



SNS COLLEGE OF TECHNOLOGY
(AN AUTONOMOUS INSTITUTION)
COIMBATORE-35

II YEAR / III SEMESTER
19CET201-ENGINEERING GEOLOGY



CLAY MINERALS

Clay minerals are the major constituent of fine-grained sediments and rocks (mudrocks, shales, claystones, clayey siltstones, clayey oozes, and argillites). They are an important constituent of soils, lake, estuarine, delta, and the ocean sediments that cover most of the Earth's surface.



MICA

The mineral has been known for millennia: Mica was first mined in India about 4,000 years ago, where it was used primarily in medicines. The Mayans used it for decorative effect in stucco to make their temples sparkle in the sun. Today it is used in everything from electrical products to makeup

Mica is a generic name for a group of complex hydrous potassium-aluminum silicate minerals that differ somewhat in chemical composition; examples are biotite, lepidolite, muscovite, phlogopite, and vermiculite.



Muscovite vs Biotite

More Information Online WWW.DIFFERENCEBETWEEN.COM

	Muscovite	Biotite
DEFINITION	Muscovite is a type of hydrated phyllosilicate mineral of aluminium and potassium	Biotite is a phyllosilicate mineral that mainly contains magnesium and potassium
CHEMICAL COMPOSITION	Mainly potassium and aluminium	Mainly potassium and magnesium
CHEMICAL FORMULA	$KAl_2(AlSi_3O_{10})(FOH)_2$	$K(Mg,Fe_3)AlSi_3O_{10}(F.OH)_2$
MORTALITY RATES	Appears white or colourless, but it can have tint such as grey, brown, green, etc.	Appears in dark brown or greenish-brown colour
TENACITY	Elastic	Brittle to flexible
USES	Important as a component in manufacturing fireproofing materials, insulating materials, as a lubricant, etc.	Useful in determining the age of rocks and in assessing the temperature history of metamorphic rocks.



Mohs Scale of Mineral Hardness



1-Talc



2-Gypsum



3-Calcite



4-Fluorite



5-Apatite



6-Feldspar



7-Quartz



8-Topaz



9-Corundum



10- Diamond

GeologyIn.com



**Mohs relative
hardness**

**Mineral
example**

Scratch test

1	Talc	Scratch with fingernail
2	Gypsum	Scratch with fingernail
3	Calcite	Scratch with copper penny
4	Fluorite	Easily scratch with knife
5	Apatite	Scratch with knife blade
6	Orthoclase	Scratch with steel file
7	Quartz	Scratch with window glass
8	Topaz	Scratches quartz
9	Corundum	Scratches topaz
10	Diamond	Scratches corundum



THANK YOU...