):** • Prismatic with rough shape • Subhedral • Albite Twinning
Luster: Waxy	
Streak: White	
Characteristic Color(s): White / Reddish	

Environment (where you find the mineral): • Igneous and metamorphic rocks	**Common Mineral Associations (in samples; also consult text, notes):** • Basalt • Olivine • Labordite, Andesine, Anorthite, Albite

Scientific use/significance: • Geochemical cycles • Used in general study of crust and sesmic activity.	**Industrial or societal use/significance:** • Aggregate, sand and gravel for concrete • Asphalt • Filler	**Environmental significance:** • Most common mineral in the crust

Mildly prismatic shape



Albite Twinning

Mineral name: Sodalite

General Mineral formula: $Na_8Al_6Si_6O_{24}Cl_2$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium	**Crystal System: Isometric**
Hardness: 5-6	**Crystal Class: bar 4 em**
Cleavage: Irregular cleavage	**Crystal description (common forms, habit, etc.):** • Amorpheous rock • Anhedral • Small crystals
Luster: Dull (vitreous in better shape)	
Streak: White	
Characteristic Color(s): Deep navy Blue	

Environment (where you find the mineral): • Alkali rich, silicon poor igneous rock • Contact metamorphic settings(lazurite / lapis lazuli)	**Common Mineral Associations (in samples; also consult text, notes):** • Lazurite(Pyroxene,calcite,pyrite) • Nepheline • Pyrite

Scientific use/significance: •	**Industrial or societal use/significance:** • Jewlery • Dye • Dimension stone to face buildings • Medicinal treatment for diabetes	**Environmental significance:** •

Deep Blue

Mineral name: Nepheline

General Mineral formula: $Na_3K(Al_4Si_4O_{16})$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium 2.5-2.6	**Crystal System: Hexagonal**
Hardness: 5-6	**Crystal Class: 6**
Cleavage: Poor cleavage / irregular fracture	**Crystal description (common forms, habit, etc.):** • Prismatic shapes that are supposedly octagonal • Subhedral
Luster: Vitreous	
Streak: White	
Characteristic Color(s): Grayish-white	

Environment (where you find the mineral): • Alkali-rich, si-poor igneous rock • Nepheline syenites	**Common Mineral Associations (in samples; also consult text, notes):** • Cancrinite, Sodalite, • Analcime • Leucite

Scientific use/significance: • Turns cloudy when treated with strong acid	**Industrial or societal use/significance:** • Glass and ceramics • Filler of paints plastics and rubber. • Aluminum extraction	**Environmental significance:** •

White color with vitreous lustre

Mineral name: Scapolite

General Mineral formula: $Na_4Al_3Si_9O_{24}Cl$-$Ca_4Al_6Si_6O_{24}CO_3$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium	**Crystal System: Tetragonal**
Hardness: 5-6	**Crystal Class: 4/m**
Cleavage: 2 to 3 planes of cleavage	**Crystal description (common forms, habit, etc.):** • Rectangular, Prismatic • Form in interlocked groups • Subhedral
Luster: Vitreous/ Greasy	
Streak: White	
Characteristic Color(s): Gray with red tinge	

Environment (where you find the mineral): • Contact and regional metamorphic rocks from calcareous sediments • Ca rich • Metamorphic	**Common Mineral Associations (in samples; also consult text, notes):** • Calcite, Titanite, Garnet, Diopside • Marialite to Meionite • Wernerite

Scientific use/significance: • Huge cage, open structure	**Industrial or societal use/significance:** • Gemstones • No industrial uses	**Environmental significance:** •

Mineral name: Leucite

General Mineral formula: $KAlSi_2O_6$
Mineral chemical class: Tectosilicate

Specific Gravity: Medium (2.45-2.5)	**Crystal System: Tetragonal (Looks isometric)**
Hardness: 5-6	**Crystal Class: 4/m**
Cleavage: Not shown, but typical no cleavage. Conchoidal fracture	**Crystal description (common forms, habit, etc.):** • Distinct Trapezohedron in mafic igneous rock • Grows singularly • Subhedral
Luster: Vitreous	
Streak: White	
Characteristic Color(s): Gray to white.	

Environment (where you find the mineral): • Low Pressures, lavas(exteraneous) • K-bearing Mafic Igenous Rock	**Common Mineral Associations (in samples; also consult text, notes):** • Plagioclase • Nepheline • Sanidine • Clinopyroxyne • Sodic amphiboles

Scientific use/significance: •	**Industrial or societal use/significance:** • Ceramics • Dental Prostheses • Decrative stone	**Environmental significance:** •

Trapezohedral shape, white