
alternative raw materials for container glass production - melting results

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Abstract

The amount of natural and synthetic raw materials used in the German glass sector (container and window glass) is 3.3 million t of raw materials (1). Approximately 20% of these 3.3 million t of raw materials end up in the atmosphere as CO₂ (0.66 million t). This means that despite of future optimization of the cullet recycling economy, the use of new melting technologies, AI production etc., there will be still emissions of climate-damaging CO₂ due to the raw material challenge.

In the past, the replacement of raw material carbonates by hydroxide raw materials was investigated, but not introduced industrially, due to caking in the batch silo and thus to sensitive disruptions in the production process. Likewise, the very welcome use of fine cullet could not always be applied, since fine cullet is highly contaminated with organic matter, shows dust problems in the glass-melting furnace and the problem of increased primary foam formation during the melting process is a challenge.

The main objectives of the project are a) the evaluation of the influence of burnt lime and sodium hydroxide on the glass melting process and b) the technological usability of alternative raw materials concerning dusting and caking.

Keywords: melting, raw materials

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