

HAZARD ALERT UPDATE

Hair Smoothing Products That Could Release Formaldehyde

During Federal OSHA investigations, air tests showed formaldehyde at levels above OSHA's limits in salons using Brazilian Blowout Acai Professional Smoothing Solution, labeled "formaldehyde free," and Brasil Cacau Cadiveu, resulting in violations and citations.

The Occupational Safety and Health Administration (OSHA) and several State OSHA programs are investigating questions and complaints from hair salon owners and workers about possible formaldehyde exposure from hair smoothing products. Some of these products have been labeled as "formaldehyde-free." Oregon's Occupational Safety and Health Administration [36 KB PDF, 2 pages], California's Occupational Safety and Health Administration [34 KB PDF, 2 pages], the Connecticut Department of Public Health, and several other state agencies have already issued warnings about these products to salon owners, stylists, other salon workers, and clients. The National Institute for Occupational Safety and Health (NIOSH) has also completed a Health Hazard Evaluation [150 KB PDF, 11 pages] for salon workers that assessed risks posed from using a specific hair smoothing product in a single salon. **In addition, the Food and Drug Administration (FDA) has issued a warning letter to the importer and distributor of Brazilian Blowout Acai Professional Smoothing Solution (GIB LLC dba Brazilian Blowout) identifying this product as adulterated and misbranded because it contains methylene glycol, which can release formaldehyde during the normal conditions of use, and because the label makes misleading statements ("Formaldehyde Free" or "No Formaldehyde").** This Hazard Alert provides updated information about OSHA's investigations, the health hazards of formaldehyde, and how to protect workers using hair smoothing products that contain or release formaldehyde.



What have OSHA's investigations found?

Federal OSHA and State OSHA programs continue to investigate complaints from stylists and hair salon owners about exposure to formaldehyde while using hair smoothing products such as: Brazilian Blowout (Acai Professional Smoothing Solution, Professional Brazilian Blowout Solution), Brasil Cacau Cadiveu, Keratin Complex Smoothing Therapy (Natural Keratin Smoothing Treatment, Express Blow Out, Natural Keratin Smoothing Treatment Blonde), and Marcia Teixeira (Advanced Brazilian Keratin Treatment, Extreme De-Frizzing Treatment). OSHA has conducted air sampling at multiple salons and found formaldehyde in the air when stylists were using hair smoothing products. Some of these products were labeled "formaldehyde free" or did not list formaldehyde on the product label or in the **Material Safety Data Sheet (MSDS)**. In most cases, where the label did not state that the product had formaldehyde in it, OSHA found that hair salon owners using those products did not know that hair smoothing products contain or could expose workers to formaldehyde because manufacturers, importers, and distributors did not include the correct hazard warnings on the product's label or MSDS.

During Federal OSHA investigations, air tests showed formaldehyde at levels above OSHA's limits in salons using Brazilian Blowout Acai Professional Smoothing Solution, labeled "formaldehyde free," and Brasil Cacau Cadiveu. Both Federal and State OSHA have found violations at several manufacturers, importers, and distributors (GIB LLC dba Brazilian Blowout, Keratronics Inc., Pro Skin Solutions, M&M International Inc., Copomon, INOVA Professional). The violations include failing to list formaldehyde as a hazardous ingredient on the MSDS (the hazard warning sheet) provided to downstream users (e.g., salon owners, stylists), failing to include proper hazard warnings on product labels, and failing to list the health effects of formaldehyde exposure on the MSDS. Labels must include ingredient and hazard warning information and the MSDS must provide users with information about the chemicals in a product, the hazards to workers, and how to use a product safely.

Recent reports from Federal OSHA, Oregon OSHA, and California OSHA should alert salon owners and stylists to look closely at the hair smoothing products they are using to see if they contain methylene glycol, formalin, methylene oxide, paraform, formic aldehyde, methanal, oxomethane, oxymethylene, or CAS Number 50-00-0. All of these are names for or treated as formaldehyde under OSHA's Formaldehyde standard. There are also chemicals, such as timonacic acid (also called thiazolidinecarboxylic acid), that can release formaldehyde under certain conditions, such as those present during the hair smoothing treatment process. Products that contain these chemicals can expose workers to formaldehyde. Employers who use, manufacture, import or distribute, the products must follow OSHA's Formaldehyde standard.

The first reports about formaldehyde in hair smoothing products surfaced when Oregon OSHA investigated a complaint from a hair stylist who had nosebleeds, eye irritation, and trouble breathing while using a Brazilian Blowout product labeled "formaldehyde-free." After testing the product, Oregon OSHA found that the product contained formaldehyde, a chemical that can cause the health problems reported by the stylist. Oregon OSHA tested more than 100 samples of keratin-based hair smoothing products and found formaldehyde levels in

some products well above what could legally be labeled as "formaldehyde-free." In addition to the Brazilian Blowout products, Oregon OSHA found that other manufacturers, importers, and distributors of hair smoothing products also had not listed formaldehyde or included hazard information on the label or in the MSDS. Based on these findings, Oregon OSHA published a Hazard Alert [495 KB PDF, 2 pages] and a full report [210 KB PDF, 34 pages] in October 2010. Oregon OSHA also alerted Federal OSHA and State OSHA programs where the products were manufactured, imported, or distributed because the hazard information for the product was not correct and did not meet the requirements of OSHA's Hazard Communication standard (29 CFR 1910.1200 or State equivalent).

OSHA continues to work with other agencies (e.g., Food and Drug Administration, National Institute for Occupational Safety and Health) to look at formaldehyde exposures in other salons and to make sure that workers and the public have correct information about these products. More information on the background and reports from OSHA and other agencies, including the recent NIOSH Health Hazard Evaluation [150 KB PDF, 11 pages], and the FDA's warning letter can be found at: www.osha.gov/SLTC/formaldehyde/background.html.

What is formaldehyde and how can it affect my health?

Formaldehyde is a colorless, strong-smelling gas that presents a health hazard if workers are exposed. You can be exposed to formaldehyde if you breathe it into your lungs, if it gets into your eyes, or if it is contained in a product that gets onto your skin. You can also be exposed accidentally if you touch your face, eat food, or drink after using a product containing formaldehyde without first washing your hands. It can irritate the eyes and nose, and cause coughing and wheezing. Formaldehyde is a "sensitizer," which means that it can cause allergic reactions of the skin, eyes, and lungs such as asthma-like breathing problems and skin rashes and itching. When formaldehyde is in a product that gets sprayed into the eyes, it can damage the eyes and cause blindness. It is also a cancer hazard. Formaldehyde is a health hazard, whether in a product or in the air. OSHA's Formaldehyde standard 29, CFR 1910.1048, covers employers who use formaldehyde, and products that contain or release formaldehyde. (OSHA has also published a Formaldehyde Fact Sheet [43 KB PDF*, 2 pages].) For more information about formaldehyde, visit: www.osha.gov/SLTC/formaldehyde/index.html.



Why do some hair smoothing products expose me to formaldehyde?

Many keratin-based hair smoothing products contain formaldehyde dissolved (and chemically reacted) in water and other ingredients in the product. Because of the way the formaldehyde reacts in these products, some manufacturers, importers, or distributors might list other names for formaldehyde on product information or might claim that the product is “formaldehyde-free.” Formaldehyde might be listed as methylene glycol, formalin, methylene oxide, paraform, formic aldehyde, methanal, oxomethane, oxymethylene, or CAS Number 50-00-0. All of these are names for formaldehyde under OSHA’s Formaldehyde standard. There are also chemicals, such as thiomalic acid (also called thiazolidinecarboxylic acid) that can release formaldehyde under certain conditions, such as those present during the hair smoothing treatment process. The bottom line is that formaldehyde can be released from hair smoothing products that list any of these names on the label and workers can breathe it in or absorb it through their skin. Workers can be exposed to formaldehyde during the entire hair straightening process, especially when heat is applied (e.g., blow-drying, flat ironing).

How would I know if the product I’m using could expose me to formaldehyde?

Read the product label and MSDS to determine if they list methylene glycol or any of the other names for formaldehyde listed above. If they do, the product can expose you to formaldehyde. Under OSHA’s Hazard Communication standard, salon owners and other employers must have an MSDS for each product used in the salon that contains a hazardous chemical. Employers need to review the MSDSs they receive and make sure they understand the hazards of the products they

use in their salon(s). They must also make the MSDSs available to their workers (e.g., stylists) and train all workers using the product about the hazards and how to use it safely. If employers do not receive an MSDS automatically, they should request one. If the MSDS does not look complete (e.g., blank spaces that are not completed) then the employer should request a new one from the manufacturer. If the request does not produce the information needed, then the employer should contact the local OSHA Area Office for assistance in obtaining the MSDS.

Be aware that an MSDS may not contain all of the hazard information required, as initially found in the case of Brazilian Blowout products. In the Oregon case, it was only after a stylist reported health problems while using the products that the investigation began. Workers need to report any health problems they think are from the products they use in the workplace to their employer and employers need to follow up on reports of health problems from workers.

When are manufacturers, importers, and distributors of hair smoothing products required to list formaldehyde as an ingredient in their products?

OSHA requires manufacturers of products that contain or release formaldehyde to include information about formaldehyde and its hazards on the label and in the MSDS. Formaldehyde must be listed if it is in the product at 0.1% or more (as a gas or in solution) or if the product releases formaldehyde above 0.1 parts of formaldehyde per million parts (ppm) of air. Salons and other employers that directly import hair smoothing products from other countries have the same responsibilities as a manufacturer under the Hazard Communication standard - they must determine the hazards of the product and develop labels and MSDSs that communicate the hazards to users.

If a product contains 0.1% or more formaldehyde or can release formaldehyde into the air above 0.1 ppm, then the product label must include the following information, as required by OSHA’s Formaldehyde standard, 29 CFR 1910.1048(m)(3):

- a statement that the product has formaldehyde in it;
- the name and address of the manufacturer, importer, or other company responsible for the product;
- a statement that the employer and MSDSs can readily give health hazard information.

Additionally, if the product can release formaldehyde into the air above 0.5 ppm, the label must also have the following information:

- a list of all product health and safety hazards;
- the phrase “Potential Cancer Hazard.”

The MSDS must include the following information, as required by OSHA’s Formaldehyde standard, 29 CFR 1910.1048(m)(4) and OSHA’s Hazard Communication standard, 29 CFR 1910.1200(g):

- name of the product used on its label
- name (including common names) of all hazardous chemicals in the product at more than 1% (or more than 0.1% for carcinogens such as formaldehyde), or that could be released into the air above the limits set by OSHA or the American Conference of Governmental Industrial Hygienists (ACGIH), or could be a health risk to employees
- health and safety information for each listed hazardous chemical – including physical properties and health hazards
- common ways that people are exposed to the product and its hazardous ingredients
- exposure limits (the limit of how much can be in the air)
- whether the chemical is listed as a carcinogen by OSHA, the International Agency for Research on Cancer (IARC) or the National Toxicology Program (NTP)
- how to safely store and use the product, including what protective equipment to wear and what to do in an emergency
- the name, address, and telephone number of the company or person responsible for preparing the MSDS, and the date it was made or last changed

What can I do to reduce exposure to formaldehyde when using formaldehyde releasing hair smoothing/straightening products?

Employers, stylists, and other salon workers should read the product information and MSDSs for the products they buy and use so that they know what chemicals are in them and how to use them safely in the workplace. The best way to control exposure to formaldehyde is to use products that do not list formaldehyde, formalin, methylene glycol, or any of the other names for formaldehyde listed above on the label or in the MSDS. Beauty care companies are now making and selling products that they claim do not contain formaldehyde in the solution. Choosing one of these products

might eliminate the risk of formaldehyde exposure. Note that just because a product doesn’t list formaldehyde, formalin, or methylene glycol does not mean that it does not contain any other hazardous ingredients.

If salon owners decide to use products that contain or release formaldehyde, then they must follow the requirements in OSHA’s Formaldehyde standard. The standard requires that employers test the air to find out the level of formaldehyde present in the air when the product is being used. If the test shows that formaldehyde is present at levels above OSHA’s limits (0.75 parts of formaldehyde per million parts (or ppm) of air during an 8-hour work shift or 2 ppm during any 15-minute period), then the employer must:

- Install air ventilation systems in the areas where these products are mixed and used to help keep formaldehyde levels below OSHA’s limit and perform regular maintenance to make sure the systems work correctly;
- When possible, require workers to use lower heat settings on blow-dryers and flat irons used during the process;
- Give workers respirators, if needed; train them to use the respirator properly; and meet the other requirements in OSHA’s Respiratory Protection standard;
- Ensure workers understand the information on a product’s label and MSDS;
- Post signs at entryways to any area where formaldehyde is above OSHA’s limit to tell workers of the danger and stating that only authorized personnel may enter;
- Tell workers about the health effects of formaldehyde, how to use the product safely, and what personal protective equipment to wear while using the product; and
- Train workers how to safely clean up spills and properly throw products out.

In addition, where the tests show that formaldehyde is present in the air at a level of 0.5 ppm during an 8-hour work shift or 2 ppm during any 15-minute period, then the employer must:

- Get workers the right medical attention (e.g., doctor exams), and
- Test the air periodically to make sure that formaldehyde levels are below OSHA’s limits.

Whether or not air tests show formaldehyde levels above OSHA’s limits, employers must follow certain parts of the standard if a product contains formaldehyde:

- Give employees appropriate gloves and other personal protective equipment (e.g., face shield, chemical splash goggles, chemical-resistant aprons) and train them on how to use this equipment while mixing and applying the products;
- Explain to workers how to read and understand the information on a product's label and MSDS;
- Make sure the workplace has eye and skin washing equipment if products that contain formaldehyde could be splashed onto the workers' skin or into their eyes;
- Train workers how to safely clean up spills and properly throw products out; and
- Get workers the right medical attention (e.g., doctor exams) if they develop signs and symptoms of an exposure to formaldehyde or are exposed to large amounts of formaldehyde during an emergency (e.g., a large spill).

Employers must also keep records of the air tests they perform, any medical attention needed by their employees, and respirator fit-testing.

For more information about how to control formaldehyde exposures in hair salons, read Oregon OSHA's hazard alert [495 KB PDF, 2 pages] and Cal/OSHA's Advisory.

How can OSHA help you?

OSHA continues to monitor ongoing inspections that may have nationwide impact to ensure that health hazards and appropriate protections for products containing hazardous chemicals are communicated properly on the labels and MSDS. OSHA developed this alert to give workers and employers useful, up-to-date information on formaldehyde hazards that might be present when using hair smoothing products that contain or

release formaldehyde. Employers and workers should read OSHA's Formaldehyde Fact Sheet [43 KB PDF*, 2 pages] for more information about formaldehyde hazards and how to work with it safely. Contact your local OSHA office if you have any questions about a product that you are using or its MSDS. Hair salon owners can also contact OSHA's free and confidential consultation service to help determine if there are hazards at their workplace. On-site consultations do not result in penalties or citations. To contact OSHA's consultation service, visit OSHA's website or call 1-800-321-6742.

What rights do workers have?

Workers have a right to a safe workplace. The Occupational Safety and Health Act of 1970 (OSH Act) was passed to prevent workers from being killed or seriously harmed at work. The law requires employers to provide their employees with working conditions that are free of known dangers. The OSH Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training and assistance to workers and employers. Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or that there are serious hazards.

Contact us if you have questions or want to file a complaint. We will keep your information confidential. We are here to help you.

For other valuable worker protection information, such as Workers' Rights, Employer Responsibilities, and other services OSHA offers, visit OSHA's Workers page.



U.S. Department of Labor



**Occupational Safety
and Health Administration**

**1-800-321-OSHA (6742) TTY 1-877-889-5627
www.osha.gov**