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SEGREGATION OF ANHYDRITE IN SINTERED NATURALLY OCCURRING ROCK SALT

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Abstract

This study examines the sintering of naturally occurring rock salt in dependence of pressure and temperature as is desired for storage and other applications in saline environments where rock salt is thermodynamically stable and shows a mechanical behavior compatible to the surrounding host material. Rock salt consists mainly of sodium chloride with small impurities of less soluble compounds such as anhydrite, CaSO_4 . A special interest in the sintering process of naturally occurring rock salt is the segregation of anhydrite to the grain boundaries between individual sodium chloride crystals. Our study has shown that sintering naturally occurring rock salt at different pressures will influence the segregation of anhydrite. Experiments support a greater segregation of anhydrite resulting from an increased pressure treatment. As the solubility of anhydrite is less than sodium chloride, the sintered samples of naturally occurring rock salt show greater stability towards dissolution than pure sodium chloride.

Key words: Segregation, Sinter, Anhydrite

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