

201-16024

August 23, 2005

Mr. Oscar Hernandez, Director  
 Risk Assessment Division  
 U.S. Environmental Protection Agency  
 P.O. Box 1473  
 Merrifield, VA 22116

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Dimethyl Methylphosphonate (DMMP, CAS# 756-79-6)

Dear Mr. Hernandez:

The DMMP Consortium, consisting of Supresta and Rhodia Inc., is pleased to provide this response to the U.S. Environmental Protection Agency's comments dated May 17, 2005, on the Consortium's robust summaries and its proposed Test Plan. Our scientists have carefully reviewed the Agency's comments and recommendations on specific robust summaries and on our proposed path forward, and have provided the following response.

**Physical/Chemical Characteristics**

The Agency accepts the data submitted for boiling point, vapor pressure, partition coefficient, and water solubility as adequately fulfilling the respective endpoints. The Agency requested a melting point, but indicated an estimated melting point would be acceptable because the value would be below 0°C. The DMMP Consortium has determined the melting point to be -48°C using the MBPWIN program. All required physical and chemical properties have now been determined.

**Environmental Fate**

The Agency agreed that modeled data would be acceptable for photodegradation and fugacity. Using the EPA AOP program, the DMMP Consortium estimated the photodegradation half-life to be 1.9 days. Fugacity was determined using the EPA EPIWIN program, v3.12 and the values for air, water, and soil are provided in the accompanying revised dossier.

Although it was agreed that data from the scientific literature would be used to satisfy the stability in water endpoint, a careful review of the published studies found insufficient data. Therefore, both preliminary and definitive hydrolysis studies were conducted to accurately define the hydrolytic stability of DMMP. The half-life of DMMP in water at 25°C at pH 4 and 7 was estimated to be greater than one year. At pH 9, the half-life was calculated to be 307 days.

A robust summary for a ready biodegradability study has been included in the dossier. The Modified Sturm Test (OECD 301B) showed that DMMP did not readily degrade under the conditions of the test. All environmental fate endpoints have now been fulfilled.

**Ecotoxicity**

The Agency agreed that adequate data are available for fish toxicity, and that the aquatic invertebrate and green algae toxicity tests should be conducted. The Consortium agrees and the

two tests will be initiated. The aquatic invertebrate *Daphnia magna* will be used as the test organism in the aquatic invertebrate test.

### **Mammalian Toxicity**

The robust summaries for the acute toxicity tests were enhanced where possible. The Agency agreed that sufficient data are available for acute toxicity, genetic toxicity (mutagenicity), and developmental toxicity. The Consortium disagrees with the Agency's statement that the submitted data for reproductive toxicity and repeated-dose toxicity are inadequate.

For repeated-dose toxicity, the previous dossier contained a robust summary describing the National Toxicology Program (NTP) subchronic rat study. We have now added a robust summary for the corresponding NTP 90-day mouse study. Both studies are considered valid by the NTP and final reports for both studies are publicly available. In addition, a robust summary for the NTP combined chronic toxicity/carcinogenicity study is included in the dossier as another repeated-dose study. In the final report, diagnostic pathology is provided for all organs and tissues, including non-neoplastic alterations such as nephropathy and focal hyperplasia. This chronic toxicity study certainly satisfies the repeated-dose endpoint.

The Agency agrees that the two reproductive toxicity studies included in the DMMP dossier satisfies the requirement for male reproductive toxicity data. The Agency further states that the existing adequate developmental toxicity data combined with histopathology of the female reproductive organs would satisfy the reproductive toxicity endpoint. Female reproductive organs were examined in the NTP subchronic rat and mouse studies, and in the NTP chronic toxicity study. There was no evidence of a treatment-related effect on the female reproductive organs. Therefore, the Consortium believes this endpoint and all mammalian toxicity endpoints have been adequately satisfied.

The DMMP Consortium greatly appreciates the helpful comments provided by Agency scientists on the initial dossier. In response to these comments, certain robust summaries have been enhanced with the inclusion of additional data. New robust summaries have been added to the dossier. The Consortium is pleased to submit the enclosed revised dossier and the Test Plan table which shows the two outstanding tests.

Sincerely yours,

Andy Wang, Ph.D.  
Manager, Regulatory Affairs

Attachment: Revised Test Plan  
Revised HPV Robust Summaries

Cc: Mark Buczek, Supresta  
Ian Bartlett, Rhodia Inc.