



Colorado Science and Engineering Fair

2025 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Impact of Cornstarch on Bath Bombs

Finalist's Name: Angelina Gantumur

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Sponsor's Name: Gantumur Otgon

Category: Chemistry

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Bath bombs are a popular cosmetic product in the cosmetology field. One common ingredient is found within them which is cornstarch. Cornstarch serves multiple purposes and roles in a bath bomb. Cornstarch serves as a dry “filler” that helps balance and regulate bath bombs in order for them to activate clearly with no complexities and to contribute to the structural integrity of the bath bomb before use. The experiment investigated the effect of additional cornstarch on the dissolution time, as well as the effect of the balanced cornstarch, and the fizziness of bath bombs at a controlled water temperature at 37 degrees celsius, ensuring variations in temperature do not influence the outcomes and results of the reactions. The bath bombs with the extra cornstarch dissolved more slowly than the bath bombs made with the balanced recipe, which contributed to the added weight and the active properties of cornstarch. Acting as the dry “filler”, the cornstarch slowed the reaction between citric acid and the bicarbonate of soda, which are the most crucial ingredients needed for the bath bomb’s effervescence. The differences in the levels of fizz were also observed. While the standard recipe produced a fizz characteristic of commercially available bath bombs, those with the extra cornstarch recipe portrayed a slower and more translucent effervescence. These results recommend that cornstarch can significantly influence both the dissolution rate and the quality of the fizz, due to its ability to moderate and balance the chemical reactions within the bath bombs.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**