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STUDY ON THE DAWSONITE - BEARING SANDSTONES REFORMED BY CO_2 FLUID

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Abstract

Based on the study on the reformation of Dawsonite-bearing sandstones with CO_2 fluids at different temperature (100ºC 200ºC and 300ºC) and different CO_2/H_2O/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 200ºC, with the dissolving of dawsonite-bearing sandstone, authigenic siderite is produced; at 300ºC, chlorite appears on local surface of the samples. As dawsonite-bearing sandstone is moderately dissolved at 100ºC and siderite is formed at 200ºC, it indicates that even if CO_2 is injected in the system for a second time, the CO_2 captured in the form of carbonate minerals under the stratum condition will not be released.

Key words: CO_2, dawsonite-bearing sandstone, hydrothermal experiment, precipitation, solution

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