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A significant amount of research has been conducted to show that exposure to the colorless gas formaldehyde can lead to a variety of unwanted side effects. Many hair products, such as the Brazilian Blowout claim to be “formaldehyde-free”, however, when these products are used, studies have shown that formaldehyde is being released into the air and therefore exposing the user to an unknown concentration of formaldehyde. Using a quantitative, colorimetric method, the concentration of formaldehyde in a sample was determined. First, chromotropic acid and sulfuric acid were mixed with known concentrations of formaldehyde on a thin-layer chromatograph (TLC) plate to create a standard curve. The color density of the violet spots developed during the process were assessed using ImageJ software. Once the color density of the known standards is determined, the method will be repeated to determine if various hair creams that claim to be “formaldehyde-free” contain any formaldehyde or not. Also, hair creams will be heated up to see if formaldehyde can be produced.