

Weathering processes of serpentinites and formation of Mg-hydrocarbonate minerals

Tsutomu Sato[1], yoshiyuki tada[2], Shoji Arai[3]

[1] Global Environ. Sci. Engineer., Kanazawa Univ., [2] Earth Sci., Kanazawa Univ., [3] Dept. Earth Sci., Kanazawa Univ.

<http://133.28.50.192/sato/index.html>

Serpentinized rocks with different degree of weathering, from Mineoka (Chiba, Japan), have been investigated to elucidate their weathering processes and formation processes of Mg-hydrocarbonates. The following two types of the weathering were observed: (1) formation of Mg-hydrocarbonate from the serpentine and brucite, loss of Si at high alkaline condition, and (2) formation of Fe-Si amorphous materials from the serpentine and pyroxenes, loss of Mg, and no carbonate formation at neutral condition. The difference in the pH conditions and solidification of carbonate ions is presumably due to chemical composition of the parent minerals, mineral compositions of the parent serpentinites, and nature of mineral-water interaction.