Phosphite, Isodecyl-Phenyl Category – Comments of Environmental Defense

(Submitted via Internet March 4, 2002.)

The sponsors (General Electric Company and the Phosphite HPV producers Consortium) have prepared a well-written and informative test plan and robust summary. They propose to establish a category for four substances: the triisodecyl, diisodecyl phenyl, isodecyl diphenyl and triphenyl esters of phosphoric acid.

The test plan notes very few data are available for these substances, which are used in polymer manufacture and in epoxy resin applications so they are used in PVC materials, polyolefins, polyurethanes, polyesters, adhesive coatings, laminates and soldering compounds. Based on the information provided, there appears to be opportunity for environmental release, worker exposure and limited exposure from consumer end product uses.

Because the available data is surprisingly sparse (particularly in light of potential for exposure), the sponsor has appropriately proposed a number of studies on selected members of the proposed class. At this point, we support the need for proposed testing on the assumption that this is a scientifically defensible category. We recognize that all categories in the HPV program are created on a provisional basis, but we believe that it is useful to reinforce that in this context, given that there is essentially no information available now on physiochemical properties, environmental fate or mammalian toxicity. Thus, confirmation of the proposed category should await completion and careful analysis of results from the proposed studies.

The sponsor proposes a series of studies on the physiochemical properties for all four members of the proposed class and we support this proposal. In regards to the mammalian toxicity studies, we agree that no additional acute toxicity studies are needed. We also agree with the proposal to conduct in vitro mutagenicity tests and a combined repeat dose/reproductive/developmental study on two of the proposed members. While the triphenyl ester is a good selection, we question the selection of triisodecyl phosphite {TDP} as the second member for testing. TDP appears to be the least toxic of the proposed members and it has only alkyl characteristics and no aryl structures. In contrast, both DPDP and PDDP possess both alkyl and aryl features and since the aryl moiety may be conferring toxicity of these substances, we recommend testing either DBDP or PDDP instead of TDP in mammalian toxicity studies. By testing one member which possesses both alkyl and aryl structures any toxicity that is conferred by the combination of structures will be detected.

Thank you for this opportunity to comment.

George Lucier, Ph.D.
Consulting Toxicologist, Environmental Defense

Karen Florini
Senior Attorney, Environmental Defense