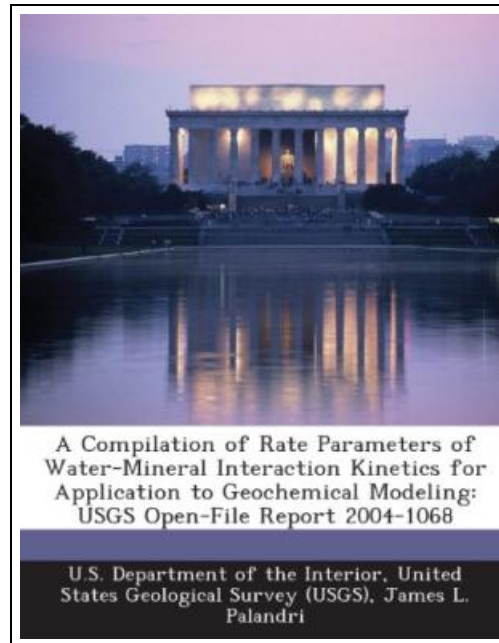


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Reviews

Basically no phrases to clarify. It really is written in straightforward phrases rather than hard to understand. You will not sense monotony at any moment of your own time (that's what catalogues are for concerning if you ask me).



(Doris Beier)

A COMPILATION OF RATE PARAMETERS OF WATER-MINERAL INTERACTION KINETICS FOR APPLICATION TO GEOCHEMICAL MODELING: USGS OPEN-FILE REPORT 2004-1068



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Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Geochemical reaction path modeling is useful for rapidly assessing the extent of water-aqueous-gas interactions both in natural systems and in industrial processes. Modeling of some systems, such as those at low temperature with relatively high hydrologic flow rates, or those perturbed by the subsurface injection of industrial waste such as CO₂ or H₂S, must account for the relatively slow kinetics of mineral-gas-water interactions. We have therefore compiled parameters conforming to a general Arrhenius-type rate equation, for over 70 minerals, including phases from all the major classes of silicates, most carbonates, and many other non-silicates. The compiled dissolution rate constants range from -0.21 log moles m⁻² s⁻¹ for halite, to -17.44 log moles m⁻² s⁻¹ for kyanite, for conditions far from equilibrium, at 25 °C, and pH near neutral. These data have been added to a computer code that simulates an infinitely well-stirred batch reactor, allowing computation of mass transfer as a function of time. Actual equilibration rates are expected to be much slower than those predicted by the selected computer code, primarily because actual geochemical processes commonly involve flow through porous or fractured media, wherein the development of concentration gradients in the aqueous phase near mineral surfaces, which results in decreased absolute chemical affinity and slower reaction rates. Further differences between observed and computed reaction rates may occur because of variables beyond the scope of most geochemical simulators, such as variation in grain size, aquifer heterogeneity, preferred fluid flow paths, primary and secondary mineral coatings, and secondary minerals that may lead to decreased porosity and clogged pore throats.

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