

**201-15032A**

**HIGH PRODUCTION VOLUME (HPV)**

**CHEMICAL CHALLENGE PROGRAM**

**TEST PLAN**

**For**

**METHYL CHLOROPYRIDINE DERIVATIVES**

**Prepared by:**

**The Dow Chemical Company**

RECEIVED  
OPPT/CHIC  
04 JAN 13 AM 10:37

**December 5, 2003**

## **PLAIN ENGLISH SUMMARY**

This test plan addresses methyl chloropyridine derivatives (CAS No. 70024-85-0). 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 methyl chloropyridine derivatives 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 stream.

**TABLE OF CONTENTS**  
**TEST PLAN FOR METHYL CHLOROPYRIDINE DERIVATIVES**

	PAGE
PLAIN ENGLISH SUMMARY	i
EXECUTIVE SUMMARY .....	ii
I. INTRODUCTION .....	1
II. DESCRIPTION OF METHYL CHLOROPYRIDINE DERIVATIVES .....	1
III. TEST PLAN RATIONALE .....	1
B. Human Health Effects .....	2
C. Ecotoxicity .....	3
D. Environmental Fate .....	3
E. Physicochemical Properties .....	3
IV. TEST PLAN SUMMARY .....	4
REFERENCES .....	4

## **TEST PLAN FOR METHYL CHLOROPYRIDINE DERIVATIVES**

### **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 methyl chloropyridine derivatives 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 METHYL CHLOROPYRIDINE DERIVATIVES**

#### **A. The Chemical**

Methyl chloropyridine derivatives (CAS No. 70024-85-0) is a stream containing members 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 other structurally similar materials which have been studied to provide safe handling information.

### **III. TEST PLAN RATIONALE**

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

##### 1. Requirements

Classification of methyl chloropyridine derivatives 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:

The site-limited methyl chloropyridine derivatives are produced within The Dow Chemical Company's Pittsburg Operations Site located in Pittsburg, CA. The methyl chloropyridine derivatives are generated, loaded bulk into pressure vessels and incinerated within the Pittsburg, CA site.

#### b. Environmental Fate

The potential for environmental exposure to methyl chloropyridine derivatives is negligible. There are no releases to water or land unless a major plant upset occurred. The methyl chloropyridine derivatives are generated, followed by incineration with the purpose of producing HCl, which is sold.

#### c. Human Exposure

The potential for human exposure is also extremely low. Potential exposure is limited to maintenance activities. The protective equipment required for these activities would include a Tyvek suit (PVC suit if tar is managed at elevated temperatures), rubber boots, Nitrile gloves, hard hat and a full face respirator.

### 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, published and unpublished data for 2,3,4,5,6-pentachloropyridine (CAS No. 2176-62-7), as detailed in the attached Robust Summaries, will be used as a surrogate to satisfy the requirements of all required

mammalian testing. This material is a component of the methyl chloropyridine derivatives stream, and the safe handling procedures detailed for pentachloropyridine are conservatively estimated to provide adequate protection from the derivatives stream. Additional testing would be unlikely to change safe handling recommendations for the derivatives stream. Thus, the attached 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, published and unpublished data for 2,3,4,5,6-pentachloropyridine (CAS No. 2176-62-7), as detailed in the attached Robust Summaries, will be used as a surrogate to satisfy the requirements of all required ecotoxicity testing.

### **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, published and unpublished data for 2,3,4,5,6-pentachloropyridine (CAS No. 2176-62-7), as detailed in the attached Robust Summaries, will be used as a surrogate 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 detailed in the attached 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 the methyl chloropyridine derivatives stream.

#### **REFERENCES**

1. US EPA. 1999. Determining the Adequacy of Existing Data. OPPT, EPA.