
Occurrence of Clinoptilolite and Mordenite in Tertiary Calc-Alkaline Pyroclastites from Sardinia (Italy)

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Abstract: Clinoptilolite and mordenite occur as diagenetic products of medium-grained, moderately welded and poorly sorted pyroclastic flows belonging to the Tertiary calc-alkaline volcanism of Sardinia. Both clinoptilolite and mordenite occur within pyroclastic flows of the same stratigraphic unit. Mordenite frequently occurs in the late volcanic sequences from Anglona area (northern Sardinia). Textural features indicate that zeolites are products of glass alteration. Thin sections show either complete alteration of glassy shards by clinoptilolite and mordenite or unaltered shards with clinoptilolite or mordenite confined to the cineritic matrix. During the zeolitization process, interacting fluids were important in the mobilization and distribution of alkali elements. The compositional variations of clinoptilolite and mordenite within a single sample showed trends that suggest steps in a continuous process probably evolving towards equilibrium conditions.

Key Words: Clinoptilolite • Fluid/Rock Interaction • Mordenite • Opal-CT • Tertiary Pyroclastic Flows

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