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HIGHLIGHTS AND BREAKTHROUGHS

Reaction pathways toward the formation of dolomite

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Abstract: Little is known about the physico-chemical processes that lead to the formation of dolomite in nature. Issues requiring further investigation include: (1) the role played by amorphous carbonate precursors, (2) the mechanisms of transformation of such precursors into proto-dolomite and dolomite, and (3) the controlling factors of the kinetics of the reactions that eventually result in the crystallization of highly ordered dolomite. In the article by Rodriguez-Blanco et al. in this issue entitled "A route for the direct crystallization of dolomite," the authors present experimental evidence of a three-stage process that, starting from the precipitation of an amorphous magnesium calcium carbonate, produces proto-dolomite via spherulitic growth, and subsequently ordered dolomite. This article provides new insights into reaction pathways toward the formation of dolomite. **Keywords:** Dolomite, amorphous precursors, dissolution-crystallization, reaction pathways, reaction kinetics

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ture range from 60 to 220 °C. Only the induction times for the transformation reaction are strongly dependent on temperature. These significant conclusions suggest that the proposed reaction mechanism for dolomite formation may operate at lower temperatures, but with a much slower kinetics (Usdowski 1994).

The complete elucidation of the *dolomite problem* undoubtedly requires further investigation. The article by Rodriguez-Blanco et al. (2015) shows that careful experimental work is fundamental for determining the potential pathways toward the crystallization and ordering of dolomites in nature.

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