



CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

Name(s) Bridget Connolly; Kelly Eaton; Alyssa Sheen	Project Number J1209
Project Title Hot Hot Baby: The Flammability of Dye in Baby Clothes	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Our objective was to determine if dye affects the flammability of baby clothes. We hypothesized that colored baby clothes will burn faster than white baby clothes because of the dye manufacturers put into them. We tested three different colors of 100% percent cotton baby clothes from two brands. We cut the cloth samples into equal squares, burnt them following a consistent procedure and recorded the time they took to burn.</p> <p>Methods/Materials We tested 6 samples of baby clothes (onesie): Gerber 100% cotton in white, light pink and light blue; Carters 100% cotton in white, light pink and light blue. We used the following supplies: scissors; ruler; black Fine Tip Sharpie; tin tray; metal tongs; paper; Ziploc plastic bags; propane blow torch; stop watch; camera. We cut six (6) 4 x 4 inch squares from each of the 6 samples of baby clothes. Holding the top of each square with the tongs, we used the blow torch to light the bottom of the cloth, removing the cloth from the flame when it caught fire. We used a stop watch to record the time it took for the cloth to completely burn.</p> <p>Results We first tested the 6 squares of Gerber-white. When we were done we added up the 6 time results and calculated the average burn time at 28.167 seconds. We repeated the procedure for each other sample. The average burn times were: Gerber-pink=25.5 seconds; Gerber-blue=20.5 seconds; Carters-white=30.1 seconds; Carters-pink=27.67 seconds; Carters-blue=27.3 seconds. The results supported our hypothesis, and showed that on average colored baby clothes burned faster than white baby clothes and blue burned faster than pink.</p> <p>Conclusions/Discussion The results of our experiment showed that on average colored baby clothes burned at a faster rate than white baby clothes and blue burned faster than pink.</p> <p>In our research we found a lot of information about the flammability of clothes, including safety and testing regulations. Research has been done about flammability of different textiles. But we could not find information about the effect of dyes on flammability, other than some dyes or dye ingredients can be flammable. Based on our experiment, dye might affect flammability. Babies cannot stop, drop, and roll so we need to know how to make baby clothes safe. Our experiment shows that dye color might be a factor and should be studied more.</p>	
Summary Statement Our experiment tested the effect of dye on the flammability of baby clothes.	
Help Received Mr. Eaton helped us burn the clothes with the blow torch. Our parents helped us with some parts of the research, supplies, display, and report. Mrs. Garamendi helped us with the computer graph and Mr. Sheen with the title banner. Our teachers helped us with editing our report.	