



## Is Kohl Dangerous?

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The word, “kohl” is derived from the Arabic, “kuhl”, “kuhl”, “kohhel”, “kohol” and “cohol” which means “powder used to darken the eyelids, eyelashes and eyebrows.” Kohl is also known as “surma” which is an Urdu word to refer to antimony, as its major component is antimony sulphide (Goswami, 2013). According to Goswami (2013), surma is a mineral that is mined and ground into a form of powder, and it has been used for centuries for cosmetic purposes and to ward off evil forces. Kohl or surma is also called “kajal” in India and “tiro” in Nigeria (Hardy et al., 1998).

Kohl in Malay language is called “celak” and wearing celak among Malays is usually associated with following the “sunnah” (way or habitual practice of the Prophet) of the Prophet Muhammad p.b.u.h as recommended in the teachings of Islam. According to Alhadi et al. (2021), in the book, *Al-Syamail Al-Muhammadiyah* by Imam Tirmizi, there is an explanation about “ithmid”, a type of eyeliner made of a stone that was usually in the form of powder and was black and blue. Ithmid powder was what the Prophet used to apply on the eyelashes and the use of this type of eyeliner is more synonymous with the Arab culture (Alhadi et al., 2021).



In ancient times, the most distinctive feature of Egyptian cosmetics is said to be eye makeup where green and black were the most prevalent colours (Mahmood et al., 2009). Malachite, a copper oxide, was the source of the green pigment (Mahmood et al., 2009). As for the black eye paint (kohl), it was generally composed of galena, a lead sulphide (Mahmood et al., 2009) and it is said that galena was found near the Red Sea (Pauline, 2007). Kohl was very important to the Egyptians that it was applied before mummifying the corpse and exquisite vials of it accompanied the mummy on the journey to the afterlife, where they would be kept forever (Mahmood et al., 2009).



*Kohl bottle and applicator*

For the chemical composition of kohl, it is concluded that galena was the main ingredient (Mahmood et al., 2009). Galena is found in the form of greyish black cubic crystals that are highly insoluble in water or watery medium. Other metals like silver, copper, zinc, and so on could be found in very low amounts in this rock (Mahmood et al., 2009). Based on various research, records, and observations, Mahmood et al. (2009) concluded that the terms “al-kuhl” (kohl), “surma” and “ithmid” (ismad) suggest that the material was actually only galena, and rarely it was antimony sulphide. Antimony is a silvery white brittle metal of medium hardness, and it is a common ingredient of metal alloys which contain lead and copper (Tyenda et al., 2015). Stibnite is a grey mineral that is the main ore of antimony. Historically, antimony sulfide was found in an Egyptian cosmetic case from the year 2500 BC, which was used as a paint for the lips (Tyenda et al., 2015). Kohl was initially used to prevent any eye problems and the sun’s glare was also reduced by darkening around the eyelids (Mahmood et al., 2009). Besides, kohl is said to be able to treat conjunctivitis, blepharitis, trachoma, chalazion, pterygium, and trichiasis, among other eye disorders (Al-Akily et al., 2019).

Despite the claimed benefits of kohl, the contentious issue of the dangerous chemical reaction of kohl to the eyes is still debated today. Kohl toxicity or the increase of kohl-related blood lead concentration after applying it to the eyes as reported by scholars is more of a theoretical health danger rather than a practical one. Nevertheless, the study conducted by Goswami (2013) denies this claim as it was discovered that there was a link between the usage of surma and the increased blood lead concentration. McMichael and Stoff (2018) stated that many doctors believe the use of kohl causes lead poisoning, however new scientific publications have proven otherwise.

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Despite the claims about kohl being safe, in a recent study by Rasheed et al. (2021) on five popular brands of commercially accessible kohl powder collected from local marketplaces at Sulaimani City in Kurdistan Region, Iraq, it was revealed that there is no indication of fungus contamination in the five kohl brands, according to mycological analysis. However, it was discovered in the same study that the kohl brands marketed in Sulaimani city are not safe to be used since they might act as a medium for the transfer of potentially harmful organisms or be contaminated with heavy metal. Despite this fact, the results of this study show that original stone combined with Zamzam water, is the safest kohl among the others (Rasheed et al., 2021). In conclusion, more studies should be conducted in future in order to confirm the claims whether kohl is dangerous or safe for use. Besides, safety guidelines for using kohl should be made visible on the kohl products so that consumers can take the necessary precautions and avoid any unwanted effects.

## References

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Answers to Riddle on page 24:

1. Breath.
2. A coat of paint.
3. A bank.
4. Just one after that it's not empty anymore.

