

Bubble growth in a cupcake

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Bubble formation and growth in pumice is important factor in volcanic phenomena. We introduce the report for bubble growth in a cupcake.

Materials: flour, baking powder, egg, salt, sugar, cooking oil

Recipe: Heat the mixed materials

Method of heating: a steamer, a microwave oven, a oven, a grill, a toaster

Volatiles: H₂O, CO₂

Experiment 1: The volume of flour and seasonings are fixed and the volume of egg was changed from half to twice. Materials was heated by a microwave oven.

Half egg: Top surface was irregular by bubbles.

One egg: A cake mostly rise.

Two egg: Top surface was flat.

In all case the bubble size increase up to dawn.

Discussion: In the case of the heating from outside by a steamer and toaster the top surface has some cracks. However in the case of a microwave oven the top surface rise keeping flat surface. We guess that the irregularities in heating and volatile contents make crack.