CEFIC Long-range Research Initiative
Request for Proposals (RfP)

Request for Proposals (project code LRI-B12)

Title:
Contribution of dust to human exposure

Background

Human exposure to substances is a consequence of their presence in the environment. In the case of substances that are used in consumer products and articles, direct dermal exposure occurs as a result of use of products and contact with the articles. Traditionally, estimation of exposure is achieved by focusing on the individual product or article that is the subject of the assessment. Two on-going CEFIC LRI projects are currently studying different aspects associated to consumer exposure directly derived from actual use of products and/or contact with articles [refer to B7: von Goetz *et al* – Determining the nature of chemical substance additivity from household consumer products, and B9: Torfs *et al* – Characterising the nature of dermal exposure from consumer products and articles]. In addition to such primary direct source of exposure, a secondary, indirect source of consumer exposure to substances can be considered from the fact that they may deposit on dust within the household. Exposure via household dust has been proposed as a major exposure route for some types of chemicals yet very little is known on the potential quantitative contribution of exposure via dust to the consumer exposure to substances; the characteristics determining whether chemical exposures via dusts is likely to be significant exposure route; and how it compares relative to direct sources of exposure. Examples of areas where information is lacking include:

- Typical levels of substances deposited on dust.
- Important factors determining probability and magnitude of such levels. They include substance-specific factors (e.g., physicochemical properties), product use factors, household characteristics, and others.
- Important factors impacting exposure to dust by individuals, including identification of relevant routes of exposure and relevant subpopulations (e.g., children).
- For a given substance(s), realistic comparison of predicted of exposure to individuals from direct sources relative to dust.

A systematic understanding of the factors that shape dermal exposure to household dusts should lead to better strategies (including refined exposure models) capable of providing more realistic estimations of exposures to chemical substances via this exposure route. This will allow proper decisions to be taken on the extent to which household dust exposures should be accounted for when evaluating the risk of consumer exposure to substances.

CEFIC Long-range Research Initiative
Request for Proposals (RfP)

Objective

This project aims to investigate the factors that describe the manner and extent of dust contribution to human exposure to substances in the household. Qualitative and quantitative approaches, experimental measurements and development of case studies are envisaged. In particular, the project would be expected to investigate:

- Important factors determining the chemical composition of household dust, including the contribution of non-household (e.g. environmental) sources
- Typical levels of substances deposited on dust for a representative range of settings
- Important factors determining probability and magnitude of such levels. They include substance-specific factors (e.g. physicochemical properties), product use factors, household characteristics, and others.
- Important factors impacting exposure to dust by individuals, including identification of relevant routes of exposure and relevant subpopulations (e.g., children).
- Key consumer situational and habits and practices information that are likely to indicate the need for an evaluation of exposures of this type
- For a given substance(s), realistic comparison of predicted of exposure to individuals from direct sources relative to dust.

Scope

It is anticipated that this project will be structured and staged in a manner that ensures that the work products are regularly delivered and reviewed. It is also expected that any proposals are verified against a representative range of case examples (to be selected by the researchers in consultation with LRI), covering commonly encountered consumer products and articles. In the case of exposure modelling (preferably using existing models, with whatever refinements and improvements that may be identified), appropriate validation (including accuracy and precision and inter/intra subject variation) would be expected to be evaluated. It is expected that the findings will developed into a peer reviewed publication, following a process that involves stakeholder discussion and presentation at a suitable scientific conference. This project would be expected to complement on-going LRI and other activities in the area. The successful research group would liaise with and take account of the findings and outcomes of such other work.

Cost & timing

2 years, € 350 K

Partnering/Co-funding

Applicants should provide an indication of additional partners and funding opportunities that can be appropriately leveraged as part of their proposal. Partners can include, but are not limited to industry, government/regulatory organizations, research institutes, etc. Statements from potential partners should be included in the proposal package.

DEADLINE FOR SUBMISSIONS: August 31, 2012
Please see www.cefic-lri.org for the project proposal form and further guidance for grant applications.