

Exploring Chemical Reactions with Food Dyes

Data Table

Stability of FD&C Food Dyes						
Food Dye	Distilled Water	pH 2 Buffer	pH 12 Buffer	CaCl ₂ (aq)	Bleach	Na ₂ S ₂ O ₃ (aq)
FD&C Blue No. 1						
FD&C Red No. 3						
FD&C Yellow No. 6						
FD&C Red No. 40						

Post-Lab Questions

- Which of the four FD&C food dyes tested appeared to be the most stable, that is, resistant to change in the testing conditions? Why?
- Which FD&C food dye appeared to be unstable or most reactive? Why?
- What variable caused the greatest amount of change with all four of the food dyes tested? What happened?
- If a food scientist has a product with a pH of 2, which food dye(s) would not be recommended for use?
- In a beverage packaging plant, which dye(s) may need a recommendation for use with softened water? Why?
- By accident, a person washed yellow socks in a load of white clothes. Bleach had been added to whiten the whites. If the socks were dyed with Yellow No. 6 what would you predict would happen to the yellow socks after the washing?