

Actinolite-Tremolite

Actinolite - Tremolite resemble hornblende in all respects, except:

1. Tremolite is lighter coloured and has lower R.I.
2. Actinolite lower R.I. and smaller extinction angle

Actinolite-Tremolite

Colour and Pleochroism

- colourless to pale green to dark green, darker colours and stronger pleochroism associated with high Fe contents
- X = colourless, pale yellow green
- Y = pale yellow-green, pale blue-green
- Z = pale green, green, blue-green

Actinolite-Tremolite

• Refractive Index

$$n_{\alpha} = 1.599-1.688$$
$$n_{\beta} = 1.612-1.697$$
$$n_{\gamma} = 1.622-1.705$$

• Relief

moderate to high positive

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Birefringence and Retardation

- $\delta = 0.017-0.027$
- Maximum interference colours are upper 1st to mid 2nd order

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Interference Figure

- biaxial negative
- $2V_x = 75-88^\circ$

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Form

- occurs as columnar, bladed or acicular grains, elongated parallel to c axis, may be fibrous, basal sections are diamond shaped, with typical amphibole cleavage

Cleavage

- two amphibole cleavages on {110}, intersect at 56 and 124°

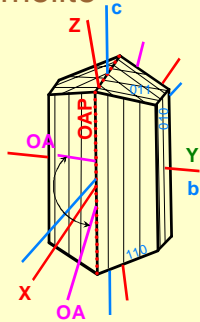
Twinning

- simple and lamellar twins

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Optic Orientation

- $X \wedge a = +5^\circ$ to -6°
- $Y = b$,
- $Z \wedge c = +10^\circ$ to $+21^\circ$
- optic plane = (010)
elongate sections are length slow



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Alteration

- alters to talc, chlorite and carbonates

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Occurrence

- common occurrence in contact and regional metamorphosed limestone and dolomite
- Also found in metamorphosed mafic and ultramafic rocks
- It is the common fine-grained alteration product of pyroxenes

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Distinguishing Features

- Can and will be confused with hornblende
- actinolite differs from hornblende by:
 - Higher $2V$
 - Lower extinction angle
 - Less pleochroic

