

PHYSICAL PROPERTIES OF MINERALS

OBSERVATIONS

- 1. Form :
- 2. Colour :
- 3. Streak :
- 4. Lustre :
- 5. Fracture :
- 6. Cleavage :
- 7. Hardness :
- 8. Specific Gravity :
- 9. Degree of Transparency :
- 10. Special Property :

INFERENCE

THEORITICAL PROPERTIES

- 1. Chemical Composition :
- 2. Crystal System :
- 3. Nature of Origin :
- 4. Occurrence :
- 5. Uses :
- 6. Remarks :

	FORM	COLOR	STREAK	LUSTRE	FRACTURE	CLEAVAGE	HARDNESS	DENSITY/SG	TRANSPARENCY	CHE.COMP	USES
ASBESTOS	Fibrous	White/pale	White	Silky	Ueven to hackly	Present	2.5 to 3	Medium(2.52-2.65)	Thin fires are translucent	$Mg_2Si_2O_5(OH)_4$	Ingredient in cement ,Recycled to hardness silicate glas
BAUXITE	Pisolitic,spongy,granular or massive	Dirty white,gre,yellow or brown	Variable	Dull	Uneven	Absent	2 to 4	Medium-(2-3.5)	Opaque	$Al_2O_3 \cdot 2H_2O$	Manuf of aluminum metal,refractors,also used as an abrasive
BARYTES	Tabular,fibrous,masive	Colorless,white,light shades of blue,green	White	Vitreous,pearly	uneven	Present ,parallel to base & prism faces	3 to 3.5	4.3-5	Transparent to opaque	$BaSO_4$	77% worldwide used as weighting agent for drilling fluids in oil & gas exploration to suppress high formation pressures
CALCITE	Rhombic	White or colorless	White	Vitreous to pearly	Conchoidal	3 sets at 105 & 75	3	Medium-2.7	Trasparent toTranslucent	$CaCO_3$	Manuf of Cement,as a Flux in fertilizers
CORUNDUM	Massive	Dark brownish,grey or pale	White	Sub-vitreous	Conchoidal to uneven	Absent	9	High-4	Translucent to opaque	Al_2O_3	synthetic corundum is also used to produce mechanical parts (tubes, rods, bearings, and other machined parts)
FLINT	Nodular & Tabular	Yellowish brown	White	Waxy ,Dull	Sub conchoidal	Absent	7	2.65	Opaque & Translucent	-	Used as Tools or cutting edges,As a building material,Ceramics & Flint bracelets were known in Ancient Egypt
CHROMITE	Massive,Crystalline,granular	Black	Brown	Sub-Metallic	uneven	Absent	5.5	High(4.5 to 4.8)	Opaque	(Fe, Mg)Cr.o.	Chief ore of chromium,used as refractory material, because it has a high heat stability
KYANITE	Bladed	Blue	White	Vitreous to pearly	Ueven to hackly	Present 2 sets	4.5 to 5	Medium 3.67	Translucent along thin edges	Al_2SiO_5	Kyanite is used primarily in refractory and ceramic products,It is also used in electronics, electrical insulators and abrasives.
GALENA	Cubic or Granular	Lead grey and silvery	Lead grey	Metallic	Rearly found like Subconchoidal	3 sets,cubic	2.5 to 3.75	High-7.2 to 7.6	Opaque	Pds	Galena is a semiconductor with a small bandgap of about 0.4 eV which found use in early wireless communication systems. For example, it was used as the crystal in crystal radio sets, in which it was used as a point-contact diode to detect the radio signals. The galena crystal was used with a safety pin or similar sharp wire, which was known as a "cat's whisker".
GARNET	Massive,Crystals	Pink or Red	White	Vitreous	conchoidal to uneven	Absent	6.5 to 7.5	Medium(3.1 to 4.3)	Translucent along sharp edges	$X_2Y_3(SiO_4)_3$	Used as gem stone,Garnet sand is also used for water filtration media.
HORNBLLENDE	Prismatic	Dark Green/ Whitesh	White	Vitreous to dull	Uneven	Present	5 to 6	Medium(2.9)	Opaque	$Ca_2(Mg, Fe, Al)_7(Si_8O_{22})(OH)_2$	It is crushed and used for highway construction and as railroad ballast. It is cut for use as dimension stone
MAGNETITE	Granular or massive	Iron Black	Cherry red or black	Metallic to sub-metallic	Uneven	Absent	5 to 6	High-5.3	Opaque	Fe_3O_4	Imp iron ore mineral & strongly magnetic
MANGESITE	Massive	White	White	Dull	Even-uneven,sub-conchoidal	Absent	4 to 5	Medium(3-3.2)	Opaque	$MgCO_3$	
MICA	Fibrous	Silver,Gray,Brown,Black	White,Colorless	pearly, vitreous	Flaky	Present	2.5 to 3	Medium(2.8-3.1)	Trasparent to opaque	$AB_2-3(X, Si)4O_{10}(O, F, OH)_2$	the principal mica used by the electrical industry, is used in capacitors that are ideal for high frequency and radio frequency

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DOLOMITE	Massive	White, gray to pink	White	Vitreous to pearly	Conchoidal	Perfect	3.5 to 4	Medium(2.84–2.86)	Opaque	CaMg(CO ₃) ₂	Dolomite is used as an ornamental stone, a concrete aggregate, and a source of magnesium oxide & important petroleum reservoir rock

