



Hazardous Waste Management Program

Safer Alternatives for Chemical
Hair Straightening Products



Background

- Chemical hair straighteners are widely used at home and in salons
- Marketed for decades as safe and convenient
- Marketed to BIPOC communities
 - “Safe and convenient”
 - Disproportionately used by Black women and children
 - Structural drivers influence product use
 - Both a public health and equity issue
- Emerging evidence shows serious health risks



Chemicals of Concern

- Formaldehyde (known carcinogen in keratin/Brazilian hair straighteners)
- Formaldehyde releasers (FRs) – ingredients may transform into formaldehyde over time and/or during use
- Caustic ingredients (in relaxers)
- Long-chain parabens

Goals and Objectives

Identify and assess safer hair straightening products (specifically ones that are suspected of containing formaldehyde or FRs) by the end of 2026 so that Haz Waste can confidently recommend safer products when engaging with local communities and small businesses.

- Engage with hair professionals.
- Evaluate currently available safer products.
- Test products, or those in use at hair salons, for formaldehyde.

Approach

- Hair Stylist Survey
- Hair Salon Inventory
- Chemical Hazard Assessment and Product Certification Review
- Free Formaldehyde Testing



Cosmetologist Survey

- Surveyed 10 hair professionals
- Topics:
 - Product use
 - Chemical awareness
 - Barriers to safer alternatives
 - TFCA awareness
- Incentivized participation (\$150 gift card)



Table 6. Most Often Used Hair Straightening or Relaxing Products

Participant # ¹	Product Name Provided	Brand	Product Type	Use Frequency	Reapplication
1	Affirm	Avlon	Relaxer	3 clients per week	6-8 weeks
	Smoothing system	Keratin Complex	Keratin/Brazilian Hair Straightener	2 clients per week	Every 3 months
4	- ²	Affirm	Relaxer	4 clients per week	6-8 weeks
	-	Motions	Relaxer	4 clients per week	6-8 weeks
	-	Ion	Keratin/Brazilian Hair Straightener	3 clients per week	8 weeks
	-	Nairobi	Relaxer	4-5 clients per week	4-8 weeks
	-	Bantu	Relaxer	3 clients per week	6-8 weeks
5	-	Mizani	Relaxer	1 client every 2 months	8-10 weeks
6	-	Mizani	Relaxer	No re-application	8-10 weeks
	-	Nairobi	Styling foam	10-20 clients per week	- No answer provided
	-	Roux	Coloring	1-2 clients per week	-
7	-	Mizani	Relaxer	3-4 clients per week	4-8 weeks
	Wave Nouveau	Soft Sheen Carson	Amino Thioglycolate Relaxer	1 client per week	8-12 weeks
8	Argan Moroccan Oil	Morrocanoil	-	4 clients per week	None
9	Brazilian Blowout Free Smoothing Treatment	Brazilian Blowout	Keratin/Brazilian Hair Straightener	15-20 clients per week	Every 12 weeks
10	Chi	Chi Enviro	-	1 client per week	Every 3 months

Question 11: What makes it hard for you to switch to safer hair products?

Barriers to Switching to Safer Hair Products

Reported Barrier	Count (n = 10)	Percentage
Lack of information	5	50%
It costs too much	4	40%
Available for purchase (availability)	3	30%
Do not know where to get safer products	3	30%
Client preference	3	30%
Does not last as long	3	30%
Does not work as well	2	20%
No barriers	2	20%
Brand loyalty	1	10%
Other (please specify)	1	10%

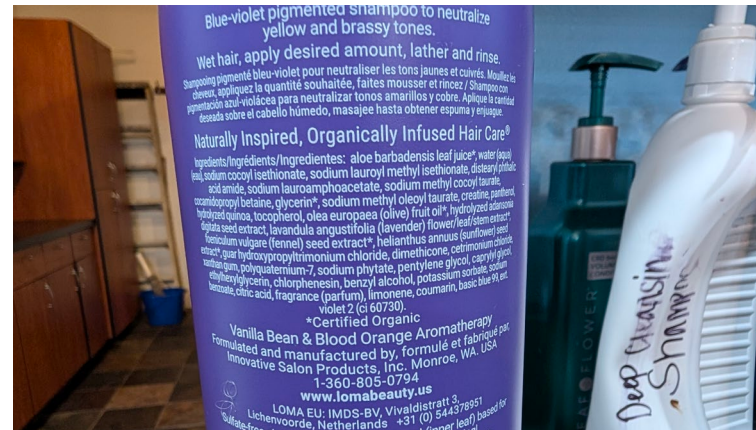
Question 30: How do you determine whether a product is safe to use? (Select all that apply)

How Product Safety is Determined

Method Used to Assess Safety	Count (n = 10)	Percentage
Review ingredients label	8	80%
Product labeled "natural," "organic," or "non-toxic"	7	70%
Review information online	4	40%
Check information from manufacturer (website or SDS)	4	40%
Rely on recommendations from others	2	20%
Look for third-party certifications	1	10%
Other (please specify)	2	20%
Not sure	1	10%

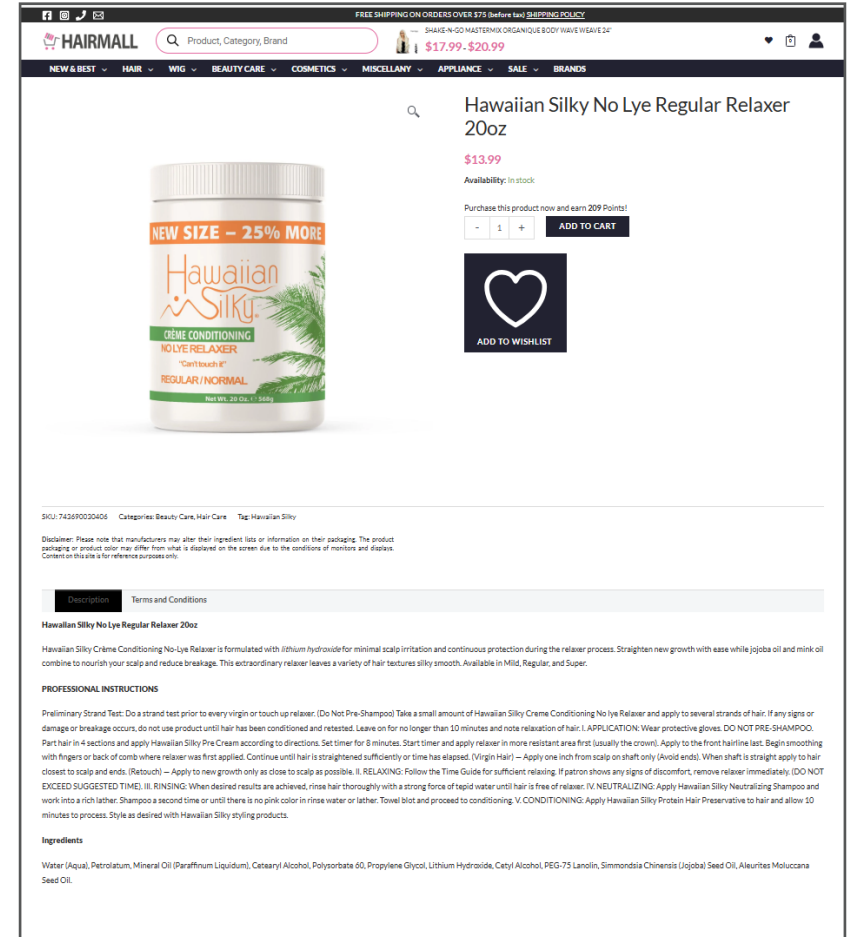
Salon Inventory

- Five salons
- 887 products identified
- Photographed products
- Captured:
 - Product name
 - Brand/manufacturer
 - Product type
 - Signal words
 - Made In country
 - Ingredient list



Chemical Hazard Assessment

- Screened products against Certifications
 - EWG, retailer 'clean' lists, etc.
- Reviewed formulations through Scivera:
 - Formaldehyde
 - Formaldehyde releasers
 - Caustic ingredients
 - Other chemicals of high concern
- Still figuring out how to Report...



Formaldehyde Sampling

- Selected products based on:
 - Marketed as “safer”
 - Use frequency (salon survey)
 - Ingredient flags
- Compared:
 - Label/formulation vs. lab results
 - Collaboration with UW
- Goal:
 - Identify hidden or generated formaldehyde
 - Identify true safer alternatives

Samples

Product Name	Description	Purchase location/link
ION Keratin Smoothing Treatment (1 of 2 in Kit)	No formaldehyde or FR was identified on ingredient list and is considered a safer alternative candidate.	Ion Keratin Smoothing Treatment Kit by Smooth Solutions Treatments Sally Beauty
ION Keratin Smoothing Treatment Clarify Shampoo (2 of 2 in Kit)	No formaldehyde or FR was identified on ingredient list and is considered a safer alternative candidate. This product supports the main smoothing product.	Ion Keratin Smoothing Treatment Kit by Smooth Solutions Treatments Sally Beauty
Cezanne Classic Keratin Smoothing Treatment Formaldehyde Free	No formaldehyde or FR was identified on ingredient list and is considered a safer alternative candidate. Includes an FR (Glyoxylic Acid), which is not regulated in Washington State.	Cezanne Classic Keratin Smoothing Treatment Formaldehyde-Free 10 Fl.Oz.~sealed~ eBay
DAMANCI ZERO Keratin Treatment, Formaldehyde Free Keratin Hair Treatment, Anti Frizz, Revitalizing, Organic Hair Smoothing Treatment	No formaldehyde or FR was identified on ingredient list and is considered a safer alternative candidate.	Amazon.com: DAMANCI ZERO Keratin Treatment, Formaldehyde Free Keratin Hair Treatment, Anti Frizz, Revitalizing, Organic Hair Smoothing Treatment with Coconut Oil, Stem Cell Peptides and Collagen (10 OZ) : Beauty & Personal Care
Keratin Complex NKSTB Natural Keratin Smoothing Treatment for Blonde Hair - NKST Blonde with KC Primer (1 of 3 products in Kit)	Product was used by a survey participant. Includes an FR (Diazolidinyl Urea), which is regulated in Washington State.	Keratin Complex NKSTB Natural Keratin Smoothing Treatment for Blonde Hair (System Kit) NKST Blonde with KC Primer & Keratin Obsessed : Target
Keratin Complex NKSTB Natural Keratin Smoothing Treatment for Blonde Hair - Keratin Obsessed (2 of 3 products in kit)	Product was used by a survey participant. Includes an FR (Diazolidinyl Urea), which is regulated in Washington State.	Keratin Complex NKSTB Natural Keratin Smoothing Treatment for Blonde Hair (System Kit) NKST Blonde with KC Primer & Keratin Obsessed : Target

Results

Sample Name	Product Name	Free Formaldehyde Result (ug/g)	Duplicate Result (ug/g)	FR identified on Ingredient List
MP_251218_CHP1	ION Keratin Smoothing Treatment (1 of 2 in Kit)	< 5	< 5	-
MP_251218_CHP6	ION Keratin Smoothing Treatment Clarifying Shampoo (2 of 2 in Kit)	< 5	< 5	-
MP_251218_CHP2	Cezanne Classic Keratin Smoothing Treatment Formaldehyde Free	11	11	-
MP_251218_CHP3	DAMANCI ZERO Keratin Treatment, Formaldehyde Free Keratin Hair Treatment, Anti Frizz, Revitalizing, Organic Hair Smoothing Treatment	31	34	-
MP_251218_CHP4	Keratin Complex NKSTB Natural Keratin Smoothing Treatment for Blonde Hair - NKST Blonde with KC Primer (1 of 3 products in Kit)	28,800	27700	Timonacic
MP_251218_CHP5	Keratin Complex NKSTB Natural Keratin Smoothing Treatment for Blonde Hair - Keratin Obsessed (2 of 3 products in kit)	334	339	Diazolidinyl Urea

Next Steps

- Finish Report
 - Conclusions and Recommendations
- Monitor for FRs in products in 2027
- Public education to share what we learned
- Roll this into a broader look at products in hair and nail Salons



Extra Slides



Survey

Intro to the Survey

The Hazardous Waste Management Program in King County (Haz Waste) is currently researching chemicals in hair straightening products. Our program, which is focused on supporting local communities in King County on issues related to toxic chemicals in consumer and professional products, hopes this effort can inform local communities on the issue and provide technical assistance to salons and local retailers that sell and use hair relaxers.

This survey is designed to gather feedback from hair professionals on chemical hair product inventory, barriers and challenges to adopting safer products*, and the impact of new cosmetic product regulations under the Toxics Free Cosmetics Act (TFCA). Your responses will help inform our research into these products and guide our next steps in supporting your industry within King County.

The survey should take approximately 60 min to complete. Please answer each question as honestly and completely as possible. There are no right or wrong answers, just your valuable perspective.

*Safer products are substitutes for another product that reduces or eliminates potential hazards to human health or the environment while still being able to perform the same or similar function.

General Information

Interview Date: ____/____/____ (Month/Day/Year)

Place of Business Zip Code: 98 _____

Cosmetologist Administrative Information

1. Contact Person Name: _____ (First Name/Last Name)

2. Telephone Number: (____) _____

3. Email: _____

4. What is your race or ethnicity? (Check all that apply)

- American Indian or Alaska Native
- Asian or Asian American
- Black or African American
- Hispanic or Latino/a/e/x
- Middle Eastern or North African
- Native Hawaiian or Pacific Islander
- White
- Prefer not to answer
- Other _____

5. Which of the following services do you offer your clients? (check all that apply)

- Haircutting and styling

- Hair coloring, such as balayage, foiling, or bleaching
- Chemical treatments, such as relaxers, perms, and curls
- Hair and scalp treatment
- Extensions and add-ons
- Lash/brow extensions
- Barbering
- Wig Styling
- Other _____
- Prefer not to answer

6. How do you get your hair products? (check all that apply)

- Direct from manufacturer
- Supplier outside of the United States
- Beauty supply store
- Local supplier or vendor
- Online retailer
- Wholesale distributor
- Salon chain or franchise supplier
- Homemade or custom-made products
- Other _____
- Prefer not to answer

7. If known, please provide the name(s) of up to three (3) distributors or retailers where you purchased products. Please include and indicate the one you get the majority of your products from.

Distributor/Retailer	Most used (Yes/No)
_____	_____
_____	_____
_____	_____

Survey

Product Inventory

8. Please list up to five (5) of your most often used hair straightening or relaxing products.

Product Name	Brand	How often are these products used?	How frequently must clients re-apply?
_____	_____	_____ clients per week	_____
_____	_____	_____ clients per week	_____
_____	_____	_____ clients per week	_____
_____	_____	_____ clients per week	_____
_____	_____	_____ clients per week	_____

9. Which of your products do you consider safer or free from harmful chemicals? Where do you go to find information about product or brand safety?

Understanding Barriers and Challenges to Safer Product Adoption

10. Have you considered trying to use safer products in your work?

- Yes → Go to Q11
- No → Skip to Q12

11. What makes it hard for you to switch to safer hair products? (Check all that apply)

- Available for purchase
- Client preference
- It costs too much
- Lack of information
- Doesn't work as well
- Doesn't last as long
- No barriers
- Brand loyalty
- Brand contracts
- I don't know where to get safer products
- Other: _____

12. Do your clients ask for hair products that are free from harmful chemicals?

- Yes
- No
- Sometimes
- Not sure

13. Have you tried natural, organic, or safer hair products?

- Yes → Go to Q14-15
- No → Skip to Q16

14. How did the natural, organic, or toxic-free hair products perform compared to traditional products?

- Much better
- Somewhat better
- About the same
- Somewhat worse
- Much worse
- Not sure
- Comments (optional):

15. What issues (if any) have you experienced when using natural, organic, or toxic-free hair products? Have you had any problems using safer products? (Check all that apply)

- Did not work as well
- Too expensive
- Hard to find
- Clients did not like the results
- No problems
- Other:

16. Are there other ways to provide safer hair care that we are not considering? If yes, please describe.

17. Do you think your clients would pay more for safer products?

- Yes
- No
- Maybe
- Not sure

Survey

18. Do you think switching to safer products would affect your business profits?

- Yes
- No
- Not sure

19. How important is it to your clients that hair products are safer?

- Very important
- Somewhat important
- Somewhat not important
- Not important at all
- Not sure

20. Are there cultural factors that might make it difficult to switch to toxic-free, “clean” or “green” hair products? If yes, please explain.

21. Would you be interested in learning more about safer chemical hair products?

- Yes
- No
- Not sure

22. Would you be interested in receiving financial support, such as a voucher, to try out safer products?

- Yes (If yes, how much would you need for it to be worth trying out safer products: _____)
- No
- Not sure

23. Our program offers in-person, non-enforcement technical assistance to identify toxic chemical use and hazardous waste generation. Would you be interested in a technical assistance site visit to discuss this topic further?

- Yes
- No

24. Would you be interested in other forms of support or training? This could include but is not limited to webinars, brochures, and workshops.

- Yes (If yes, please specify what form of support: _____)
- No
- Not sure

25. If support (including trainings, flyers, etc.) for safer hair products were available, would you like the information in a language other than English?

- No
- Yes (please specify): _____

Survey

Regulatory Awareness

26. Before this survey, did you know about Washington State's Toxic Free Cosmetics Act (TFCA)?

- Yes, I am familiar with TFCA and its details
- Yes, I heard of TFCA but do not know much about it
- No, I had not heard of TFCA

27. How familiar are you with the types of chemicals banned or restricted under TFCA? (formaldehyde, lead, phthalates and other chemicals of concern)

- Very Familiar
- Somewhat familiar
- Not familiar

28. Have you received any information regarding TFCA's rules? If yes, who provided it? (e.g., product vendors, professional organizations, regulators).

- Yes (from whom?): _____
- No
- Not sure

29. Do you know whether the products you currently use in your salon contain any of the chemicals restricted by TFCA?

- Yes
- No
- Not Sure

30. How do you determine whether a product is safe to use? (Select all that apply)

- The product is labeled "natural," "organic," or "non-toxic"
- Review ingredients label
- Rely on recommendations from others
- Check information from the manufacturer (For example, website or safety data sheets)
- Look for third-party certifications (For example, EWG certified or Cosmo's Organic/Natural)
- Review information online
- Not sure
- Other (please specify): _____

31. How confident are you in your ability to identify products that contain restricted or toxic ingredients?

- Very Confident
- Somewhat confident
- Not very confident
- Not confident at all
- Not sure

32. What support would help you understand the new regulations under TFCA?

33. Do you know what information is provided by the safety data sheets (SDS)?

- Yes
- No
- Not Sure

34. How do you dispose of unused hair products?

- Throw in the trash
- Pour expired or leftover products down the sink or toilet
- Dispose of at your local highly hazardous Waste facility
- I typically use all of my products
- Not sure
- Other (please specify): _____

35. Are there other chemicals or products you are concerned about that we haven't mentioned today? If yes, please describe.

Survey

Overall

36. Is there anything else you would like to share with our team?

37. How would you rate your overall experience completing this survey?

- Very poor
- Poor
- Fair
- Good
- Excellent

38. What could we do to improve this survey?

39. Would you be interested in having our team investigate the products that you use in your salon? We could do a more detailed inventory of your products and sample products for the presence of formaldehyde and other toxic chemicals.

- Yes (Please provide a phone number or email address for us to reach out to you): _____
- No