

Earth Materials: Tecto and Phyllosilicateso

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1 Potassium Feldspar (KSpar)

Not quite as abundant as plagioclase feldspar, but still extremely abundant.
Kind of like quartz.

1.1 Environment of KSpar

- Silica Rocks (felsic)
 - granites
 - rhyolites
- High temperature metamorphic rocks (granite)
- Sedimentary (ex: arkose sandstone)
- Pegmatite

1.2 Chemical Substitutions

- Fe^{3+} sub in for Al^{3+} , gives it a color characteristic of feldspar :revisit:
- Pb can sub in green color and produce "Amazonite"

2 Plagioclase Feldspar

- its everywhere
- in more felsic rocks: Na-rich with Low Temperatures
- in more mafic rocks: Ca-rich with High Temperatures

3 Zeolite

- 80 naturally occurring zeolites.
- All zeolites contain structural water H_2O
 - structural water is always lost in the formation
- General Formula: $M_x D_y (\text{Al}_{x+2y} \text{Si}_{n-x-2y} \text{O}_{2n}) \cdot m \text{H}_2\text{O}$
 - $\text{M} = \{\text{Na}, \text{K}\}$

- $D = \{\text{Ca, Mg, Ba}\}$
- 4-fold site = $(Al_{x+2y}Si_{n-x-2y}O_{2n})$
- The structure is a linked framework of :revisit: with long tunnels
- in zeolite:
 - $\{\text{Na, Ca, H}_2\text{O}\} \dots$ etc are loosely bound and exchangeable in the tunnels.
 - desiccant
 - water quality $\text{Na}^+ \rightleftharpoons \text{Ca}^{2+}$
 - contaminate clean up

3.1 Common Zeolites

Amalcine	(Na)	isometric		
Chabazite	(Ca, Na, K)	Triclinic		
Heulandite	(Na, Cu)	Mono		
Stilbite	(Na, Ca)	Mono	[elongated	blocks]
Natrolite	(Na)	Ortho	[radiationg	fibres]