

Resin Oils and Cyclodiene Dimer Concentrates Category - Comments of Environmental Defense

(Submitted via Internet 6/28/02)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for Resin Oils and Cyclodiene Dimer Concentrates Category.

General Comment:

The Olefins Panel (Panel) of the American Chemistry Council and the Panel's member companies propose that nine related petrochemical process streams be considered as a single category of chemicals; the Panel has thus submitted a single Robust Summary/Test Plan for these substances.

We do not agree that these streams can be considered as a category for the following reasons. To be considered as a category, a group of chemicals must share enough physical/chemical properties to warrant the presumption that the members of the category will also share biological properties. Although these nine petrochemical process streams are all complex mixtures of hydrocarbons formed in the course of petrochemical refining, there are very substantial differences in the chemical content of these streams.

These differences are perhaps best illustrated by the varying content of dicyclopentadiene dimer (DPCD), the chemical the Panel proposes as the defining substance in this category for toxicological evaluation. The amount of DPCD found in the various streams may vary from <1% to greater than 90% of a given stream. Further, as seen in Table 2, three of the streams consist primarily of a single chemical whereas the others contain complex mixtures of chemicals. The high purity DPCD stream contains >90% DPCD, and the DPCD concentrate stream contains 70 - 90% DPCD. The methylcyclopentadiene dimer (MPCD) stream typically contains 90% MPCD and virtually no DPCD. In our view, it is not appropriate to place these relatively pure streams in the same category with the Low DPCD and the Resin Former streams that are much more complex and contain less than 10% of either DPCD or MPCD. Those streams containing primarily DPCD should be considered in one category. Those streams containing very little DPCD should be considered a second category. Streams that are equally complex mixtures having an intermediate DPCD content should be considered in at least a third category. We also believe that the stream containing primarily MPCD should be handled separately.

Specific Comments:

1. In the Plain English Summary the abbreviation of dicyclopentadiene is first given as DPCD rather than DCPD as used throughout the remainder of the document. This may be a typographical error but could prove confusing and should be corrected.
2. A more significant editorial point is that, even though this Test Plan describes nine petrochemical streams that are complex mixtures and thus difficult to describe, a more concise summary of available studies and proposals for additional studies could have been provided.
3. On page 5, last paragraph, it is stated that "There is limited reliable information on the toxic effects of C8 to C12 cycloalkenes following repeated exposure. A few studies have been conducted on limonene (a C10 cycloalene)...." This statement seems to indicate a need for additional studies of chemicals in this group. Further, it neither cites nor lists in the Robust Summary the extensive toxicological characterization of limonene by the National Toxicology Program (Technical Report number 347).
4. Page 6 of the Test Plan states that "The specific assessment of the available toxicology information for the C8- C12 aromatic hydrocarbons is to be included in the International Hydrocarbon Solvents Consortium C9 Aromatic Hydrocarbon Solvents and C10+ Aromatic Hydrocarbon Solvents categories and will not be discussed more specifically in this test plan." The obvious question is why, if such data are available, they are not at least summarized in this Test Plan?
5. Page 6 of the Test Plan states that "The Resin-Former Feedstock is believed to be representative of the High DCPD Resin Oil Stream." This statement is not consistent with data presented in Table 2 that indicate Resin-Former contains 6.7% DCPD whereas High DCPD Resin Oil contains 40 - 70% DCPD.
6. Page 7, paragraph 1 states that, "The expectation, therefore, is for the Resin Oils and Cyclodiene Dimer

Concentrates Category to have similar biological activity....” This statement is inconsistent with the chemical content of these mixtures as presented in Table 2. The contents of two Resin Oils as presented in Table 2 differ very significantly in DCPD content. Further, the Cyclodiene Dimer Concentrates stream contains numerous chemicals not found in the Resin Oils. Most of these chemicals have not been tested, thus, it is speculation to say that they will have “similar biological activity”.

7. The Test Plan describes a number of parameters that will be determined for representative chemicals by computer programs. Computer calculation of parameters such as photodegradation, fugacity, etc. is very acceptable, but it is not obvious why these calculations are proposed for only representative chemicals. These streams have been chemically characterized (Table 2) and the calculations require no additional experimentation; therefore, these calculations should be made for all chemicals found in significant quantities in each of these petrochemical streams. Data from these calculations would be useful in evaluating possible consideration of these streams in categories based on their high, medium, or low DCPD content as discussed above.

8. The Robust Summaries illustrate the paucity of data describing the chemicals found in these petrochemical streams. Whereas DCPD has been the subject of a number of well designed studies most of the chemicals in these petrochemical streams have been the subjects of little or no study. Of the approximately 60 chemicals and/or fractions listed in Table 2 the robust summary cites studies of only three (DCPD, MCPD and C9 Resin Oil). Literature is available, but not cited, for many of the minor components of these mixtures, e.g., isoprene, pentane, benzene, toluene, the xylenes, allylbenzene, alpha-methylstyrene, naphthalene, etc. Since minor components frequently characterize the toxicity of complex mixtures, the presence of these chemicals should be discussed, if only briefly.

Thank you for this opportunity to comment.

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