

SCIENTIFIC COMMITTEE ON CONSUMER PRODUCTS (SCCP)

Request for a scientific opinion: Safety of Nanomaterials in Cosmetic Products

1. BACKGROUND

In response to the growing importance of nanotechnology, the Royal Society & the Royal Academy of Engineering have issued a report on nanoscience and nanotechnologies¹ (“the report”). One of the key findings in the report is that nanoparticles should be treated as new chemicals from a risk-point of view (cf. pp. 43, 73, and 83 of the report).

In particular the issue of skin absorption leading to a higher resorption of nanomaterials may have to be addressed explicitly in order to assess their risk. Particular regard should be held to the state of the skin, which may be injured, sun-burnt or damaged by diseases, and the size of the particles (cf. p. 44 of the report).

Secondly, issues of exposure might have to be re-assessed as far as nanomaterials are concerned. The increased surface area of nanomaterials can lead to greater toxicity per unit mass. Thus assessing exposure on a mass basis may not be appropriate for nanomaterials (cf. p. 82 of the report).

The report raises also – albeit in an auxiliary manner – the question whether suitable non-animal models will be available for testing nanoparticles (cf. p. 44, 73 of the report).

Recently, the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) was asked to deliver an opinion on “the appropriateness of existing methodologies to assess the potential risks associated with engineered and adventitious products of nanotechnologies”.

These concerns raise the need to consider if the SCCNFP’s² Notes of Guidance for the testing of cosmetic ingredients and their safety evaluation should contain specific safety evaluation procedures for nanomaterials. So far, the Notes of Guidance (SCCNFP/0690/03) do not specifically refer to the use of microfine and ultrafine i.e., nanosized, ingredients.

The SCCNFP delivered an opinion on titanium dioxide in 2000³ and on zinc oxide in 2003⁴ for the use as cosmetic ingredient. In the light of possible new findings on the safety of nanoparticles in general, it may be necessary to review these opinions.

¹ UK Royal Society and the Royal Academy of Engineering (2004) *Nanoscience and nanotechnologies: opportunities and uncertainties* (<http://www.nanotec.org.uk/finalReport.htm>)

² The Scientific Committee on Cosmetics and Non Food Products intended for Consumers

³ *Opinion of the Scientific Committee on Cosmetic Products and Non-Food Products intended for Consumers concerning Titanium Dioxide (Colipa n° S75, SCCNFP/0005/00 final)*. (http://europa.eu.int/comm/health/ph_risk/committees/sccp/docshhtml/sccp_out135_en.htm)

⁴ *Opinion of the Scientific Committee on Cosmetic Products and Non-Food Products intended for Consumers concerning Zinc Oxide (Colipa n° S76, SCCNFP/0649/03 final)*. (http://europa.eu.int/comm/health/ph_risk/committees/sccp/documents/out222_en.pdf)

Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Telephone: (32-2) 299 11 11. Office: AN88. Telephone: direct line (32-2) 2960086. Fax: (32-2) 2966467.

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2. TERMS OF REFERENCE

The SCCP is requested :

- (1) *in view of the concerns recently raised about the use of nanomaterials in cosmetics the SCCP is requested to review and, if appropriate, to amend its notes of guidance for the testing of cosmetic ingredients and their safety evaluation as concern cosmetic ingredients in the form of nanomaterials, including nanoparticles and nanoliposomes, and in particular as regards skin absorption and resorption of these substances. In assessing this, regard should be made to differing skin conditions, different sizes of particles and to question whether mass unit is the appropriate basis for regulating the exposure to nanomaterials. Possible implications on animal testing of nanoparticles and nanoliposomes should be addressed.*
- (2) *In the light of the findings under (1), does the SCCP consider it is necessary to review existing opinions on nanosized TiO₂ and ZnO as cosmetic ingredients and if appropriate to identify which additional elements are required for the submission of a safety-file?*

3. DEADLINE

The Committee is asked to give its opinion as a matter of priority and not later the end of 2005.

4. SUPPORTING DOCUMENTS

UK Royal Society and the Royal Academy of Engineering (2004) *Nanoscience and nanotechnologies: opportunities and uncertainties*

URL: <http://www.nanotec.org.uk/finalReport.htm>

Aitken, R.J., K.S. Creely, and C.L. Tran (2004) *Nanoparticles: An occupational hygiene review*. (A report of the Institute of Occupational Medicine (IOM) on behalf of the UK's Health and Safety Executive (HSE)).

URL: <http://www.hse.gov.uk/research/rrhtm/rr274.htm>

Arnall, A.U. (2003) *Future Technologies, Today's Choices: Nanotechnology, Artificial Intelligence and Robotics; A technical, political and institutional map of emerging technologies*. (A report commissioned to the Imperial College London by the Greenpeace Environmental Trust)

URL: <http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/5886.pdf>

Dürrenberger, F., J. Höck, and K. Höhner (2004) *Overview: Inherent risks of different nanotechnological fields* (see, in particular, summary table p. 35, which proposes a typology of different kinds of nanotechnologies and their inherent risk)

URL:

http://www.temas.ch/WWWTEMAS/TEMAS_Homepage.nsf/vwAllByKey/Overview_TT%7Cde

ETC Group (2003) *The Big Down*

URL: <http://www.etcgroup.org/documents/TheBigDown.pdf>

European Commission, Directorate-General for Health and Consumer Protection (2004) *Nanotechnologies: A Preliminary Risk Analysis*

URL: http://europa.eu.int/comm/health/ph_risk/events_risk_en.htm

European Commission (2004) “Towards a European strategy for nanotechnology” (COM (2004) 338)

URL: <http://www.cordis.lu/nanotechnology/src/communication.htm>

European Council (2004) Conclusions of the 2605th European Council Meeting on “Competitiveness (Internal Market, Industry and Research)” (12487/04 (Presse 269))

URL: http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/intm/82067.pdf

European Parliament, Scientific Technology Options Assessment (2004) *Nanotechnology* web page

URL: <http://www.europarl.eu.int/stoa/ta/nanotechnology/nanotechnology.htm>

Swiss Re: *Nanotechnology*

URL: <http://www.swissre.com/INTERNET/pwswpspr.nsf/fmBookMarkFrameSet?ReadForm&BM=../vwAllbyIDKeyLu/FSTN-5YXLL2?OpenDocument>