

October 16, 2003

Sarah Loftus McLallen
Manager, CHEMSTAR
The American Chemistry Council Petroleum Additives Panel
Health, Environmental and Regulatory Task Group (HERTG)
1300 Wilson Boulevard
Arlington, VA 22209

Dear Ms. McLallen:

The Office of Pollution Prevention and Toxics is transmitting EPA's comments on the robust summaries and test plan for Formaldehyde, Reaction Product w/ Tetrapropenyl Phenol, Methylamine and Sulfur, posted on the ChemRTK HPV Challenge Program Web site on June 19, 2003. I commend The American Chemistry Council Petroleum Additives Panel Health, Environmental and Regulatory Task Group (HERTG) for their commitment to the HPV Challenge Program.

EPA reviews test plans and robust summaries to determine whether the reported data and test plans will provide the data necessary to adequately characterize each SIDS endpoint. On its Challenge Web site, EPA has provided guidance for determining the adequacy of data and preparing test plans used to prioritize chemicals for further work.

EPA will post this letter and the enclosed Comments on the HPV Challenge Web site within the next few days. As noted in the comments, we ask that the HERTG advise the Agency, within 60 days of this posting on the Web site, of any modifications to their submission. Please send any electronic revisions or comments to the following addresses: oppt.ncic@epa.gov and chem.rtk@epa.gov.

If you have any questions about this response, please contact Richard Hefter, Chief of the HPV Chemicals Branch, at 202-564-7649. Submit questions about the HPV Challenge Program through the "Contact Us" link on the HPV Challenge Program Web site pages or through the TSCA Assistance Information Service (TSCA Hotline) at (202) 554-1404. The TSCA Hotline can also be reached by e-mail at tsc-hotline@epa.gov.

I thank you for your submission and look forward to your continued participation in the HPV Challenge Program.

Sincerely,

Oscar Hernandez, Director
Risk Assessment Division

Enclosure

cc: W. Penberthy
M. E. Weber

**EPA Comments on Chemical RTK HPV Challenge Submission:
Reaction Product of Formaldehyde with Tetrapropenylphenol, Methylamine, and Sulfur**

Summary of EPA Comments

The sponsor, the American Chemistry Council Petroleum Additives Panel, submitted a test plan and robust summaries to EPA for the reaction product of formaldehyde with tetrapropenylphenol, methylamine, and sulfur (CAS No. 68855-34-5) dated May 21, 2003. EPA posted the submission on the ChemRTK HPV Challenge Web site on June 19, 2003.

EPA has reviewed this submission and reached the following conclusions:

1. Test substance identification. Certain discrepancies and omissions need to be addressed.
2. Physicochemical Properties. The proposed test plan for these endpoints is adequate. However, the submitter needs to add in its robust summaries a technical discussion about the fact that other solids may be present in this “de-oiled” substance, such as calcium hydroxide and a “highly sulfurized alkyl phenol” (CAS No. 122384-85-4), which may interfere with the accuracy of the measurements and estimations.
3. Environmental Fate. The proposed test plan for these endpoints is adequate.
4. Health Effects. The proposed test plan for these endpoints is adequate. However, the submitter needs to clearly identify the test substance and discuss the potential differences in toxicity due to variations in the test substance composition.
5. Ecological Effects. The submitter’s planned aquatic toxicity testing is not necessary because of the chemical’s insolubility and its formulation in base oil.

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.

**EPA Comments on the Formaldehyde Reaction Product with Tetrapropenyl- Phenol, Methylamine,
and Sulfur Challenge Submission**

Substance identification

The name, CAS No., and structure provided by the submitter do not agree. CAS No. 68855-34-5 refers to “formaldehyde, reaction products with calcium hydroxide, dodecyl phenol, methylamine, and sulfur” (TSCA Inventory). The submitter does not include calcium hydroxide in the name and does not clearly describe the alkyl chain; “tetrapropenyl” implies chain branching, while the test plan shows the structure as unbranched. The submitter also refers to the feedstock (CAS No. 74499-35-7) used to prepare the HPV chemical as both “C10-15 alkylphenol” and “tetrapropenylphenol.” The apparent discrepancies need to be addressed and the nature of the alkyl chain more fully described.

Test Plan

Physicochemical Properties (melting point, boiling point, vapor pressure, partition coefficient and water solubility)

EPA agrees with the test plan for melting point, partition coefficient, and water solubility.

Boiling point. The submitter states that: “the boiling point of the theoretical ‘de-oiled’ substance will be determined by modeling.” However, the chemical’s structure and its potential decomposition at elevated temperatures may complicate estimation of this endpoint. If the chemical decomposes before boiling, a technical discussion of the reaction should be provided in the robust summary.

Vapor pressure. The submitter is proposing no testing for this endpoint. In the table on page 16 of the test plan, the submitter reports a vapor pressure of 0.0001 torr at 20° C (0.0133 Pa). On page 7 of the test plan, the submitter states that: “the vapor pressure of this substance as manufactured in highly refined lubricating base oil can be estimated from the vapor pressure of the base oil. Typically, highly refined lubricating base oils have a low vapor pressure, 10^{-10} Pa at 25° C.” The value in the table is not consistent with that in the text. The submitter needs to correct this inconsistency or provide reliable data. The submitter also needs to incorporate references for all vapor pressure values.

Environmental Fate (photodegradation, stability in water, biodegradation, fugacity)

EPA agrees with the test plan for photodegradation, stability in water, and biodegradation.

Fugacity. The submitter states on page 10 of the test plan that the relative distribution of this chemical will be evaluated using level I fugacity modeling. Although EPA had previously recommended the level I model, this model is somewhat limited. EPA now recommends use of the level III model; values based on a level III fugacity model are more realistic and useful for estimating a chemical’s fate in the environment on a regional basis. When developing the fugacity model, the submitter needs to provide the assumption and data inputs to the model (see Guidance for Robust Summary preparation).

Health Effects (acute toxicity, repeated-dose toxicity, genetic toxicity, and reproductive/developmental toxicity)

EPA agrees with the submitter’s test plan. However, the submitter needs to clearly identify the substance to be tested; e.g., the likely percentage of various chain lengths or percentage of molecules with one versus two sulfur atoms. The submitter also needs to discuss the potential for differences in toxicity related to variations in the test substance composition.

Ecological Effects (fish, invertebrates, and algae)

The submitter planned to conduct acute aquatic toxicity tests. EPA concludes that aquatic testing is not necessary because of the insolubility of the chemical (1 ppb) and its formulation in base oil.

Followup Activity

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.