



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON DC 20460

MAR 9 1993
HAD 9 1022

OFFICE OF
PERSISTENT PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

Subject: Data Call-In for Hexachlorobenzene and Pentachlorobenzene
in Technical Cyromazine; Waiver Request. DP Barcode
D186546. MKID No. 42583103. CBRS No. 11192.

From: Stephen Funk, Ph.D., Chemist *S. Funk*
Special Review Section I
Chemistry Branch II - Reregistration Support
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Through: Andrew Rathman, Section Head *AR*
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Health Effects Division (H/509C)

To: Dennis Utterback
Special Review Branch
Special Review and Reregistration Division (H/508W)

In response to the 09-92 DCI for product chemistry data on hexachlorobenzene (HCB) and pentachlorobenzene (PCB) in technical cyromazine (100-632), Ciba-Geigy Corporation has submitted a waiver request. The registrant claims CMI status for the information supplied.

Cyromazine, or N-cyclopropyl-1,3,5-triazino-2,4,6-triamine, is an insecticide and insect growth regulator. Tolerances exist (40 CFR 180.414) for residues of cyromazine and its metabolite melamine in/on celery (10 ppm), head lettuce (5 ppm), eggs (0.25 ppm), and poultry meat, fat, and meat byproducts (0.05 ppm). A food additive tolerance exists (40 CFR 186.1400) for residues of cyromazine (5 ppm) in poultry food. The structure of cyromazine is given in the Confidential Appendix.



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Conclusion

The request for data on HCB and PCB contamination in technical cyromazine is based upon the presence of HCB in atrazine reported by a manufacturer. The information is summarized in *Survey of Industrial Processing Data: Task I- Hexachlorobenzene and Hexachlorobutadiene Pollution from Chlorocarbon Processes*, Charles E. Mumma and Edward W. Lawless, Midwest Research Institute, EPA Contract No. 68-01-2105, EPA-560/3-75-003. The manufacturing process that was reported to generate up to 0.25 ppm HCB in the technical atrazine appears to be the process described by Ciba-Geigy for their manufacture of cyromazine. Therefore, a waiver is not justified.

Recommendation

CBRS recommends that the waiver be denied and that Ciba-Geigy be advised to submit a protocol for the determination of hexachlorobenzene (HCB) and pentachlorobenzene (PCB) in technical cyromazine.

Detailed Consideration

The registrant details the manufacturing process (see Confidential Appendix A) and explains why HCB and/or PCB formation during each step is not likely. The registrant notes the lack of the combination of aromatic compounds and chlorine in each step that presumably is needed to generate HCB/PCB. The reaction of trace amounts of chlorine and benzene (impurity in the solvent) in the last steps of the manufacture is calculated to lead to no more than 4 ppt chlorobenzene and lower levels of higher chlorinated benzenes, well below the required 100 ppb level of HCB quantitation. It is emphasized that the catalyst needed to promote electrophilic aromatic substitution is absent and that the solvent would chlorinate much faster than the benzene. An excerpt from J. Marsh's *Advanced Organic Chemistry: Reactions, Mechanism, and Structure* is submitted in support of the reaction mechanism.

CBRS agrees that the chemical reactions presented for the reactions involving the *s*-triazine are not predicted to generate hexachlorobenzene (HCB) or pentachlorobenzene (PCB). The reactions leading to the *s*-triazine do use chlorine, a carbon source, and elevated temperature and pressure. Moreover it has been reported (*Survey of Industrial Processing Data: Task I- Hexachlorobenzene and Hexachlorobutadiene Pollution from Chlorocarbon Processes*, Charles E. Mumma and Edward W. Lawless, Midwest Research Institute, EPA Contract No. 68-01-2105, EPA-560/3-75-003) that levels of HCB ranging up to 0.25 ppm are found in technical atrazine manufactured by the method described in Ciba-Geigy's submission for cyromazine. In the absence of other evidence this empirical observation, reported by the manufacturer, must be assumed accurate.

Attachment - Confidential Appendix A

cc with Confidential Apperix A: HCB Subject File, S Funk RF
cc without Confidential Appendix A: circ.

RDI: A Rathman:02/17/93 E. Zager:02/22/93:

H7509C CBRS S Funk.305-5430:CM#2.RM803:SFIO293.28/29:02/17/93.

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Pages 4 through 5 are not included in this copy.

The material not included contains the following type of information:

- Identity of product inert ingredients.
- Identity of product impurities.
- Description of the product manufacturing process.
- Description of quality control procedures.
- Identity of the source of product ingredients.
- Sales or other commercial/financial information.
- A draft product label.
- The product confidential statement of formula.
- Information about a pending registration action.
- FIFRA registration data.
- The document is a duplicate of page(s) _____.
- The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.
