

## RESEARCH PAPERS

粘土制砖过程中氟化物逸出和固定的研究

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**摘要** The firing tests with clay blocks were undertaken to study the fluorine expulsion and retention characteristics of calcium-based materials during the firing of brick clays. The results indicate that fluorine expulsion begins at approx. 600-700°C, and the main portion occurs in 800-1000°C. The mode of firing has some effects on fluorine expulsion. Additives of calcium-based material can reduce fluorine expulsion, which is mainly attributed to the increased formation of CaF<sub>2</sub> during clay firing. In addition, the optimum addition tests of 6 calcium-based materials with higher efficiency were carried out in a brick kiln. More than 75% fluorine is retained in the brick body and there is no adverse effect on brick product. This makes it possible for brickyard to achieve non-polluting production.

**关键词** [fluorine expulsion](#) [fluorine retention](#) [calcium-based materials](#) [brick making](#)

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### **Study on Fluorine Expulsion and Retention in Brickmaking Practice**

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**Abstract** The firing tests with clay blocks were undertaken to study the fluorine expulsion and retention characteristics of calcium-based materials during the firing of brick clays. The results indicate that fluorine expulsion begins at approx. 600-700°C, and the main portion occurs in 800-1000°C. The mode of firing has some effects on fluorine expulsion. Additives of calcium-based material can reduce fluorine expulsion, which is mainly attributed to the increased formation of CaF<sub>2</sub> during clay firing. In addition, the optimum addition tests of 6 calcium-based materials with higher efficiency were carried out in a brick kiln. More than 75% fluorine is retained in the brick body and there is no adverse effect on brick product. This makes it possible for brickyard to achieve non-polluting production.

**Key words** [fluorine expulsion](#); [fluorine retention](#); [calcium-based materials](#); [brick making](#)

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