



## **POLICIES IN HANDLING THE USE OF HYDROQUINONE AND MERCURY HAZARDOUS SUBSTANCES IN COSMETICS AND WHITENING CREAMS**

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### **Abstract**

There is a trend on the increase in the use of cosmetics and whitening creams containing hazardous substances such as hydroquinone and mercury. This trend was caused by women's demands to appear beautiful and attractive as well as its great financial potential. Unethical producers of cosmetics and whitening creams utilize this trend by inserting products with hazardous substances such as hydroquinone and mercury. These two hazardous substances impose health risks. Hydroquinone brings the risks of exogenous ochronotic, cataract, colloid milia pigments, sclera, nail pigmentation, loss of skin elasticity, and impaired skin healing. The use of hydroquinone for years may also cause symptoms of dark spots, allergies, and skin irritation. High dosages can cause permanent damage to the brain, cancer, kidney disease, and fetus development disorders. Mercury exposure may cause vomiting, diarrhea, and lung damage. It is also a carcinogenic substance. Policies on handling cosmetics containing hydroquinone and mercury hazardous substances need to be intensified to prevent more victims.

**Keywords:** Policies, mercury, hydroquinone, cosmetics, whitening creams.

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## **1. Introduction**

There is a new trend in medical aesthetics. Individuals undergo this to obtain both general checkups and rehabilitation; it is usually performed by patients in developing countries looking for medical services. Among cosmetics favored by Indonesian women is whitening creams. Cosmetics are things related to face and body skin, which function to clean, maintain, and protect the skin, as well as to keep skin integrity. They also function to beautify, improve, and change one's appearance. Creams are a type of cosmetic that have various functions, such as hydrating skin, beautifying or changing appearance, up to its protective benefit such as protecting the skin from bacterial or fungal infections. Some cosmetics can also heal wounds on the skin [1]. A type of cosmetic is whitening creams. There is high demand for such creams as they have the benefit of making skins cleaner and have a lighter tone [2]. The prevalence of whitening cream usage among women is 72,4% and 27,6% among men. Whitening creams contain active ingredients that can inhibit the formation of melanin, thus making the skin a lighter tone [3].

Whitening creams are a material preparation or a combination of materials used on the outer part of the body which function to brighten or change the skin color, making the skin have a clean and light appearance, as well as a glowing tone. Many people, especially women, use cosmetics, with whitening creams being one of them, to beautify their skin and faces. Women's demands to have a beautiful and light-skinned appearance also contribute to the growth of beauty clinics that provide beautifying services, cosmetics, and whitening creams [4].

Based on the Regulation of the Republic of Indonesia's Ministry of Health No. 445/Menkes/Per/V/1998, cosmetics are defined as material preparation or a combination of ingredients that are ready to be used on the outer parts of the body (epidermis, hair, nails, lips, and outer genitals), teeth, and mouth cavity to clean, add attractiveness, change appearance, protect the skin to keep it in a good condition and fix body odor. But they do not aim to treat or heal diseases [5].

Cosmetics are a component of attire that has a great role in the life of society in general. Society certainly depends on the provision of cosmetics at every opportunity. Modern people's main goals in using cosmetics include maintaining personal hygiene; increasing attractiveness through make-up; increasing confidence and tranquility; protecting skin and hair from the damages caused by ultraviolet light, pollution, and other environmental factors; preventing aging; and generally helping people enjoy and appreciate life more [6].

There are issues in the usage of cosmetics, whitening creams, and beautifying services. For instance, some

of these products contain hydroquinone and mercury hazardous products. Mercury is categorized as a dangerous heavy metal that can be toxic in small concentrations. If heavy metal is accumulated in the body of an organism, it can inhibit the performance of enzymes, disturbing the metabolism process. Even, they can cause and trigger allergies. This substance can be a mutagen, teratogen, or carcinogen for humans [7].

The use of mercury in whitening creams can cause various side effects, starting from allergies, irritation, and the change in skin color, and in some cases cause death. The effects of the use of mercury start from the emergence of black spots on the skin, which will in the end cause skin allergies and irritation [8].

Cosmetics in the form of creams containing hydroquinone are often used to eliminate dark skin spots. Hydroquinone takes a long time to lighten the skin. Higher hydroquinone dosages will work faster. But such high dosages will give unwanted side effects, such as the emergence of various diseases, including vitiligo (the loss of skin pigments, forming white areas like tinea versicolor) up to exogenous ochronotic (where the skin changes into black or blue with a burning and itchy feeling) [9]. The use of hydroquinone for years may also cause symptoms of cancer, kidney disease, and cell proliferation. This substance is potentially carcinogenic and teratogenic [10]. From the issue above, the problem of this research is: What policies can handle the misuse of hydroquinone and mercury chemical substances in cosmetics and beauty services?

## **2. Methods**

This research employed the normative juridical method [11]. The approaches used in this research were the statutory approach and the library approach [12]. The authors analyzed literary materials using qualitative analysis to discuss policies on handling the misuse of hydroquinone and mercury hazardous chemical substances in cosmetics and beauty services. This paper was a legal discourse with an argumentative basis about the importance of this policy.

As normative-juridical research, the primary data were obtained from theories, opinions, and findings from books and journals [13] that discussed the root of the misuse of hydroquinone and mercury hazardous chemical substances in cosmetics and beauty services in Indonesia. The authors also sought materials that discussed the relationship between policy and the abuse of hydroquinone and mercury in Indonesia and how the state acknowledged the occurrence of the abuse, its effects after abuse, as well as how to control it with laws and policies.

The data were analyzed using the qualitative method. The data was analyzed based on the systematic understanding and processing of the data, that were obtained from legal inventoring and literary study. Research showed factors that influenced the implementation of the policy in prohibiting hydroquinone and mercury hazardous chemical substances in cosmetics and beauty services, considering that many cosmetic producers and beauty clinics misuse them by inserting them into cosmetic products, thus endangering consumers.

### **3. Results And Discussion**

Hydroquinone >2% is categorized as a potent drug and is used to treat hyperpigmentation, melasma, chloasma, spots, and post-inflammatory hyperpigmentation. It can only be used with a doctor's prescription. Long-term use of a high dosage of hydroquinone can bring some side effects, including include exogenous ochronotic, cataract, colloid milia pigments, sclera, nail pigmentation, the loss of skin elasticity, and impaired skin healing [14].

Research conducted by Tan showed that from 2014 to 2019, 88 patients suffered from exogenous ochronotic due to hydroquinone contained in whitening creams and 92,04% of these patients were women [15]. Mercury is a hazardous heavy metal which is toxic even in low concentrations. Mercury is often added to cosmetics as it can lighten the skin tone by inhibiting the production of melanin [16]. In Indonesia, there is already a regulation that prohibits the use of hydroquinone in cosmetic products and health services. This is regulated in the Republic of Indonesia's Regulation of the Head of the Food and Drug Supervisory Agency No. KH.03.1.23.08.11.07517 of 2011 on the technical guidelines of the hydroquinone cosmetic ingredient. This product has been prohibited from being used as a whitening ingredient in cosmetics. Hydroquinone can only be used as cosmetics for artificial nails with a level of 0,02%. Meanwhile, mercury cannot be added to cosmetics at all, because mercury and its compound are categorized as prohibited cosmetic ingredients according to the Regulation of the Head of the Food and Drug Supervisory Agency No. HK.00.05.42.1018 of 2008 on Cosmetic Ingredients. Apart from the Regulations of the Head of the Food and Drug Supervisory Agency, there is also the Regulation of the Republic of Indonesia's Ministry of Health No. 57 of 2016 on the National Action Plan to Control Health Impacts Due to the Mercury Chemical of 2016-2020 [17]. Mercury is categorized as one of the many chemical substances that contain bioaccumulative chemical compound continuity that can bring negativity to the human condition [18].

Indonesia has ratified the Minamata Convention to prevent the use of mercury. This is because mercury and its compound are chemical substances that have dangerous impacts on humans [19]. The case of the emergence of the Minamata disease that started to occur in 1958 in Minamata City, Japan was an example of the effects of excessive amounts of mercury [20]. This case originated from the Chisso industry that caused intoxication impacts. It even caused many people to suffer from nerve paralysis and hundreds to die due to its contents[21].

The people of the world in general and also specifically the Japanese people started to realize the dangers of mercury for physical health. A conference was organized, participated by representatives of many countries. They discussed and negotiated the global agreement on mercury. This conference resulted in the Minamata Convention on Mercury which was signed by 128 countries, including Indonesia and the European Union. Up to now, only 12 countries have ratified this convention. Thus, the norms it contained have not yet been in effect. This is because Article 31 clause (1) of this convention required 50 ratification instruments [22].

Then, Article 4 regulated the prohibition against the distribution of goods containing mercury by "taking the right steps" to "not permit" the production, import, or export of new products containing mercury. Prohibited products were stated in the appendix. Products scheduled to be prohibited in 2020 were contained in Appendix A of this agreement. Apart from endangering the body, this dangerous substance also impacts the environment [23].

The next research findings showed that there are drugs and treatment products that use ingredients violating constitutional regulations. They are prohibited as they bring dangers, such as mercury, hydroquinone, and steroid. Based on the results of research that checked the hydroquinone and mercury hazardous contents of aesthetic clinic products, it was shown that 90% of treatment creams contained these two substances. Mercury usage is prohibited as it imposes dangers when inserted into cosmetic products. Meanwhile, hydroquinone is still permitted so long as it does not exceed the standard regulated by the constitutional regulations, i.e., 0.2% of hydroquinone, only for nail treatment.

Business owners producing dangerous cosmetics and whitening products are imposed with sanctions according to constitutional regulations. Article 197 of Law No. 36 of 2009 on Health stated that anyone who purposefully produces or distributes pharmaceutical provisions or health instruments that lack distribution permits as stipulated in Article 106 clause (1) is imposed with imprisonment of 15 years and fines of 1,5 billion rupiahs [24]. Other sanctions are stipulated in Article 62 clause 1 of Law No. 8 of

1999 on Consumer Protection. It threatens perpetrators with 5 years of imprisonment and 2 billion rupiahs of fines [25].

Regulations on prohibitions and sanctions have already existed. They are adequate but many people still violate them [26] by selling whitening cosmetics and creams containing hydroquinone and mercury hazardous chemical products. This is because cosmetics with these dangerous substances can produce fast results, making the skin lighter, clearer, and softer. This brings companies great profits. But such cosmetics also bring horrifying side effects.

The Food and Drug Supervisory Agency need to make strict policies on the examination of whitening cosmetics and creams. If it was found that there are unsuitable cosmetic and cream products (which are deemed as feasible by the Food and Drug Supervisory Agency but actually contain hydroquinone and mercury hazardous chemical substances), their production and distribution permits must be revoked. Then, the producers must be brought to trial. The law-enforcing apparatus must investigate producers of illegal cosmetics containing hydroquinone and mercury hazardous chemical substances. Apart from that, the Food and Drug Supervisory Agency must routinely announce legal cosmetics that violate the regulations as well as illegal cosmetics to the public. This is to make the public aware of cosmetics containing hydroquinone

and mercury so that they can take steps to avoid them.

So far, prosecution policies imposed in the case of the violation of cosmetics containing hydroquinone and mercury hazardous substances are viral. Prosecution policies were carried out in cases that cause casualties. But such policies are highly ineffective in preventing and eradicating cosmetics with hydroquinone and mercury hazardous substances.

#### **4. Conclusion**

Business owners producing dangerous whitening cosmetics and creams are imposed with rather severe sanctions based on the law. Perpetrators are threatened with 1 to 5 years of imprisonment and fines of 1,5 to 2 billion rupiahs. The threats of these sanctions do not make producers and sellers of cosmetics containing hydroquinone and mercury hazardous substances feel deterred. The situation is like so because there is a lack of strict law enforcement as the prosecution is only carried out after casualties have fallen. The Food and Drug Supervisory Agency need to make strict and strong policies to eradicate whitening cosmetics and creams containing hydroquinone and mercury hazardous substances.

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