

## Q&A: Brazilian Blowout & other hair smoothing salon treatments

Occupational Health Branch  
California Department of Public Health

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The California Department of Public Health (CDPH) and Cal/OSHA have received multiple inquiries from hair stylists and their customers regarding health effects from using keratin-based hair smoothing products. The focus of these inquiries has been the product Brazilian Blowout. Oregon OSHA and Health Canada put out hazard alerts on this and other products in October 2010.<sup>1, 2</sup> The following are some commonly asked questions regarding this issue:

- **Why are hair smoothing treatments of concern?**
  - ✓ There is growing evidence that many popular hair smoothing treatments contain and release formaldehyde gas.
  - ✓ Formaldehyde is a strong irritant to the eyes, nose, throat, skin, and lungs. It can produce allergic reactions such as asthma and skin allergy. Formaldehyde is also widely accepted as a chemical known to cause cancer in humans.<sup>3</sup>
  - ✓ Both stylists and customers are reporting acute health problems consistent with exposure to formaldehyde while using or after using these products. Reported problems include nose bleeds, burning eyes and throat, skin irritation, and asthma attacks.
  - ✓ Solutions of formaldehyde slowly release formaldehyde gas at room temperature. This process speeds up when formaldehyde solutions are heated or agitated.
- **Which products are of concern?**
  - ✓ “Brazilian Blowout Solution” or “Brazilian Blowout Acai Professional Smoothing Solution.” These products, including bottles labeled as “formaldehyde free,” may contain levels of formaldehyde that trigger mandatory reporting under the California Safe Cosmetics Act of 2005.
  - ✓ These products have been found to contain between 4 and 12 percent formaldehyde, as confirmed by at least four independent laboratories in California, Oregon and Canada. Extensive testing by Oregon OSHA also indicates that other keratin-based hair smoothing products contain formaldehyde, but at lower concentrations (1 to 7 percent).<sup>4</sup>
- **Why is formaldehyde in keratin-based hair smoothing products?**
  - ✓ Formaldehyde modifies hair proteins, called keratins, during the hair treatment procedure, making the salon treatment more effective and longer-lasting.
  - ✓ It is not illegal in the U.S. to put formaldehyde (or formaldehyde solutions) into cosmetics products.
  - ✓ Cosmetic products and ingredients are not subject to U.S. Food and Drug Administration premarket approval authority, with the exception of color additives.<sup>5</sup>
- **There is talk about methylene glycol being in the product. How are methylene glycol and formaldehyde related?**
  - ✓ Methylene glycol is formed when formaldehyde gas is added to water. When solutions containing methylene glycol are applied to hair, and particularly when they are heated (with a blow-dryer or flat-iron), the methylene glycol converts back to formaldehyde gas, which is then released into the air.
  - ✓ US EPA and Cal/OSHA identify many synonyms for formaldehyde including: formalin, methylene glycol, methylene oxide, paraform, formic aldehyde, methanal, oxomethane, and oxymethylene. Many of these are solutions of formaldehyde.<sup>6, 7</sup>
- **How might I be exposed to formaldehyde during keratin-based hair smoothing treatments?**
  - ✓ Formaldehyde can be present in hair smoothing solutions or as vapor in the air near where formaldehyde solutions are being used. You can be exposed by:
    - Inhaling formaldehyde vapor into the lungs and respiratory tract;
    - Contacting mucous membranes in the eyes, nose, or throat with formaldehyde vapor;
    - Directly contacting skin with formaldehyde solutions.

▪ **How can I reduce or eliminate exposure?**

- ✓ Avoid contact with formaldehyde-containing products or minimize contact through use of personal protective equipment as indicated by HESIS.<sup>3</sup>
- ✓ Because several keratin-based hair smoothing treatments have been shown to contain formaldehyde<sup>4</sup>, avoiding contact with these products is advisable unless it can be demonstrated that these products are free of formaldehyde.
- ✓ If you are a salon owner, a stylist, or other salon worker, consult with Cal/OSHA regarding [workplace safety and the Cal/OSHA formaldehyde regulation](http://www.dir.ca.gov/dosh/HairSmoothingPageVersion1Nov182010.pdf) (<http://www.dir.ca.gov/dosh/HairSmoothingPageVersion1Nov182010.pdf>)
- ✓ If you suspect a product advertised as 'formaldehyde-free' contains formaldehyde, contact the Food and Drug Branch of CDPH at 1 (800) 495-3232.

▪ **If I am a hair stylist, do OSHA's workplace standards apply to me?**

- ✓ Cal/OSHA requires employers to protect their employees from exposure to hazardous airborne chemicals in California workplaces.
- ✓ Many hair stylists are independent businesspersons rather than employees of a salon. To determine whether Cal/OSHA regulations apply in your case, [contact the Cal/OSHA office closest to you](http://www.dir.ca.gov/asp/DoshZipSearch.html) (<http://www.dir.ca.gov/asp/DoshZipSearch.html>) or 1 (866) 924-9757.

▪ **If I think I have a health problem from using Brazilian Blowout, what should I do?**

- ✓ Contact your personal physician and share a copy of this document with him or her.
- ✓ Contact a specialist in occupational medicine. Visit the [Association of Occupational and Environmental Clinics website](http://www.aoc.org/directory.htm) (<http://www.aoc.org/directory.htm>) to find a regional specialist.

▪ **What is California doing about Brazilian Blowout and other products like it?**

- ✓ The California Attorney General's office filed suit against the makers of Brazilian Blowout on November 10, 2010, citing the firm for lack of proper labeling, false and deceptive advertising, and violation of the California Safe Drinking Water and Toxic Enforcement Act (Proposition 65) and the California Safe Cosmetics Act of 2005.
- ✓ Cal/OSHA and CDPH have ongoing investigations into this and other related hair smoothing products.

**References & More Information**

1. [Oregon OSHA Hazard Alert: Hair smoothing products and formaldehyde](http://osha.oregon.gov/OSHAPubs/hazard/2993-26.pdf) (<http://osha.oregon.gov/OSHAPubs/hazard/2993-26.pdf>)
2. [Health Canada Advisory and Warning: Brazilian Blowout Solution Contains Formaldehyde: Update, 10/26/2010](http://www.healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2010/13445a-eng.php). (<http://www.healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2010/13445a-eng.php>). Accessed online on 11/15/2010
3. [HESIS Formaldehyde fact sheet](https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/formaldehyde.pdf) (<https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/HESIS/CDPH%20Document%20Library/formaldehyde.pdf>)
4. [Keratin Based Smoothing Products and the Presence of Formaldehyde, Oregon OSHA and CROET at Oregon Health and Science University, 10/29/2010](http://www.ohsu.edu/xd/research/centers-institutes/croet/emerging-issues-and-alerts.cfm) (<http://www.ohsu.edu/xd/research/centers-institutes/croet/emerging-issues-and-alerts.cfm>)
5. [Food and Drug Administration Authority Over Cosmetics](https://www.fda.gov/cosmetics/guidanceregulation/lawsregulations/ucm074162.htm) (<https://www.fda.gov/cosmetics/guidanceregulation/lawsregulations/ucm074162.htm>)
6. [US EPA Integrated Risk Information System, Formaldehyde](http://www.epa.gov/ncea/iris/subst/0419.htm) (<http://www.epa.gov/ncea/iris/subst/0419.htm>)
7. [Cal/OSHA Formaldehyde Standard \(8CCR5217\), Appendix A](http://www.dir.ca.gov/title8/5217a.html) (<http://www.dir.ca.gov/title8/5217a.html>)

**California Safe Cosmetics Program  
Occupational Health Branch  
California Department of Public Health**

[California Safe Cosmetics Program website](http://www.cdph.ca.gov/Cosmetics) ([www.cdph.ca.gov/Cosmetics](http://www.cdph.ca.gov/Cosmetics))

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