

Muscovite

Formula: $KAl_2(AlSi_3O_{10})(OH)_2$
– for K = Na, Rb
– for Al = Mg, Fe, Mn
– Variable composition –variable optical properties

RI
– $n_{\alpha} = 1.552 - 1.580$
– $n_{\beta} = 1.582 - 1.620$
– $n_{\gamma} = 1.587 - 1.623$

Relief
– moderate positive

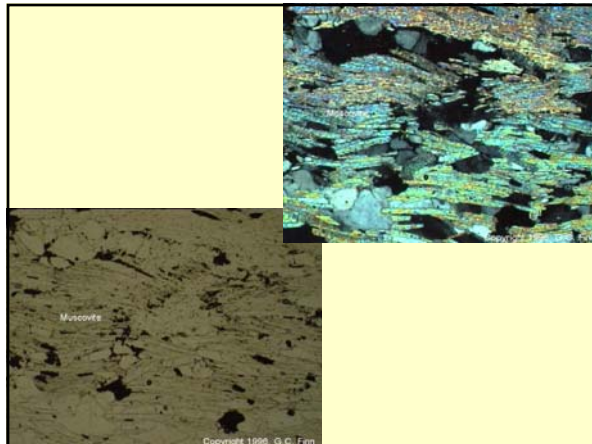
Birefringence
– 0.036-0.049

Muscovite

Colour and Pleochroism
– Colourless, non pleochroic

Interference Colours
– vivid second order blues and greens

Interference Figure, Optic Sign, 2V
Biaxial
negative
30-47°



Muscovite

Form

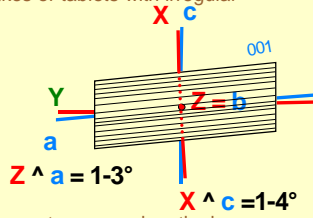
- found as micaceous flakes or tablets with irregular outlines

Cleavage

- perfect on {001}

Optic Orientation

- parallel extinction, cleavage traces are length slow



Muscovite

• Occurrence

- common in a wide variety of metamorphic rocks, felsic igneous rocks and as detrital grains in sedimentary rocks

Alteration

- not generally altered

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Distinguishing Features

- Colourless
- Parallel or nearly parallel extinction
- "Bird's eye" extinction
- Biaxial negative, $2V_x = 30-47^\circ$
- 2nd Order blue/green interference colours

