

## Open Call for Tenders

### Specifications

**“Promoting the autonomous implementation of the European framework agreement on occupational health and safety in the hairdressing sector” – VS/2019/0440**

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## 1. Background

Today in Europe, the hairdressing trade is estimated to amount to about 400.000 salons, more than 1 million employed people, about 8% of the total service sector, and approximately 350.000.000 potential clients. The hairdressing industry provides important services to European consumers. Because of this, it is vitally important that every aspect of the hairdressing industry works at the highest qualitative standard.

Occupational skin diseases are the second most common health problem in Europe. The costs of work-related skin diseases account for about 5 billion Euros a year in the EU. Hairdressing is the most high-risk profession for occupational skin diseases. In some countries up to 70% of hairdressers suffer from work-related skin damage such as dermatitis at some point during their career, which is least 10 times more than the average for workers of all sectors. Almost 40% of hairdressers report musculoskeletal complaints, five times more than the rate for workers of all sectors<sup>1</sup>.

Convinced of the crucial importance of preserving the good health of all persons working in the hairdressing salons and of preventing occupational risks in the sector, the European Social Partners in the hairdressing sector, namely UNI Europa Hair & Beauty and Coiffure EU have taken a number of initiatives to face these challenges:

- The "How to get along" Code of Conduct- Guidelines for European hairdressers signed in 2001<sup>2</sup>;
- The "Covenant on health and safety", in particular regarding the use and handling of cosmetics products and their chemicals agents concluded in 2007.
- The Declaration of Dresden - Common recommendation on skin protection for the hairdressing sector in Europe adopted in September 2010.

### 1.1 Context

In April 2012, UNI Europa Hair & Beauty and Coiffure EU, reached an agreement on clear guidance for hairdressers to work in a healthy and safe environment throughout their careers. The 2012 agreement, was the result of an autonomous initiative on the part of the workers and employers, building on existing national best practices in the Member States that are effective in reducing occupational health risks. It addressed specific risks like the use of materials, products, and tools to protect the skin and respiratory tract and the need for sufficient space and ventilation in salons where chemical substances are transferred or mixed. This agreement was aimed at regulating the sector and was tailor-made for small businesses, as hairdressing salons on average have less than three workers.

The benefits were clear for employers and workers alike in terms of lowering sick leave and absenteeism, reducing turnover of staff, and diminishing treatment and follow-up costs for health systems in treating occupational diseases. The signatory parties asked the Commission for their agreement to be made legally binding in the EU. As the social partner request was refused, the social partners decided to revise their Agreement with the support of the EU Commission's legal service to make it as legally sound as possible. In June 2016, the Social Partners in the hairdressing sector signed the revised 'European framework agreement on the protection of occupational health and safety'<sup>3</sup> hereafter the SPA.

Protecting the health and safety of hairdressers is crucial. Not only are their working conditions strenuous, they are 10 times more likely to develop skin conditions and 5 times more likely to develop

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<sup>1</sup> [https://osha.europa.eu/en/tools-and-publications/publications/literature\\_reviews/occupational-health-and-safety-in-the-hairdressing-sector](https://osha.europa.eu/en/tools-and-publications/publications/literature_reviews/occupational-health-and-safety-in-the-hairdressing-sector)

<sup>2</sup> <https://www.safehair.eu/en/safehair/homepage/>

<sup>3</sup> [https://www.uni-europa.org/wp-content/uploads/2016/06/EFA\\_OHS\\_HairdressingSector\\_signed\\_20160623.pdf](https://www.uni-europa.org/wp-content/uploads/2016/06/EFA_OHS_HairdressingSector_signed_20160623.pdf)

musculoskeletal diseases such as arthritis and tendinitis than the average worker. 20% of hairdressers develop work-related asthma and they are regularly exposed to chemicals that research suggests potentially causes cancer<sup>4</sup>. Furthermore, the promotion of sustainable working conditions in a mainly young female sector with a high prevalence of work-related illnesses and a high turnover of staff due to occupational health risks, will be a benefit for the many small hairdressing salons – and their owners.

The social partners jointly agreed with the European Commission services to move ahead with the autonomous implementation of the SPA and negotiated an Action Plan for that purpose. This Call for Tenders addresses specific topics of the Action Plan and will therefore contribute to the autonomous implementation of the SPA. This Call for Tenders is part of a larger project aimed at the autonomous implementation of the SPA in the EU. The larger project is implemented by the social partners directly and aims at facilitating and advancing the autonomous implementation of the SPA by implementing further actions contained within the Action Plan.

## 1.2 Description of the project

The larger project is a joint social partner project. It is related to the implementation of the results of European social dialogue outcomes, notably the SPA, in line with Article 155 of TFEU. It is structured around three topics:

1. Identification and prioritisation by risk category of hazardous and harmful chemical substances contained in cosmetic products.
2. Issuance of a methodological note on the risk assessment methodology used by the Scientific Committee on Consumer Safety (SCCS) concerning the professional use of cosmetic products rather than a consumer's use of those products.
3. Follow-up, promotion and monitoring of the autonomous implementation of the revised European Framework Agreement on occupational health and safety in the hairdressing sector at national level.

The social partners were encouraged in the framework of discussions with European Commission services, **to identify and prioritise problematic substances contained within cosmetic products**. The project will also seek to address reproductive health risks of hairdressers (notably female hairdressers) when using cosmetic products by also assessing reprotoxic substances contained within cosmetic products. Hairdressers are in contact with many chemical agents. Every salon uses as many as hundreds of substances and products. Apart from using water, the use of chemicals can lead to health risks:

- **Skin conditions (especially irritancy, allergenicity)**<sup>5</sup>: Hydrogen peroxide, ammonia, surfactants (soaps), Paraphenylenediamine (PPD), etc.
- **Respiratory conditions**: Phthalates<sup>6</sup>, etc.

Different scientific discussions are currently ongoing concerning:

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<sup>4</sup> [https://osha.europa.eu/en/tools-and-publications/publications/literature\\_reviews/occupational-health-and-safety-in-the-hairdressing-sector](https://osha.europa.eu/en/tools-and-publications/publications/literature_reviews/occupational-health-and-safety-in-the-hairdressing-sector)

<sup>5</sup> Lind ML, Boman A, Sollenberg J, Johnsson S, Hagelthorn G, Meding B. **Occupational Dermal exposure to permanent hair dyes among hairdressers**. *Ann Occup Hyg*. 2005;49: 473-480. Crepy MN. Dermatoses professionnelles aux cosmétiques. *DMT (INRS)*. 2006;107: 367-379.

<sup>6</sup> **Occupational phthalate exposure and health outcomes among hairdressing apprentices** - B Kolena<sup>1</sup>, I Petrovič<sup>1</sup>, M Šidlovská<sup>1</sup>, T Pilka<sup>1</sup>, M Neuschlova<sup>1</sup>, I Valentova<sup>1</sup>, L Rybansky<sup>2</sup> and T Trnovec

- **Reproductive risks**<sup>7</sup>: i.e. 57 studies are selected by the Working Group ANSM/INRS concerning reproductive toxicity for hairdressers and beauticians
- **Endocrine effects**<sup>8</sup>: There is for example a discussion concerning a high dose of resorcinol. The combined exposure to different cosmetic products should also be taken into account.
- **Mutagenic risks**
- **Carcinogenic risks**<sup>9</sup>: Formaldehyde above a certain threshold value of concentration, etc.

The social partners are aware of several contradictory findings because the composition of the hair dyes is altered often and there are many different types on the market, each with a different chemical composition. The project aims to identify problematic substances contained within cosmetic products. This identification needs to be complemented by a prioritisation of those identified substances in terms of dermal and inhalative toxicity / irritancy / allergenicity and harmfulness.

In order to review the methodology of the SCCS to take into account the over-exposure of the hairdressers' population to cosmetic products, much more than average consumers, the aim is to derive scientific data demonstrating and building the case of the higher exposure of professional hairdressers to cosmetic products in comparison to the one-off consumer exposure. Furthermore, unlike consumers, hairdressers are continuously exposed (occupational exposure) to skin hazardous substances at extremely high frequency (including water / wet work), which induces irritant contact dermatitis and drastically raises skin permeability. This then markedly enhances the hazardous effects of workplace cosmetics: facilitation of allergic contact dermatitis, and furthermore, induction and increase of their systemic toxicologic effects, for example regarding endocrine, mutagenic, carcinogenic, and reproductive risks. It must be emphasised that, unlike hairdressers' clients where skin contacts are limited, professional hairdressers are subject to significant and longstanding exposure to aqueous solutions and long hours of glove occlusion (so called "wet work"). Exposure to aqueous solutions combined with long hours of glove occlusion, vastly impairs the skin barrier function, and consecutively increases the uptake of hazardous cosmetic ingredients into the body.

## 2. Purpose of the Contract

This Call for Tenders is issued to achieve the following specific objectives:

- ❖ Identification and prioritisation of hazardous and harmful substances and ingredients contained in cosmetic products;
- ❖ Adoption of two Medical Reference Documents identifying and prioritising different substances and ingredients (including reprotoxic substances);

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<sup>7</sup> **Exposition aux produits cosmétiques et risques pour la grossesse chez les professionnelles de la coiffure** D. Lafon<sup>1</sup>, G. Abou-Anoma<sup>1</sup>, M. Bouslama<sup>1</sup>, D. Collot Fertey<sup>2</sup>, B. Fontaine<sup>3</sup>, R. Garnier<sup>4</sup>, M.A. Gautier<sup>1</sup>, A. Guilleux<sup>1</sup>, M. Ould Elhkim<sup>5</sup>, M.T. Labro<sup>6</sup>, C. Picot<sup>5</sup>, A. Radauceanu<sup>1</sup>, A.C. Roudot<sup>7</sup>, N. Sater<sup>5</sup>

<sup>8</sup> BEUC. **Endocrine disrupting chemicals – analysis of 66 everyday cosmetic and personal care products Ref.: X/2013/048-21/06/2016**

<sup>9</sup> Occupation and risk of Non-Hodgkin Lymphoma and its Subtypes: A pooled analysis from the InterLymph Consortium – volume 124, number 4, april 2016 – Environmental Health Perspectives.: *Confirmed associations of Non-Hodgkin Lymphoma NHL with specific occupations such as women hairdressers... Our pooled analysis of 10 international studies adds to evidence suggesting that hairdressing may contribute to NHL risk. Associations with women's hairdresser may be specific for certain NHL subtypes.*

- ❖ Adoption of a Methodological Note explaining and justifying the need to change the risk assessment methodology used by the SCCS concerning the professional use of cosmetic products rather than a consumer's use of those products.
- ❖ Participation in the Technical Working Group at the level of the CEN on the hairdressing glove standardisation process.

To achieve these specific objectives the social partners, outsource some tasks by means of this Call for Tenders. These tasks include a systematic literature review and elaboration of two medical reference documents (identification and prioritisation of harmful cosmetic substances) and the elaboration of a Methodological Note on the SCCS risk assessment methodology.

The first objective entails the conduct of a systematic literature review in the relevant electronic databases (i.e. MEDLINE, PUBMED, CINAHL, Web of Science, LIVIVO etc.). The second objective entails the thorough evaluation of the results of the systematic literature review and the drafting of the two Medical Reference Documents. The identification of the harmful and hazardous substances and ingredients will be complemented by a prioritisation of those identified substances and ingredients in terms of toxicity leading to local irritancy / allergenicity or systemic (reproductive, endocrine or carcinogenic) harmfulness effects. This strand of work will also address reprotoxic substances contained within cosmetics to the extent possible. The third objective entails the thorough examination and assessment of the SCCS risk assessment methodology and the drafting of the Methodological Note.

The prioritisation was requested by the Commission services given the important workload of the SCCS. The project will enable the hairdressing social partners to identify and prioritise harmful substances used by the hairdressers so that the issued Opinions of the SCCS are updated and perhaps generate new SCCS Opinions recommending revised occupational exposure thresholds. That is the aim of the two Medical Reference Documents and the Methodological Note.

The risk of adverse health is linked to the threshold values of hazardous substances and the degree of exposure. During the systematic literature review, attention will also be paid to studies that address the difference in exposure between an ordinary consumer and a professional hairdresser, which will allow us to better assess the exposure and associated health risks at the workplace and to share information and exchange medical and scientific data around exposure to those substances. The aim is to derive scientific data demonstrating and building a case over the higher exposure of professional hairdressers to cosmetic products in comparison to the one-off consumer exposure.

The hairdressing social partners have engaged discussions with the Commission services through the dedicated social dialogue committee on the very important issue of exposure to cosmetic products. All project objectives need to consider the exposure assessment process in the professional use of cosmetic products. Even when following the cosmetic products' instructions of use, hairdressers are exposed regularly and for significant hours and long periods to individual substances and to many compounded substances either in the cosmetic product or by combination and mixing of cosmetics products. A hairdresser colours about 6 times a day, as opposed to once a week for a semi-permanent colouring, or every 4 weeks for a permanent colouring.

Exposure can occur at the level of the skin as well as at the level of the respiratory tract. There are several challenges to derive independent scientific research in this area. The problem identified in the sector is that the SCCS methodology does not consider the difference in exposure to chemical substances between a professional hairdresser and a consumer. When issuing its Opinions, the SCCS considers individual consumer exposure to such substances and aggregates that minimal use to derive results for the

professional use of those substances. There is a lack of concrete data over exposure of cosmetic products as it is very difficult to obtain medical toxicity data according to exposure levels for particular chemical substances, given the cosmetics animal testing ban and the limitations in place for cosmetics compatibility and acceptability tests on human volunteer subjects.

Should differentiated and accrued exposure be proven, the SCCS would have to reconsider its data over exposure of these products and altering their Opinions to reflect the significantly higher exposure levels of professional hairdressers. For that purpose, the selected consultant will also be charged to examine the possibility of alternative research methods for the evaluation of the impact of chemical substances, considering the specific exposure of hairdressers. However, without increasing the risk for the participating hairdressers to develop negative effects, it could be envisaged to investigate a cohort study of students in schools, in different cities as an alternative. The different proposals will then be submitted to the SCCS.

As part of the mentioned Action Plan, the social partners have engaged the process of standardisation for hairdressing gloves. The fourth objective entails the participation of scientific experts in the work of the Technical Committee dealing with that standardisation request. This project has assigned a specific budgetary amount to enable the participation of such experts to the work of the Technical Committee.

The Project Steering Group will retain full control over the contents and design of the overall project including the project deliverables. The two Medical Reference Documents and the Methodological Note will form part of the overall Project Final Report. During each stage of the project, the selected contractor will work in close collaboration with the project steering group composed of both European social partner representatives. The next chapter describes in detail the tasks that are expected to be performed by the selected external consultant.

### 3. Tasks to be performed by the External Consultant

#### 3.1. Description of tasks

The selected external consultant can be a single undertaking (research institute, university, consultancy etc.) or a grouping of undertakings acting as a research consortium. Given the complexity and scientific expertise needed for the subject-matter, the European social partners would like to engage a consortium of researchers coming from different disciplines relevant for the action as well as from different countries.

The selected external consultant's main tasks will be to:

- conduct a **systematic literature review** in the relevant electronic databases (i.e. MEDLINE, PUBMED, CINAHL, Web of Science, LIVIVO etc.) to identify harmful and hazardous cosmetic substances and ingredients as listed on the European **Cosmetic ingredient database**<sup>10</sup>. Please refer to the list in Annex as well.
- evaluate the degree of exposure to hazardous cosmetic substances and ingredients as listed in the European **Cosmetic ingredient database** by means of a systematic literature review<sup>11</sup>.

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<sup>10</sup> [https://ec.europa.eu/growth/sectors/cosmetics/cosing\\_en](https://ec.europa.eu/growth/sectors/cosmetics/cosing_en)

<sup>11</sup> [https://ec.europa.eu/growth/sectors/cosmetics/cosing\\_en](https://ec.europa.eu/growth/sectors/cosmetics/cosing_en)



- taking the **SCCS Opinions**<sup>12</sup> into account, draft a **Medical Reference Document** which identifies cosmetic substances and ingredients that can have negative and adverse health impacts on hairdressers. This identification should address the professional use (**higher prevalence of exposure**) of these substances and ingredients to the extent possible as well as the combined use (**compounded forms**) of such substances and ingredients. This Medical Reference Document should also address identified substances and ingredients that may not be listed in the European **Cosmetic ingredient database**, such as **reprotoxic and mutagenic substances**.
- conduct a scientific prioritisation or hierarchisation in terms of toxicity / irritancy / allergenicity and negative exposure effects of the identified cosmetic substances and ingredients through the systematic literature review. This should be presented as the second **Medical Reference Document**.
- On the basis of the systematic literature review and the two Medical Reference Documents, draft a **Methodological Note** showcasing the difference in exposure between a consumer and a professional hairdresser. The Methodological Note will be presented to the SCCS as a deliverable from this project to consider reviewing their methodology when it comes to the risk assessment protocols for cosmetic products. It is important to build a case over the higher exposure of professional hairdressers to cosmetic products in comparison to the one-off consumer exposure.
- throughout the research and literature review, the selected consultant is asked **to examine the possibility of alternative research methods for the evaluation of the impact of cosmetic substances**, taking into account the specific exposure of hairdressers.
- depending on the degree of advancement of the research, the research consortium or selected consultant may be invited to present the different deliverables during the foreseen national seminars as part of the overall project. It is the task of the Project Steering Group to organise those. The selected consultant will be invited to the project's foreseen **Final Conference** to present the work and project deliverables.
- **the research consortium will have to provide the two medical reference documents (identification and prioritisation of substances) and the analytical methodological note over professional exposure in the sector to inform the SCCS, which will be contained in the Final Report.**
- the European social partners are engaged in the work around the **hairdressing glove standardisation process** at EU level. The two Medical Reference Documents will also serve this standardisation process. It is in this framework that experts can be invited to contribute to the work of the Technical Committee. The selected consultancy or consortium can also benefit from earmarked funding to participate in the hairdressing glove standardisation process.
- **Tender applicants are encouraged to make proposals covering also the standardisation aspect, such as the submission of the Medical Reference Documents to the dedicated Working Group.** Taking part in the standardisation work on the hairdressing 'gloves' would imply the participation of experts in the work of the Technical Working Group.

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<sup>12</sup> [https://ec.europa.eu/health/scientific\\_committees/consumer\\_safety/opinions\\_en](https://ec.europa.eu/health/scientific_committees/consumer_safety/opinions_en)



**3.2. Guidance and indications on tasks execution and methodology**

Throughout the project, the project steering group will follow progress on the research, advise and steer the direction of this work as and when necessary to ensure it continues to meet the project’s objectives. The selected contractor will work in close cooperation with the Project Steering Group on the overall management of the contract, while the administrative aspects of their contract will be handled by the project lead in UNI Europa Hair & Beauty.

**4. Expertise Required**

As stated, the European social partners would like to engage a consortium of researchers coming from different disciplines relevant for the action as well as from different countries. Disciplines of importance are medical sciences specialisations such as dermatology, respiratory tract experts, toxicology, exposure to chemical substances experts etc. The reasoning behind the call for a wide geographical scope is to harness as much expertise as possible and to build upon risk and exposure classifications that have been implemented in different European countries. The aim is to not start from scratch but to use and foster existing knowledge and data.

The external consultant teams ought to exhibit expertise in the following fields:

- Knowledge of EU Occupational Health and Safety policy
- Knowledge of the Cosmetics Regulation and its risk assessment procedures.
- Knowledge of the work of the SCCS as well as its methodological practices
- Scientific and medical data analysis
- English language

The external consultant should exhibit expertise in the above broad subjects with a proven experience of conducting scientific and medical research as well as data analysis. The external contractor should have an excellent understanding of the European Occupational Health and Safety framework and the specific procedures for market authorisation of cosmetic products. Knowledge of the hairdressing sector from a European social dialogue perspective is not mandatory. Knowledge of the occupational health and safety risks faced by hairdressers would be an asset but is not mandatory.

**5. Time schedule and Reporting**

Overview of the time schedule for the overall project

Phase	Responsible	Task
▶ Phase 1 September 2020 – November 2020	<ul style="list-style-type: none"> <li>• Project Steering Group</li> </ul>	<ul style="list-style-type: none"> <li>• Issuance of Open Call for Tender</li> <li>• Selection of external consultant consortium</li> <li>•</li> </ul>
▶ Phase 2 December 2020 – May 2022	<ul style="list-style-type: none"> <li>• Project Steering Group and External consultant</li> </ul>	<ul style="list-style-type: none"> <li>• Launch of the Systematic Literature Review</li> <li>• Drafting of 2 Medical Reference Documents based on the systematic literature review</li> </ul>

		<ul style="list-style-type: none"> <li>• Drafting of Methodological Note on the over-exposure of hairdressers to cosmetic products</li> <li>• Expert participation in Hairdressing 'Glove' standardisation</li> <li>• Participation of the external consultant to the overall project's regional seminars</li> </ul>
<p>► Phase 3 June 2022 – September 2022</p>	<ul style="list-style-type: none"> <li>• Project Steering Group and External consultant</li> </ul>	<ul style="list-style-type: none"> <li>• Staging the Final Conference (Project Steering Group)</li> <li>• Drafting the final project implementation report (Project Steering Group).</li> <li>• The external consultant will participate to the Final Conference</li> </ul>

The lead applicant, UNI Europa Hair & Beauty is responsible for the overall execution of the project. The Project Steering Group is composed by both UNI Europa Hair & Beauty representatives and by Coiffure EU representatives. The main contact point with the selected external consultant will be UNI Europa Hair & Beauty. The selected external consultant will report to the Project Steering Group. Depending on the overall progress on the project's deliverables, the selected external consultant would be invited to participate to the overall project's events (Regional Seminars). Costs must not be calculated in the proposed bids for these events as the participation of the external consultant would be covered by the overall budget of the project and will be administered by UNI Europa.

## 6. Payments and standard contract

The payments for this contract will be made as follows:

1. 30% of the offer upon signature
2. 30% of the offer at interim stage or around 02 June 2021
3. 40% after receipt of final deliverables at the end of the project

## 7. Price

The maximum price of this contract will be **170.000 Euros (VAT included)**.

**150.000 Euros (VAT included)** is earmarked for the systematic literature review, the data collection and analysis, the two Medical Reference Documents and the Methodological Note on the over-exposure of hairdressers to cosmetic products.

**20.000 Euros (VAT included)** is earmarked for the contribution (Expert participation) to the standardisation work of the hairdressing gloves.

Travel and accommodation costs incurred by the external consultant in the framework of this project will be covered through the project's budget by UNI Europa, according to the European Commission's reimbursement rules. The costs related to travel and accommodation of the consultant team should not be included in the overall offer. They will be covered within the framework of the project.

## 8. Selection Criteria

The following criteria will be taken into account to make a selection among external contractors:

- The presentation of the bid must be clear, well-constructed and responding to the demand.
- The bid should present to the extent possible a timeline for each deliverable (literature review, data analysis and consolidation, duration of the data analysis phase).
- The clarity and efficacy of the presented methodology is of high importance. The Research consortium ought to deliver the deliverables within the set-out timeframe of Phase 2.
- A team of international researchers would be an important asset
- A pluri-disciplinary team would be an asset
- The presentation of additional ideas would be appreciated
- The bid should be sent both in electronic and paper version

As stated previously, the social partners would encourage applicants to engage a consortium of researchers coming from different disciplines relevant for the action as well as from different countries.

## 9. Award criteria

The contract will be awarded to the tenderer whose offer represents the best value for money - considering the following criteria:

- Proposed methodology
- Experience in producing similar project deliverables (Medical Reference Documents and OHS risk assessment methodological notes)
- Quality and clarity of the presented bid in view of attaining the project deliverables

## 10. Procedure and presentation of the bids

Interested parties must submit their proposals to **Dimitris Theodorakis**, Director at UNI Europa Hair & Beauty ([address below](#)) by regular post, and by e-mail to [dimitris.theodorakis@uniglobalunion.org](mailto:dimitris.theodorakis@uniglobalunion.org) , **by Wednesday 21 October 2020 at the latest.**

The proposal representing best value for money will be selected. If there are two or more, selected, then invitations to attend a selection panel will be sent to the appropriate bidders.

Dimitris Theodorakis  
**UNI Europa**  
**Rue Joseph II, 40**  
**1000 Brussels**  
**Belgium**

## ANNEX

### Future standard for hairdressers' gloves: draft list of test chemicals submitted by Prof. JD Johansen, Dep of skin and Allergy, Gentofte Hospital, University of Copenhagen, Denmark - 05.02.2020

#### Hairdressers gloves

List of suggested test chemicals: test concentration in **bold**.

Chemical	Cas no	Function	Before mixing	Use concentration	Remarks/rationale
p-phenylene diamine <b>4%</b>	106-50-3	Hair dye (oxidative)	Usually <b>4%</b> , as oxidative hair dyes usually are mixed 1:1 with a developer (oxidizer)	2% after mixing Calculated as free base <sup>13</sup>	Strong allergen, frequent cause of allergy in hairdressers 1-3). To be printed on label: 'can cause severe allergic reactions' Is present in 15-47% of oxidative hair dye products on the marked 4,5)
Toulene 2,5 diamine <b>8%</b> (free base)	95-70-5	Hair dye (oxidative)	Arguments as above: <b>8%</b>	4% after mixing Calculated as free base <sup>1</sup>	Arguments as above. Is present in 46%-80% of oxidative hair dye products on the marked 4-5)
Hydrogene peroxide <b>12%</b>	7722-84-1	Oxidiser	Cosmetic regulations: Max: <b>12%</b> <sup>1</sup>		Used for oxidizing permanent hair dyes, infrequent/not allergen 3), but may affect glove resistance 6)
Hydrogene peroxide <b>12%</b> mixed with PPD <b>4%</b>	7722-84-1  106-50-3	Mimic hair dying (oxidative)	Concentrations as above mixed 1:1		PPD has been shown to penetrate some glove materials even after oxidation (7)

<sup>13</sup> [https://ec.europa.eu/growth/sectors/cosmetics/cosing\\_en](https://ec.europa.eu/growth/sectors/cosmetics/cosing_en)

Ammonium persulfate <b>60%</b>	7727-54-0	Bleach/oxidiser	Unrestricted in cosmetics. Persulphates can constitute up to <b>60%</b> of a hair bleaching product (9)		May be used as powder. May cause allergic contact dermatitis (2), urticaria and asthma (8)
Glyceryl thioglycolate (GTG) <b>20%</b>	30618-84-9	Hair waving or straightening (acid wave)	Restricted to max 11% <sup>1</sup> calculated as thioglycolic acid, which corresponds to <b>20%</b> GTG (10)		Known allergen in hairdressers (2), still frequent even though use has been reduced at least in Germany.
Cysteamine hydrochloride <b>9%</b>	156-57-0	Hair waving	Unrestricted In cosmetics	Use concentration <b>9%</b> <sup>14</sup>	Emerging allergen (1,2). Use concentration unknown
Sodium lauryl sulphate (SLS) <b>50%</b>	151-21-3	Surfactant	Unrestricted in cosmetics.	In shampoo up to <b>50%</b> (11)	Not an allergen, but surfactant, which is a major cause of irritant contact dermatitis in hairdressers. Used in shampoo.
Ethanol <b>100%</b>	64-17-5	solvent	100%		In may occur in sprays, may affect glove resistance.
Methylene glycol (a formaldehyde donor)					contained in hair straightening products in concentrations of 2%

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<sup>14</sup> <https://patents.google.com/patent/US5382426A/en>

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