

201-15027A

HIGH PRODUCTION VOLUME (HPV)

CHEMICAL CHALLENGE PROGRAM

TEST PLAN

For

2-CHLORO-5-TRICHLOROMETHYLPYRIDINE

Prepared by:

The Dow Chemical Company

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PLAIN ENGLISH SUMMARY

This test plan addresses 2-chloro-5-trichloromethylpyridine (CAS No. 69045-78-9). Existing data are summarized. No additional data are needed under the HPV Challenge Program.

EXECUTIVE SUMMARY

The Dow Chemical Company hereby submits for review and public comment the test plan for 2-chloro-5-trichloromethylpyridine under the Environmental Protection Agency's (EPA) High Production Volume (HPV) Chemical Challenge Program. It is the intent of The Dow Chemical Company to use a variety of existing data and scientific judgment/analyses to adequately characterize the SIDS (Screening Information Data Set) human health, environmental fate and effects, and physicochemical endpoints for this chemical.

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TEST PLAN FOR 2-CHLORO-5-TRICHLOROMETHYLPYRIDINE

I. INTRODUCTION

The Dow Chemical Company has committed voluntarily to develop screening level human health effects, environmental effects and fate, and physicochemical test data for 2-chloro-5-trichloromethylpyridine under the Environmental Protection Agency's (EPA's) High Production Volume (HPV) Challenge Program (Program).

This plan identifies the chemical and its CAS number and identifies existing data of adequate quality for the chemical to develop screening level data for the chemical under the Program. The objective of this effort is to identify sufficient test data and/or other information to adequately characterize the human health and environmental fate for the chemical in compliance with the EPA HPV Program. Physicochemical data that are requested in this program will be provided.

II. DESCRIPTION OF 2-CHLORO-5-TRICHLOROMETHYLPYRIDINE

A. The Chemical

2-Chloro-5-trichloromethylpyridine (CAS No. 69045-78-9) is a member of a group of chemicals known as chloropyridines, used in the production of chlorinated pesticides. The safe handling information for this stream will be determined from existing data for the material and from a qualitative structure-activity relationship (QSAR) program.

III. TEST PLAN RATIONALE

A. Classification of the Chemical as a Site-Limited Intermediate

1. Requirements

Classification of 2-chloro-5-trichloromethylpyridine as a site-limited intermediate under the EPA HPV program is dependent upon a number of criteria outlined by EPA. The Dow Chemical Company asserts that this derivative stream should be regarded as a site-limited intermediate, based on satisfaction of these criteria. In the following paragraphs, we have provided information on the extremely limited potential for exposure during manufacturing, transport, consumption and use.

2. Satisfaction of Requirements

a. Review of Manufacture / Transport / Consumption:

2-chloro-5-trichloromethylpyridine is produced within The Dow Chemical Company's Pittsburg Operations Site located in Pittsburg, CA. The 2-chloro-5-trichloromethylpyridine is generated and consumed within the Pittsburg, CA site for the production of pesticides.

b. Environmental Fate

The potential for environmental exposure to 2-chloro-5-trichloromethylpyridine derivatives is negligible. There are no releases to water or land unless a major plant upset occurred. The intermediate is generated, stored in a tank, then fed directly to the plant for the production of pesticides.

c. Human Exposure

The potential for human exposure is also extremely low. Potential exposure is limited to maintenance activities. Maximum personal protective equipment is required for any potential contact.

3. Conclusion

The Dow Chemical Company believes that the information above fully satisfies the EPA's criteria on site limited intermediates. Further, the above information suggests that there appears to be little additional action that could be taken to prevent any further exposure as the exposure simply doesn't occur.

B. Human Health Effects

There are six mammalian toxicity endpoints in the HPV Program:

- Acute Toxicity
- Repeated Dose Toxicity
- Genetic Toxicity *In Vitro*
- Genetic Toxicity *In Vivo*
- Reproductive Toxicity
- Developmental Toxicity

In an effort to reduce animal testing and to leverage existing data, acute toxicity data as detailed in the Robust Summaries and a qualitative structure-activity relationship (QSAR) program will be used to satisfy the requirements of all required mammalian testing not already

available for 2-chloro-5-trichloromethylpyridine. Additional testing would be unlikely to change safe handling recommendations for this material. Thus, the Robust Summaries provide adequate data to characterize the human health effects endpoints under the Program.

C. Ecotoxicity

There are three aquatic toxicity endpoints in the HPV Program:

- Acute Toxicity to Fish
- Acute Toxicity to Aquatic Invertebrates
- Toxicity to Algae (Growth Inhibition)

In an effort to reduce testing and to leverage existing data, acute toxicity data as detailed in the Robust Summaries and a qualitative structure-activity relationship (QSAR) program will be used to satisfy the requirements of all required ecotoxicity testing except Toxicity to Algae. For this endpoint, data for a similar material, 2,3,4,5,6-pentachloropyridine (CAS No. 2176-62-7), will be used.

D. Environmental Fate

Predictive models were used to develop meaningful data for chemicals that are gaseous at relevant environmental temperatures and pressures. The environmental fate data include:

- Photodegradation
- Stability in Water (Hydrolysis)
- Transport and Distribution (Fugacity)
- Biodegradation

In an effort to reduce testing and to leverage existing data, acute toxicity data as detailed in the Robust Summaries and a predictive model program will be used to satisfy the requirements of all required environmental fate testing.

E. Physicochemical Properties

The physicochemical properties include:

- Melting Point
- Boiling Point
- Vapor Pressure
- Octanol/Water Partition Coefficient

Data for physicochemical properties will be summarized from various resources and/or calculated using a predictive model and detailed in the Robust Summaries.

IV. TEST PLAN SUMMARY

This test plan is expected to provide adequate data to characterize the human health effects and environmental fate and effects endpoints under the Program.

For reasons indicated in the above paragraphs, we do not believe additional data needs to be generated beyond the studies listed. Due to the nature of the chemical, the manner in which the chemical is manufactured, distributed, processed and used, the product stewardship measures taken to prevent exposure; and existing human/environmental data, we believe that our workers, the public and the environment are well protected from exposure to 2-chloro-5-trichloromethylpyridine.

REFERENCES

1. US EPA. 1999. Determining the Adequacy of Existing Data. OPPT, EPA.
2. DEREK Version 7.0 for Windows, Lhasa LTD, 2003.
3. Meylan, W., 1997. EPISUITE for Microsoft Windows.