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Measurement and Description of water in synthetic Ettringite and Kuzelite

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Ettringite and Kuzelite are two minerals which are used in industry extensively due to their water bonding capacity. These minerals are mainly formed as hydration products of cementitious materials. The water bonding capacity is variable because excess water molecules can be bound in the interlayer of Kuzelite or in the channels of the ettringite structure. The water contents are measured by Karl-Fischer titration and thermoanalytical methods.

Ettringite can also be formed as secondary mineral when sulfate expansion occurs, the effect can be increased when a higher water containing mineral is formed because the volume is also increased. The water contents vary due to relative humidity, anion, and temperature.