

Scientific Committee on Health and Environmental Risks (SCHER)

Request for a scientific opinion on:

(A) **“Model implementation and Quantification of the Eutrophication Risk associated to the use of phosphates in detergents”**

(B) **“Non surfactant Organic Ingredients and Zeolite-based Detergents”**

Background

In 2003, CSTEЕ adopted a scientific opinion on the environmental impact (reduction in eutrophication) that would result from banning sodium tri-polyphosphates (STPP) in household detergents. The opinion concluded, inter alia:

- *“that a quantitative assessment of the extent of eutrophication in EU waters in relation to phosphorus load from different sources, and in particular in relation to STPP contribution, should be performed on the basis of existing experimental and modelling information”.*

In order to further elucidate this issue, the relevant CEFIC sector group, CEEP (European Detergent Phosphate Industry) volunteered to carry out a study entitled: “Development of a European Quantitative Eutrophication Risk Assessment of Polyphosphates in Detergents”, in collaboration with Green Planet Environmental Consulting SL and INIA (Spanish National Institute for Agriculture and Food Research and Technology). This report was completed in October 2006.

In addition, the same scientific opinion of SCTEE (2003, “eutrophication-polyphosphates in detergents”) concluded that:

- *“that though zeolites (main alternative builders to STPP) do not pose a risk to health or the environment, it was also recommended that further consideration should be given to the risks associated with the co-builders (such as carboxylates, phosphonates etc.), proposing that a risk assessment of these should be conducted.”*

Moreover, there are generally concerns over the potential impact on the environment associated with a wide range of non-surfactant substances added to detergents, in particular, organic compounds. As a consequence, DG-Enterprise contracted Risk and Policy Analysts Ltd (RPA) to review these issues and prepare a report with the relevant findings. It should be also noted that within the HERA (Human and Environmental Risk Assessment) project, the health and environmental risks of various types of zeolites (A, P, X) have been recently reviewed, but with no changes in the conclusions.

DG Enterprise would therefore much appreciate further opinions of SCHER, based on the submitted reports. More specifically:

Terms of reference

(A) Model implementation and Quantification of the Eutrophication Risk associated to the use of phosphates in detergents:

(1) SCHER is requested:

- (i) to assess the overall scientific quality of the report and comment on the methodology and the assumptions used for the development of this probabilistic risk assessment model.
- (ii) to comment whether the developed model is considered sufficient for the purpose of providing an assessment of the risk from eutrophication due to detergents phosphates that was identified in the 2003 CSTEE opinion.

(2) SCHER is requested to comment whether the field data (303 European data items on sensitive zones, such as lakes and reservoirs) were appropriately selected and adequately assessed in this study in order to properly describe the eutrophication risk at the regional level in the EU. In particular, the following issues should be addressed:

- (i) whether the selection of lake field data is adequate given that for some regions, e.g. the Northern European-countries, field data for deep lakes is lacking.
- (ii) whether the omission of coastal waters is a significant limitation for the overall assessment of eutrophication in the EU and, if so, how these waters should be considered in a pan-European risk assessment.

(3) SCHER is requested to comment whether criteria used in the development of the model are appropriate to describe the risk.

(4) SCHER is requested to assess the exposure assessment methodology and in particular:

- (i) whether the selection of the certain catchment characteristics allows an accurate calculation for a generic river basin of estimated concentrations in water bodies.
- (ii) whether all relevant and significant sources and pathways where phosphates in detergents can be released into the aquatic environment have been considered (eg. sewage overflows or small settlements not connected to sewerage and wastewater treatment).
- (iii) whether the estimations, based on average emission coefficients were considered appropriate for large river basins (and the emission scenario based on diffuse and point P sources was a sufficient approach for this quantitative risk assessment) given that more detailed regional models have been developed for some river basins (e.g. Danube) or catchment seas (e.g. Baltic Sea).

(5) SCHER is requested:

- (i) to comment whether the results obtained for the generic scenarios and for the pan-European estimation (by use of Monte Carlo analysis) are consistent, representative and comparable to other approaches.
- (ii) to assess the conclusions, in particular:

- “additional eutrophication risks related to detergent phosphates are very variable in different regional situations as a result of the characteristics of hydrology, population density and agricultural intensity among other factors.”
 - “the difference between the total risk and the risk without P-based detergents is typically around 2-8% based on the Mediterranean effect assessment and around 0.4-2% based on the Atlantic-N&Central shallow effect assessment.”
- (iii) to comment on whether or not the study (in combination with the other information readily available to SCHER) indicates that the use of phosphates in detergents contributes significantly to the eutrophication risk at the European level.
- (iv) if current information is insufficient, to identify what other information, methodologies, studies and data should be considered to answer the questions whether the use of phosphates in detergents contributes significantly to the eutrophication risk at the European level.
- (v) to comment on the report recommendation that reduction of the high level of variability in the models results may be achieved using data currently being collected by European Union in the inter-calibration process of the WFD implementation.
- (vi) to comment on whether evaluation of the additional material supplied concerning the Danube and the Baltic Sea would lead to different conclusions than those reached in the INIA/Green Planet Report.

(B) Non surfactant Organic Ingredients and Zeolite-based Detergents

(1) SCHER is requested to assess the overall scientific quality of the RPA report and comment on the methodology and the assumptions used.

(2) SCHER is requested to comment whether the conclusions of the RA concerning the reviewed non-surfactant detergents ingredients (as summarised in Tables 4.11 and 4.12) are valid and in agreement with current literature. Particular consideration should be given to the results concerning the health and environmental risks of the following co-builders in detergents formulations (for which the RA indicates that either concern or some uncertainties exist):

(i) EDTA and EDTA tetrasodium salts (ii) Nitriloacetic acid (NTA) (iii) phosphonates (iv) polycarboxylates.

(3) SCHER is requested to comment on the following key observations of the RPA report (page-84), concerning the analysed non-surfactant organic ingredients: (i) the analysis presented in this report suggests that, for persistent ingredients, there maybe no associated risks (i.e. the PEC/PNEC ratio is less than one) and (ii) that for readily biodegradable substances there is no risk because they are rapidly removed from the environment by biodegradation.

(4) SCHER is requested to comment whether the substitution of phosphate-based detergents in the EU by zeolite-based detergents would lead to a significant increase in health or environmental risks.

Deadline

May 2007