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Subject: Environmental Defense comments on BISCEP

(Submitted via Internet 7/28/04 to oppt.ncic@epa.gov, hpv.chemrtk@epa.gov, boswell.karen@epa.gov, chem.rtk@epa.gov, MTC@mchsi.com, and glenn.simon@us.rhodia.com)

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

Rhodia Inc., in response to EPA's High Production Volume (HPV) Chemical Challenge, has submitted robust summaries and a test plan describing available data and proposed testing to address SIDS elements required for BISCEP. BISCEP is a mixture of 50-70% phosphonic acid, (2-chloroethyl)-, bis(2-chloroethyl) ester (CAS# 6294-34-4) and 35-40% phosphonic acid, [2-[[2-chloroethoxy)(2-chloroethyl) phosphinyl]oxy]ethyl]-, bis(2-chloroethyl) ester (CAS# 58823-09-9). The second chemical is a dimer of the first.

According to the test plan, BISCEP is used almost exclusively as a closed-system intermediate in the production of a herbicide, phosphonic acid, 2-chloroethyl-. No mention is made of possible contamination of this herbicide with residual BISCEP as a potential source of its release into the environment and human exposure. This subject should be addressed. Also, some BISCEP is marketed as a flame retardant, so products in which BISCEP may be used as a flame retardant and the resulting potential for human and environmental exposure should be discussed.

The test plan submitted for BISCEP provides brief and rather uninformative descriptions of data to address most SIDS elements required by the HPV Challenge. We appreciate and support the fact that, since BISCEP is produced and used as a mixture of two chemicals, most ecological and mammalian toxicity test data have been developed using the commercial product. However, the physicochemical data provided in Table 1 only address the monomer. Given that the dimer constitutes 35-40% of the mixture, similar data should be presented for it as well. Many of these data are required for some of the computer simulations that are said to have been run for the dimer; thus presumably they are available.

Ecotoxicity data are very briefly described in the test plan, but are more completely described in the robust summaries. These studies indicate BISCEP has moderate toxicity to fish, daphnia and algae. However, the fact that BISCEP does not degrade in the environment raises concern if it is released as a result of an accidental release or as a result of its use as a flame retardant or its presence as a residual in the herbicide, phosphonic acid, 2-chloroethyl-. A discussion of these possibilities, while not strictly required, would greatly enhance the information provided in this test plan.

The discussion of animal toxicity data is somewhat more complete than that of the ecotoxicity data, but could be much improved. The test plan

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suggests that BISCEP is moderately toxic to rats and may be somewhat more toxic to rabbits, as indicated by the systemic effects observed following dermal administration. However, our review of the more in-depth description of the studies with rats provided in the robust summaries indicates systemic effects not mentioned in the test plan were also observed in rats. The data provided indicate BISCEP is not toxic to the developing rat, but the report of hypospermatogenesis indicates it may be toxic to reproduction. Thus, it is appropriate that studies of reproductive toxicity have been proposed. And finally, it is stated in the test plan that BISCEP not mutagenic in the Ames system. However, the test plan needs to state that it was tested with and without activation, as is indicated in the robust summary.

In summary, we consider this submission a minimally acceptable response to EPA's HPV Challenge.

Thank you for this opportunity to comment.

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