

2.4 DESCRIPTION OF INDIVIDUAL MINERALS

2.4.1 PYROXENE GROUP

Sl.No	Mineral Property	Hypersthene (Pyroxene Group)	Augite (Pyroxene Group)
1.	Crystal system	Orthorhombic	Monocline
2.	Colour	Green, greenish black	Variable greyish green or black is predominant
3.	Streak	Colourless	Colourless
4.	Luster	Submetallic	Vitreous
5.	Hardness	5-6	5-6
6.	Specific gravity	3.4-3.5	3.1-3.6
7.	Cleavage	Prismatic	2 sets, perfect
8.	Fracture	Uneven	Uneven
9.	Optical properties	Optically negative	Optically positive
10.	Chemical composition	Silicates of Fe and Mg, with Al in some varieties.	A complex silicate of Ca, Mg, and Fe
11.	Form / structure	Massive form	Crystalline
12.	Special properties	-	-

2.4.2 MICA GROUP

Sl.No	Mineral Property	Hornblende (Amphibole)	Muscovite
1.	Crystal system	Monocline	Monocline
2.	Colour	Black	Colourless or pale yellow
3.	Streak	Colourless	Colourless
4.	Luster	Vitreous to pearly	Vitreous to pearly
5.	Hardness	5-6	2.0-2.5
6.	Specific gravity	3.0-3.4	2.7-3.0
7.	Cleavage	2 sets, perfect	1 set, perfect
8.	Fracture	Uneven	-
9.	Optical properties	Optically negative	Optically negative
10.	Chemical composition	Complex silicates of Ca, Mg and Fe	A complex silicate of K and Al
11.	Form / structure	Crystalline	Foliated / flaky
12.	Special properties	-	Insulator

2.4.3 BIOTITE and CALCITE

Sl.No	Mineral Property	Biotite	Calcite
1.	Crystal system	Monocline	Hexagonal (Rhombohedral)
2.	Colour	Black	White or Colourless
3.	Streak	Colourless	White
4.	Luster	Pearly	Vitreous to sub vitreous
5.	Hardness	2.5-3.0	3
6.	Specific gravity	2.7-3.1	2.71
7.	Cleavage	1 set, perfect	3 sets, perfect
8.	Fracture	-	-
9.	Optical properties	Optically negative	Optically negative
10.	Chemical composition	Complex silicates of Mg, Fe, Al and K	CaCO ₃
11.	Form / structure	Foliated / flaky	Crystalline
12.	Special properties	Insulator	Iceland spar-transparent variety used in optical instruments

2.4.4 GYPSUM

Sl.No	Mineral Property	Gypsum
1.	Crystal system	Monoclinic
2.	Colour	Colourless, white, grey
3.	Streak	Colourless
4.	Luster	Silky
5.	Hardness	2
6.	Specific gravity	2.3
7.	Cleavage	-
8.	Fracture	Uneven
9.	Optical properties	-
10.	Chemical composition	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
11.	Form / structure	Fibrous
12.	Special properties	1. For making plaster of Paris. 2. Used as fertilizers. 3. Filler in various materials. 4. Used in cement manufacture