

Hindered Phenols – Comments of Environmental Defense

(Submitted via Internet 5/23/02)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for Hindered Phenols

The Rubber and Plastics Additive Panel of the ACC have prepared the test plan and robust summaries for 8 hindered phenols. These substances are added to a wide variety of products such as rubber, adhesives, plastic, flooring, coated paper and in various synthetic and natural oils. Their purpose is to delay deterioration due to air oxidation. No information was provided on environmental contamination or the potential for human exposure. Although this information is not required under the HPV program, it seems that exposure and environmental release data would be useful given the broad array of uses of hindered phenols in consumer products.

The sponsor proposes a category for eight hindered phenols and they contend that no additional testing is needed. While we agree that some categorization of the hindered phenols is appropriate, we do not think that a single category for all 8 hindered phenols is scientifically justified. There are vast structural differences in the proposed members that are readily apparent: one chemical has a triazine ring another with a dicyclopentadiene structure, others contain cresols, and yet others contain styrene derivatives. Each would be expected to possess distinct toxicological properties based on published reports in the scientific literature. For example, some are carcinogenic and others are not; one is mutagenic; and there are large differences in effects on clinical chemistries reported in the repeat-dose studies.

We recommend the following categories based on our thorough review of the test plan and robust summaries:

1. One category should include phenol, isobutylated methylstyrenated (68457-74-9) and phenol, styrenated (61788-44-1).
2. A second category could include 4,4'-thiobis-6(t-butyl-m-cresol) (96-69-5), 4,4'-butylidenebis(6-t-butyl-m-cresol) (85-60-9), Phenol, 4,4'-(1-methylethylidene)bis[2-(1,1-dimethylethyl)] (79-96-9) and phenol, 2,2'-methylenebis(4-methyl-6-nonyl) (7786-17-6).
3. We recommend that the other two members, namely the 1,3,5-triazine (27676-62-6) and the dicyclopentadiene (68610-51-5), be considered as separate chemicals and not members of any category.

Based on our recommendations for categories of hindered phenols, some additional testing is needed:

1. We recommend an in vitro chromosomal aberration test on either 68-457-74-9 or 61788-44-1.
2. We agree that no additional repeat dose-studies are needed, as existing data is adequate for our recommended categories.
3. We recommend that reproductive and developmental studies be conducted on either 68-457-74-9 or 61788-44-1. Furthermore, we recommend reproductive and developmental studies on either 79-96-9 or 7786-17-6. Finally, we recommend a developmental study on 27676-62-6.

Thank you for this opportunity to comment.

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