

## **Sunscreen: According to the current state of knowledge zinc oxide as UV filter is safe**

BfR Opinion Nr. 037/2010, 18 June 2010

Sunscreen may contain small particles consisting of micro-fine zinc oxide to protect exposed skin from UV-radiation. The application of this substance in sunscreen lotions is permitted until 31 December 2010 in Germany. Manufacturers have already filed for an extension. According to the current state of knowledge, ZnO as UV filter is safe for human health at the maximum authorised concentration of 25% zinc oxide. However, the EU's Scientific Committee on Consumer Safety has yet to publish a final risk assessment.

The basic materials for zinc oxide UV filters are nanoscale zinc oxide particles of 20 to 60 nanometres (nm). One nanometre ( $10^{-9}$  m) equals one millionth of a millimetre and is about 70,000 times thinner than a human hair. After coating with silicon or aluminium oxide and by agglomeration, larger aggregates are formed reaching overall diameters of 200 to 500 nm which is outside the nanoscale range. These materials are frequently used in sunscreens and referred to as micro-fine zinc oxide. To date, toxicological analyses have found that only a few of these particles enter the skin, remain in the upper layers and are transported to the surface after a few days through the growth of hair, where they are rubbed off. Health risks for consumers have not been identified.

The full version of this BfR Opinion is available in German on [http://www.bfr.bund.de/cm/206/sonnenschutzmittel\\_zinkoxid\\_als\\_uv\\_filter\\_ist\\_nach\\_derzeitigem\\_kennntnisstand\\_gesundheitlich\\_unbedenklich.pdf](http://www.bfr.bund.de/cm/206/sonnenschutzmittel_zinkoxid_als_uv_filter_ist_nach_derzeitigem_kennntnisstand_gesundheitlich_unbedenklich.pdf)