

A TABLE FOR THE IDENTIFICATION OF NEVADA'S COMMON MINERALS
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STREAK	H.	SP. GR.	COLOR	LUSTER	STRUCTURE	COMMON CRYSTAL FORMS	PLANE OF CLEAVAGE	FRACTURE	TENACITY	DIAPHANEITY	REMARKS AND SPECIAL PROPERTIES	NAME OF MINERAL	CHEMICAL COMPOSITION	PERCENTAGE OF SOLUBLE COMPONENT	OCCURRENCE	CHIEF USES
1-1	1.6		White, colorless.	Fibrous, acicular rounded masses.				Silky	Brittle.	Transparent to translucent.	Translucent in water.	Ulexite.	NaCaB ₆ O ₁₁ ·H ₂ O	42.9% B ₂ O ₃	In salt marshes and dry lake beds.	Source of borax.
1-1.5	1.5		Colorless, white, gray, purple, black.	Waxy, dull.	Massive, staurolite, dendritic, encrustation.			Conchoidal.	Brittle.	Translucent.	Translucent in water.	Opacite.	Ca ₂ (SO ₄) ₂ ·H ₂ O	75.3% Ag	A mineral of the weathered and altered portions of silver ore bodies, some of oxidation.	One of silver.
1-2.5	2.6		White, often colored, yellow, brown, black.	Dull, pearly.	Earthy, compact, clayey, mealy, friable, scaly.			Earthy.	Brittle.	Opaque.	Often plastic when wet, clayey, often, sticks to tongue.	Kaolin.	H ₄ Al ₂ Si ₂ O ₇		Formed by alteration of many clays and shales. Used for making brick, tile, porcelain, chinaware, cement, etc.	Chief constituent of many clays and shales.
1-2.5	2.7		Gray, yellowish, greenish, gray, white, etc.	Pearly, glassy, etc.	Foliated, scaly, tabular, fibrous, compact, massive.		One good.	Uneven.	Tough.	Translucent to opaque.	Spongy feel, thin, laminae, flexible, never plastic.	Talc.	H ₂ Mg ₃ Si ₄ O ₁₀		Found in place, schistose metamorphic rocks.	Massive talc has a wide use in table tops, tanks, sinks, etc.; electric insulation, powder, soap, filler.
1-2	2.9		White, apple green, grayish brownish green and white.	Pearly, glassy, etc.	Foliated, lamellar, radial, granular, compact, fibrous.		One good.	Uneven.	Flexible.	Subtransparent to opaque.	Greasy or soapy feel. Like talc but contains Al instead of Mg. Not common.	Pyrophyllite.	H ₂ Al ₂ Si ₂ O ₇		Found in schists and rocks associated with them.	Used in slate pencils and sometimes as a medium for carving.
1-2-2	1.5		Colorless, white.	Glassy.	Crystalline, massive, granular, encrustations.			Uneven.	Brittle.	Transparent.	Soluble, cooling taste, alters to white, powdery thanardite.	Muscovite.	Na ₂ SO ₄ ·10H ₂ O		A mineral of dry lake basins.	No present use.
1-2-2	1.8		Colorless, white, red, pink, yellow.	Glassy, silky, dull.	Dendritic fibrous masses, encrustations, massive.			Brittle.	Brittle.	Subtransparent, subtranslucent.	Taste of common alum.	Alumogen.	Al ₂ (SO ₄) ₃ ·18H ₂ O		Alteration product of aluminum minerals.	Possible source of alum.
1-2-2	2.1		Colorless, white.	Glassy.	Crystalline, granular, encrustations, acicular, tufted.		Good.	Uneven.	Brittle.	Transparent to opaque.	Soluble in water. Cooling taste, gives violet coloration when held in flame. Gives brown fumes when heated with potassium acid sulphate.	Niter.	KNO ₃		Associated with guano. In caves inhabited by bats. Often banded.	Fertilizer, source of nitrogen compounds.
1-2-2	2.2		Colorless, white.	Glassy.	Crystalline, granular, encrustation, massive.		Rhombohedral.	Conchoidal.	Brittle.	Transparent to opaque.	Soluble in water, gives yellow flame. Cooling taste, often silky, also like talc with potassium acid sulphate.	Selenite.	Na ₂ SeO ₃		In veins, particularly in zones of oxidation and secondary enrichment.	Fertilizer, used in manufacture of nitric acid, and KNO ₃ . Source of iodine.
1-2-2	2.3		Colorless, white.	Glassy, pearly, silky, (rarely spar).	Crystalline, massive and fine granular (alabaster), columnar, fibrous (satin spar), earthy (gypsum), compact, scaly, granular (rock gypsum), lamellar (selenite).		Two perfect; one very pronounced.	Brittle, not elastic.	Transparent (selenite), opaque.	Transparent to opaque.	Changes to a white powder when heated.	Gypsum.	CaSO ₄ ·2H ₂ O		Occurs in altered rocks, lake bed deposits, and other sediments.	Used chiefly for production of Plaster of Paris, fertilizer (land plaster), flux, cement.
1-3	2.7		Colorless, white, red.	Glassy, dull.	Crystalline, earthy, powdery.			Uneven.	Brittle.	Transparent to opaque.	Soluble in water. Cooling taste, gives violet coloration when held in flame. Gives brown fumes when heated with potassium acid sulphate.	Thénardite.	Na ₂ SO ₄		Found on shores of salt lakes and in lake beds. Alteration product of minerals.	No present use.
2	1.9		Yellowish to brassy green.	Glassy to dull.	Earthy, encrustation, stalactitic, fibrous, crystalline, powdery.			Uneven, conchoidal.	Brittle.	Transparent to opaque.	Soluble in water. Astringent, metallic taste.	FeSO ₄ ·7H ₂ O		Formed by alteration of marcasite.	No present use.	
2-2.5	1.7		Colorless, white, gray, black, white.	Dull, glassy, resinous.	Powdery, crystalline encrustation.			Brittle.	Brittle.	Transparent to opaque.	Soluble in water, sweet taste. Changes to a white powder in air.	Borax.	Na ₂ B ₄ O ₇ ·10H ₂ O	36.6% B ₂ O ₃	Dry lake beds, bedded.	Antiseptic uses, cleaning agents, soaps, used in medicines, dental chemistry. Borax acid is made from it.
2-2.5	2.2		Colorless, white, pale yellow.	Glassy.	Crystalline, granular, massive, encrustation.		Cubic.	Brittle.	Brittle.	Transparent, translucent.	Soluble in water, salty taste.	Halite.	NaCl		Sedimentary rocks and in dry lake beds.	Used as a preservative of meat, in manufacture of chemicals, as a condiment, production of glass and enamel.
2-3	2.7-3.2		Dark bluish, black, greenish black.	Submetallic, glassy.	Miscellaneous, platy, foliated, flaky, crystalline, often disseminated in rocks as scales.		One very good.	Elastic, scintillating.	Transparent.	Transparent, translucent.	Black may be pale brown and shiny. Hardly told by its line characteristic and dark color.	Biotite.	(H,K,Na)(Mg,Fe)Si ₂ O ₆		Common rock mineral especially in igneous and metamorphic rocks.	No commercial value.
2-3	2.8-3.1		Colorless, pale, gray, yellow, brown, green.	Glassy, pearly.	Miscellaneous, platy, foliated, flaky, crystalline, often disseminated in rock.		One very good.	Elastic, scintillating.	Transparent.	Transparent, translucent.	Like biotite but not strongly colored.	Muscovite.	H ₂ (K,Na)(Al,Fe)Si ₂ O ₆		Common rock mineral especially in igneous and metamorphic rocks.	Used as windows in furnaces, stoves, etc., electric insulation, used in heavy lubricants, paints, wall paper.
2-3	2.8-3.1		White, yellow, gray, brownish.	Silky.	Fine sandy aggregates foliated, fibrous.		One good.	Flexible, scintillating.	Transparent.	Transparent, translucent.	A whitish muscovite.	Selenite.	Na ₂ SeO ₃		Formed by alteration of muscovite and other minerals.	Rock forming mineral in altered rocks especially metamorphic rocks like schist.
2-3	10.5		White.	Silky, metallic.	Crystalline, granular, massive, encrustation.			Brittle.	Brittle.	Transparent to opaque.	Translucent to opaque.	Silver.	Ag	100% Ag	In veins, particularly in zones of oxidation and secondary enrichment.	One of silver.
2-4	2.7		Green, grayish green, yellowish gray, red, brown, black.	Glassy, dull, resinous, glassy.	Compact, earthy, columnar, fibrous, lamellar, foliated.			Splintery, conchoidal.	Brittle, tough.	Translucent to opaque.	Multicolored, often mottled, often soapy feel, characteristic of a grayish green color.	Breunnerite.	H ₂ MgSiO ₄		A product of rock alteration. Found in metamorphic rocks.	A fibrous form is chrysotile or commercial asbestos, vermiculite is a serpentine mineral. Translucent variety used as a gem.
2-5	2.3		Blue, greenish blue.	Glassy.	Crystalline, staurolite, reform, druse, fibrous, encrustation.			Conchoidal.	Brittle.	Transparent, translucent.	Crystalline, staurolite, reform, druse, fibrous, encrustation.	Chalcocite.	Cu ₂ SO ₄	25.9% Cu	Formed by alteration of copper ores in zone of oxidation.	Minor ore of copper.
2-5-3	2.1		Colorless, white, gray, yellowish green.	Glassy.	Massive, crystalline, encrustation, fibrous.			Conchoidal.	Brittle.	Transparent, translucent.	Soluble in water, alkaline taste. Will give bubbles of gas when treated with acid.	Na ₂ CO ₃ ·10H ₂ O		Found in most of dry lakes and in salt coatings on altered rocks.	Source of soda.	
2-5-3	2.4		White, grayish, yellow, black.	Pearly, waxy.	Foliated, massive, fibrous.		One good.	Uneven.	Flexible to elastic, glassy, scintillating.	Transparent, translucent.	Much like some of talc. Alters to hydrous talc.	Brucite.	Mg(OH) ₂	69% MgO	In metamorphic limestone, dolomite, and in serpentine.	Source of magnesia for steels.
2-5-3	2.4		Colorless, white, brown, yellow, black, red.	Glassy, pearly.	Massive, crystalline, lamellar, nodular, granular, fibrous, earthy, reform.	Tabular prismatic.	Good cleavage.	Uneven.	Brittle.	Transparent to opaque.	Usually forms as a soft heavy mineral.	Barite.	CaSO ₄ ·H ₂ O		Common gangue in veins, hot and cold spring deposits. Replacement in limestone.	Used in manufacture of paints, glass, lithium, artificial fluor, used as paper filler. Source of barium compounds.
2-5-3	2.7		Colorless, white, yellow, black, red.	Glassy to dull.	Crystalline, massive, granular, stalactitic, druse, earthy, encrustation, reform.	Rhombohedral, prismatic and pyramidal forms.	Three, perfect rhombohedral.	Brittle.	Transparent to opaque.	Transparent to opaque.	Usually shows the rhombohedral cleavage, will give off gas when treated with cold acid like vinegar. Chalk is an earthy variety. Mica may be converted to barite.	Calcite.	CaCO ₃	56% CaO	Chief constituent of limestone. Product of rock weathering and alteration like dolomite.	As limestone it is used as a building material, for manufacture of lime and cement, fertilizer. Also many uses.
2-5-3	2.7		Colorless, white, yellow, black, red.	Aduminate to glassy.	Crystalline, granular, nodular, stalactitic.		Good.	Conchoidal.	Brittle.	Transparent to opaque.	Often coated black, occurs as a heavy white or yellow scintillating in acid.	Anhydrite.	CaSO ₄	43.9% Pb	Formed by oxidation of lead sulfides in zone of oxidation. Occurs in upper part of veins.	One of lead.
2-5-3	3		White, bluish, greenish, reddish, white, black.	Glassy, pearly.	Crystalline, granular, massive, fibrous.		Conchoidal.	Tough.	Transparent to opaque.	Transparent to opaque.	Often has a sugary or marble-like appearance and most often pearly in luster.	Anhydrite.	CaSO ₄		Occurs in upper parts of ore veins, in beds and in lake deposits.	Used as a fertilizer, as a medium for ornaments and statuary. Much like alabaster gypsum.
2-5-3	6.5		White, yellow, brown.	Glassy to dull.	Crystalline, granular, earthy, fibrous.			Conchoidal.	Brittle.	Transparent to opaque.	One of heavy white concentrates on panning for gold. Interferes with cold acid.	Cerussite.	PbCO ₃	77.9% Pb	Occurs in zones of oxidation and secondary enrichment.	One of lead.
2-5	2.2		White.	Vitreous, pearly, dull.	Acicular, earthy, powdery, amorphous.			Opac.	Opac.	Opac.		Hydroxanthite.	3MgO·Ca(OH) ₂ ·H ₂ O	42.9% MgO	Alteration product of brucite.	Possible source of magnesia for steels, cement, etc.
2-5	2.9		Colorless, white, gray or tinted.	Glassy.	Crystalline, columnar, concentric, stalactitic, banded, oolitic, reform, encrustation.	Prismatic, needle-like.	One good.	Brittle.	Transparent, translucent.	Transparent, translucent.	Reformers in cold acid but is usually needle-like or columnar and does not have rhombohedral cleavage.	Aragonite.	CaCO ₃	54% CaO	Bedded with gypsum, hot and cold spring deposits. Deposited from subsurface waters.	Can be used for calcite.
2-5-4	2.7		White, pink, red.	Glassy, pearly.	Crystalline, compact, granular, fibrous, earthy.	Rhombohedral.	One plane.	Uneven, conchoidal.	Brittle.	Transparent, translucent.	Much like anhydrite but contains water and is harder.	Alumina, alum stone.	K ₂ SO ₄ ·Al ₂ (SO ₄) ₃ ·4H ₂ O		Occurs in cracks and veins in acidic lavas. A product of rock alteration.	Source of potash and aluminum. Almost a natural alum.
2-5-4	2.9		Colorless, white, tinted.	Glassy, pearly.	Crystalline, granular, massive.	Rhombohedral.	One plane.	Brittle.	Transparent, translucent.	Transparent, translucent.	Will not effervesce in cold acid as calcite does. Often granular, rhombohedral, massive, etc.	Dolomite.	CaMg(CO ₃) ₂	39.2% MgO	Common gangue and sedimentary rock mineral. In limestone, and in veins.	Source of magnesium salts. Building and decorative stone.
2-5-4	3.1		Colorless, white, brown.	Glassy to dull.	Crystalline, dense, massive, granular.			Conchoidal (when dense).	Brittle.	Transparent to opaque.	Often nacreous. Much like chert. Does not effervesce in cold acid.	Magnesite.	MgCO ₃	55.9% MgO	Bedded in sediments. In veins, in metamorphic rocks.	Used as source of magnesium compounds, in brinks for furnace linings, in paper industry, for glass, cement.
2-5-4	3.7		Colorless, white, gray, yellow, black.	Glassy, greeny.	Crystalline, compact, acicular, radiating, fibrous, granular.		Imperfectly prismatic.	Conchoidal.	Brittle.	Transparent, translucent.	Much like anhydrite, gives a deep crimson tinge to an alcohol flame when hydrochloric acid is added.	Stenohalite.	SiCO ₃	78.1% SiO ₂	Occurs in limestones. Rare in Nevada.	Source of strontium compounds.
2-5-4	3.9		White, usually brown, yellow, black.	Glassy to dull.	Crystalline, granular, massive, botryoidal, nodular, earthy.		Rhombohedral.	Conchoidal.	Brittle.	Transparent to opaque.	In cold acid.	Hydroxanthite.	3MgO·Ca(OH) ₂ ·H ₂ O	42.9% MgO	A bedded and nodular iron ore, a gangue in upper parts of veins.	A minor ore of iron. Often contains enough manganese for use in steel production.
2-5-4	2.4		Colorless, white, yellowish, gray.	Glassy to dull.	Crystalline, granular, massive.		One good.	Uneven, subconchoidal.	Brittle.	Transparent to opaque.	Often porcelaneous or chalky.	Cerussite.	CaSO ₄ ·5H ₂ O	52.9% PbO	In irregular beds associated with basalt and limestone.	Source of borax and boracic acid.
2-5-4	3.5		Colorless, white, yellow, black, red.	Glassy, pearly.	Crystalline, granular, encrustations, botryoidal.		Rhombohedral.	Uneven.	Brittle.	Transparent to opaque.	Much like siderite but pink.	Rhodochrosite.	MnCO ₃	47.9% Mn	Common gangue in veins. Bedded, often result of hydrothermal alteration.	Source of manganese compounds. Occasionally used as a gem.
2-5-4	3.5		Colorless, white, green, purple, blue, violet.	Glassy, pearly, silky.	Crystalline, massive, granular, druse, disseminated.	Cubic, octahedral.	One good.	Uneven.	Brittle.	Transparent, translucent.	Fine apart on heating, shows good cleavage.	Zincite.	ZnCO ₃		A common gangue in veins, in beds, in rocks subjected to igneous vapors.	Source of fluorine compounds, flux in iron smelting, used in enamel, lacquer, as a gem.
2-5-4	3.5		White, greenish, bluish, yellowish, brownish.	Glassy, pearly.	Massive, granular, botryoidal, fibrous, stalactitic.	Tabular.	Two good.	Uneven to subconchoidal.	Brittle.	Transparent to opaque.	One of heavy white concentrates on panning for gold. Interferes with cold acid.	Calamine.	H ₂ ZnSiO ₃	54.2% Zn	A secondary mineral usually found in limestones. Derived from other zinc ore.	Zinc ore.
2-5-4	4.1		Nearly white to pale yellow.	Acicular.	Acicular.			Brittle.	Brittle.	Opac.		Cerussite.	PbCO ₃	77.9% Pb	Alteration product of stibnite.	Source of stibnite for jewelry, scientific and industrial uses.
2-5-4	14-19		White, gray, black.	Silky, metallic.	Granular, earthy, disseminated, crystalline.			Hardly.	Malleable, ductile, scintillating.	Opac.	Usually alloyed with other metals, sometimes magnetic.	Platinum.	Pt	100% Pt	In placers, river gravels, in basic dark-colored igneous rocks.	Source of platinum for jewelry, scientific and industrial uses.
2-5-4	3.6		Blue, gray, yellow, green, brown.	Glassy, pearly.	Bedded, platy, crystalline, columnar.		One excellent.	Splintery.	Brittle.	Transparent, translucent.	Hardly truly dry in long direction and seven at right angles to it.	Cyanite, kyanite.	AlSiO ₃		A mineral of metamorphic rocks as gneisses and schists.	Used in manufacture of porcelain and as a gem.
2-5-4	6		White, yellow, brown, green, red.	Glassy.	Crystalline, massive, granular, disseminated, reform.	Tabular crystals, prismatic.	One good.	Uneven.	Brittle.	Transparent to opaque.	Yellow powder produced when heated in nitric acid.	Scheelite.	CaWO ₄	88.6% W ₂ O	Occurs in gold quartz veins and at contact of veins with limestone.	One of tungsten and its compounds.
2-5-4	4.5		Colorless, gray, yellow, green, brown.	Glassy, pearly.	Botryoidal, stalactitic, encrustation, reform, cellular, earthy, crystalline.		Uneven, splintery.	Brittle.	Transparent to opaque.	Transparent to opaque.	Usually hard to detect in Nevada ore.	Silicofluorite.	ZrSiF ₆	52.1% Zr	Occurs in upper oxidized part of veins as residuum on limestone, and in veins etc.	As one of silice.
2-5-4	3.2		Colorless, green, brown, red, yellow.	Glassy to resinous.	Crystalline, granular, nodular, massive, compact.	Prisms, tabular.		Uneven, conchoidal.	Brittle.	Transparent to opaque.	Occurs in beds with limestone and shales. Often brown but will not scratch glass easily if it is.	Azulaite rock phosphate.	3Ca ₃ (PO ₄) ₂ ·CaF ₂		Common accessory mineral of igneous rocks. Contact metamorphic mineral.	Fertilizer, source of phosphorus and its compounds.
2-5-4	2.5		Yellow, green, brown, red, yellow.	Aduminate to resinous.	Crystalline, disseminated, lamellar, massive, compact.	Wedge-like.	Two.	Conchoidal.	Brittle.	Transparent to opaque.	Brucite commonly used in the form of a scale on walls of cavities in acid igneous rocks and as an alteration product of other silicate minerals.	Titanite, sphene.	CaTiSiO ₆		Common accessory mineral of igneous rocks. Contact metamorphic mineral.	Transparent variety used as a gem.
2-5-4	2.5		Bluish green to greenish blue.	Waxy, dull.	Botryoidal, stalactitic, reform, disseminated, encrustation.			Conchoidal.	Brittle.	Transparent to opaque.	See copper test under auriferous.	Turquoise.	H ₂ Al ₂ (OH) ₂ ·Cu(OH) ₂ (PO ₄) ₂		An alteration product.	Gem mineral.
2-5-4	5		Dark green green.	Glassy, silky.	Crystalline, bladed, fibrous, columnar, granular.		Prismatic.	Uneven, splintery.	Brittle.	Transparent to opaque.	Green green color characteristic.	Actinolite.	(Mg,Fe)Ca ₂ (SiO ₃) ₂		A metamorphic rock forming mineral.	One of copper, used for ornamental and decorative purposes.
2-5-4	2.1		Colorless, silky, red, yellow, blue, green, black, brown.	Pearly, waxy, dull.	Massive, botryoidal, stalactitic, reform, earthy.			Conchoidal.	Brittle.	Transparent to opaque.	Earthy variety as disseminated earthy ore as soft as 1. Massive opal checks in heavy.	Opal.	SiO ₂ ·H ₂ O		Occurs as a hot spring deposit (geyserite, or silice), as an alteration product, and in sedimentary beds.	Used for gems, ornaments. Earthy varieties as tripolite and diatomite used as scouring agents, fillers, in concrete, etc.
2-5-4	2.5-3.8		Colorless, white, cream, red, cream, gray.	Glassy.	Crystalline, massive, disseminated.		Two good.	Uneven.	Brittle.	Transparent to opaque.	Often striated, sometimes iridescent, especially gray lustrous. Transparent variety is axinite.	Feldspar.	Al ₂ SiO ₅		Common rock mineral.	Transparent variety used as gem, hard varieties used as abrasives.
2-5-4	3.8		Gray, yellowish, greenish, brown, black.	Glassy, silky, gray.	Acicular, fibrous.		One good.	Uneven.	Brittle.	Transparent, translucent.	Surface often coated with softer minerals. Usually brown and hard enough to scratch glass.	Sillimanite, fibrolite.	AlSiO ₃		A metamorphic rock, schist forming mineral.	Spark plug porcelain.
2-5-4	3.4-4.3		Brown, red, yellow, green.	Glassy, resinous.	Crystalline, granular, disseminated.	Dolomitic, massive, most common.		Uneven, conchoidal.	Brittle.	Transparent, translucent.	Surface often coated with softer minerals. Usually brown and hard enough to scratch glass.	Garnet.	(Ca,Mg,Fe,Mn) ₂ (Al,Fe)Si ₂ (SO ₄) ₂		In veins and as a metamorphic mineral, especially in contact metamorphic limestone.	Transparent variety used as gem, hard varieties used as abrasives.
2-5-4	3.5		Yellowish, green, brown, red, yellow, green.	Glassy.	Crystalline, granular, bladed.		One good.	Brittle.	Brittle.	Transparent to opaque.	Its yellowish green to olive green color, columnar or needle-like structure, and glassy luster are characteristic.	Epidote, pistachite.	Ca(Al ₂ Fe ₂ Si ₂ OH) ₂ (SO ₄)		A mineral of metamorphic rocks. Often in contact metamorphic limestone.	Transparent variety used as gem, hard varieties used as abrasives.
2-5-4	3.8		Colorless, bottle green, yellow, green, brown.	Glassy.	Crystalline, granular, disseminated.			Conchoidal.	Brittle.	Transparent, translucent.	Often sugary, friable, occasionally found in metamorphic limestone.	Olivine, peridot.	(Mg,Fe) ₂ SiO ₄		Rock forming mineral of basic igneous rocks.	Transparent green peridot is a gem.
2-5-4	7		Colorless, white, pink, smoky, red, gray, green, brown, etc.	Glassy, waxy, dull.	Crystalline, granular, nodular, banded, sinter, oolitic, botryoidal, massive, etc.	Pyramid-like faces and prisms.		Brittle.	Brittle.	Transparent to opaque.	Crystal faces often striated, the peridotine variety, chert is also common. In limestone. Friable, insoluble.	Quartz.	SiO ₂		Occurs in all kinds of rocks and under many conditions. Common vein mineral.	Used as abrasives, as building material as in sand and sandstones and quartzite, in pottery, jewelry, etc.
2-5-4	7.3		Purple, blue, pink, green, white, colorless.	Glassy, dull.	Fibrous, columnar, acicular, euhedral, massive.	Prisms.	One good.	Even.	Brittle.	Transparent, translucent.	Often sugary, friable, occasionally found in metamorphic limestone.	Demantoid.	BeAl ₂ SiO ₆		In igneous and metamorphic granular rock.	Used in manufacture of spark plug porcelain.
2-5-4	7-7.5		Green, green, pink, gray, yellow, brown. Usually bladed.	Glassy, pithy.	Crystalline, massive, disseminated.	Long six-sided prisms.		Uneven, conchoidal.	Brittle.	Transparent to opaque.	Crystals vertically striated and usually black, long and six-sided.	Tourmaline.	Complex borosilicate.		In veins, and granitic igneous rocks. At contact of granite and limestone.	Transparent variety used as a gem and in optical instruments.
2-5-4	7.5		Gray, brown, reddish brown, black.	Glassy, dull.	Crystalline, granular, columnar.	Nearly square prisms.		Conchoidal.	Brittle.	Transparent to opaque.	Surface often coated with softer minerals.	Andalusite.	Al ₂ SiO ₅		A metamorphic mineral at contact of granite with clay and shale.	Transparent varieties are used as gems. Used in production of spark plug porcelain and refractory bricks.
2-5-4	9		Dark blue, pale blue, greenish blue.	Aduminate, glassy.	Crystalline, granular, disseminated.	Pyramidal, prisms.		Conchoidal.	Brittle.	Transparent, translucent.	Crystals striated, very hard.	Corundum, emery.	Al ₂ O ₃		Occurs in igneous rocks and as a metamorphic mineral in limestone.	Used as an abrasive. Transparent red variety is rubellite. Transparent blue variety is sapphire.
2-5-4	2.6		Dark to pale steel blue.	Glassy, dull.	Crystalline, earthy, massive, botryoidal, reform, encrustation.	Tabular.		Conchoidal.	Brittle.	Transparent to opaque.	Soluble in water, metallic taste, becomes coated with iron. Yields blue solution.	Chalcocite, blue vitriol.	CaSO ₄ ·H ₂ O	55.9% Cu	Occurs in mine waters and formed by oxidation of copper.	Minor ore of copper.
2-5-4	3.8		Green, blue, brown, black.	Glassy, pearly.	Compact, reform, earthy, globular, encrustation.			Conchoidal.	Brittle.	Transparent to opaque.	Like other copper minerals it will dissolve in acid and yield a blue solution on addition of ammonia water.	Azulaite.	3Ca ₃ (PO ₄) ₂ ·CaF ₂	52.1% Zn	Found in upper part of copper veins, alteration product of copper sulfides.	Sometimes used as a gem. One of copper, used for ornamental and decorative purposes.
2-5-4	3.9		Bright green, areas greenish yellow.	Aduminate, silky, dull.	Encrustations, massive, concentric, reform, botryoidal, stalactitic, earthy, fibrous, acicular.			Conchoidal.	Brittle.	Transparent to opaque.	See copper test under auriferous.	Malachite.	Cu ₂ (OH) ₂ (CO ₃)	57.5% Cu	Occurs in upper part of copper veins, alteration product of copper sulfides.	Minor ore of copper.
2-5-4	3.9		Greenish green, dark green.	Glassy, pearly.	Crystalline, druse, fibrous.	Prisms.	One good.	Splintery.	Brittle.	Transparent, translucent.	See copper test under auriferous.	Brochantite.	Cu ₂ (OH) ₂ (CO ₃)	56.2% Cu	A mineral formed by alteration of	