



Mineral oils in cosmetics: Considering all available scientific evidence, no health risks are to be expected from absorption via the skin

BfR Opinion No 014/2015 of 26 May 2015

Cosmetic products can contain mineral oils. These are naturally occurring, complex mixtures of hydrocarbons of various structures and sizes. They are differentiated into MOSH (mineral oil saturated hydrocarbons) and MOAH (mineral oil aromatic hydrocarbons). The latter can contain potentially carcinogenic substances such as polycyclic aromatic compounds. According to the EU cosmetics regulation, mineral oils are only permitted in cosmetic products if the full refining history is known and either the starting material is free of carcinogens or the distillate was tested for carcinogenic properties using specific methods. This is intended to prevent the use of mineral oils which contain substances causing adverse health effects.

The Federal Institute for Risk Assessment (BfR) has investigated for quite some time the oral intake of MOAH which can migrate from packaging material into food. The institute has now performed a risk assessment of the dermal absorption of MOSH and MOAH from mineral oils used in cosmetic products. As no representative data on MOSH and MOAH content in cosmetic products have been available so far, the BfR has conducted random spot checks on various cosmetic products. In its analyses, the institute measured MOAH concentrations of up to 5 %. In order to generate a representative data basis the BfR recommends that monitoring programmes should be conducted which determine MOAH concentrations in cosmetic products. The presence of MOAH in a cosmetic product does not necessarily mean that the product is of concern for human health. Considerable data gaps exist at the moment, however, which make a risk assessment difficult. There is, for example, a lack of reliable data on the uptake of mineral oil through the skin reflecting in particular long-term and repeated dermal exposure. Furthermore there are data gaps regarding a possible oral intake of hydrocarbons from lipsticks and hand cremes containing mineral oil.

Considering all available scientific evidence, health risks for consumers caused by the uptake of the mineral oils in cosmetics through the skin are unlikely from the BfR's point of view. No effects on health attributable to the mineral oil components of cosmetic products have been reported up to now despite the fact that they have been in widespread use for many years. In the opinion of the BfR, state-of-the-art technology should nevertheless be used to reduce the MOAH content in cosmetic products to the trace amounts which are unavoidable. A final risk assessment of the absorption of mineral oil through the skin can only be carried out by the BfR when more data becomes available.

		BfR Risk Profile: Mineral Oil in Cosmetic Products (Opinion No. 014/2015)			
A Affected groups	General population 				
B Probability of a health impairment through the use of cosmetics containing mineral oil (dermal uptake through the skin)	Practically excluded	Unlikely	Possible	Likely	Assured
C Severity of the health impairment through the use of cosmetics containing mineral oil (dermal uptake through the skin) [1]	No impairment	Slight impairment [reversible/irreversible]	Moderate impairment [reversible]	Severe impairment [reversible/irreversible]	
D Reliability of available data [2]	High: The most important data are available and consistent		Moderate: Several important data are missing or inconsistent		Low: Numerous important data are missing or inconsistent
E Controllability by consumers [3]	Control not necessary	Controllable through precautions	Controllable through avoidance	Not controllable	

Fields highlighted in dark blue indicate the properties of the risk assessed in this opinion (more details on this are contained in the text of BfR Opinion No. 014/2015 of 26 May 2015).

Explanations

The purpose of the risk profile is to visualise the risk outlined in the BfR opinion and not to make risk comparisons. The risk profile should only be read in combination with the opinion.

[1] – Line C – Severity of the health impairment through the use of cosmetics containing mineral oil (uptake through the skin)

The data available up to now show no health impairments. There are currently no indications of health effects including cancer through the dermal application of cosmetic products containing mineral oils.

[2] – Line D – Reliability of the data

There is currently a scarcity of data on the levels of aromatic hydrocarbons (MOAH) in cosmetic products and their toxicology.

[3] – Line E – Controllability by consumers

The details in this line have a descriptive character and should not be seen as a recommendation by the BfR. The BfR has given recommended courses of action in its opinion. According to the latest level of available knowledge, health risks for consumers resulting from the uptake of mineral oils in cosmetics through the skin are not to be expected. In this regard, the BfR recommends that data be collected by each federal state of Germany within the scope of national monitoring. The BfR also recommends the reduction of MOAH levels in cosmetic products to the greatest technologically possible extent.

FEDERAL INSTITUTE FOR RISK ASSESSMENT (BfR)

The full version of this BfR Opinion is available in German on

<http://www.bfr.bund.de/cm/343/mineraloel-in-kosmetika-gesundheitliche-risiken-sind-nicht-zu-erwarten.pdf>