STUDY ON THE DAWSONITE - BEARING SANDSTONES REFORMED BY CO2 FLUID

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Abstract

Based on the study on the reformation of Dawsonite-bearing sandstones with CO2 fluids at different temperature (100°C 200°C and 300°C) and different CO2/H2O/sandstone systems, it is suggested that as the temperature increases, the corrosion intensity of dawsonite-bearing sandstones is gradually increased, but the stability of the sandstone is reduced. The SEM study shows that there are radiated aggregate sediments of boehmite in all samples. At 200°C, with the dissolving of dawsonite-bearing sandstone, authigenic siderite is produced; at 300°C, chlorite appears on local surface of the samples. As dawsonite-bearing sandstone is moderately dissolved at 100°C and siderite is formed at 200°C, it indicates that even if CO2 is injected in the system for a second time, the CO2 captured in the form of carbonate minerals under the stratum condition will not be released.

Key words: CO2, dawsonite-bearing sandstone, hydrothermal experiment, precipitation, solution

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