006315
A. 028501

Shaughnessy No.: 8, 4

Due date: ~~9/28/84~~

To: Castillo
Product Manager #32
Registration Division (TS-767)

27 SEP 1984

From: Samuel M. Creeger, Chief
Environmental Chemistry Review Section 1
Exposure Assessment Branch
Hazard Evaluation Division (TS-769c)

Attached, please find the EAB review of:

Reg./File No.: 38906-RE, - RU, - RG, - RL, -T

Chemical: (A) 1,3-dichloro-5,5-dimethyl hydantoin

(B) 1,3 dichloro-5-ethyl-5-methyl hydantoin

Type Product: Microbiocide

Product Name: Dantochlor

Company Name: Glyco

Submission Purpose: response to data requirements

ZBB Code: other

Action Code: 116

Date In: 8/17/84

EAB No.: 4522-4526

Date Completed: 9/25/84

TAIS (Level II)	Days
61	2.5

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

719

1.0 INTRODUCTION

Chemical Name and Type of Pesticide: swimming pool disinfectant (spd)
cooling water/air washers (cw/aw)

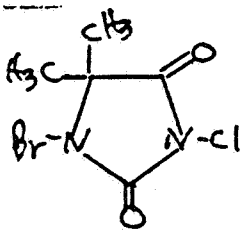
A. 1-bromo-3-chloro-5,5-dimethylhydantoin, 60% ai(spd)

B. 1,3-dichloro-5,5-dimethylhydantoin, 27.4% ai (spd), 86% ai (cw aw)

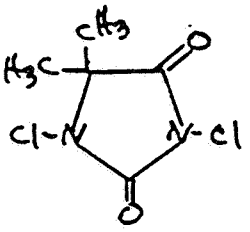
C. 1,3-dichloro-5-ethyl-5-methylhydantoin, 10.6% ai (spd)

Trade Name: DantoBrom P (spd), Danto Chlor RW (cw/aw)

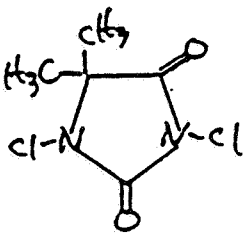
Chemical Structure:



A.



B.



C.

Glyco, Inc. is responding to two previous reviews, DantoBrom RW of 13 April 1984 and DantoChlor RW of 30 April 1984, both for use in recirculating cooling towers and air washers. The two studies that were reviewed, hydrolysis and aqueous photolysis, were considered deficient and inadequate. Glyco is replying to the reviewers comments and also states that the data and conclusions pertain to:

DantoBrom	Reg./File No.	38906-RY
DantoBrom RW	"	" -RE
DantoBrom W	"	" -RG
DantoBrom P	"	" -RL

as well as to the applicable chloro compounds.

2.0 DIRECTIONS FOR USE

The label for DantoChlor RW is attached. The label for DantoBrom P (swimming pool disinfectant) is in a subsequent review (12 Sept. 1984).

3.0 DISCUSSION OF DATA

By way of a response to the comments of the previous reviewers, a report was written by T. Farina and T. Theyson entitled: The Hydrolysis and Photolysis of the Dihalogenated Dialkylhydantoins, July 5, 1984. Another report with essentially the same wording and format, but with one different word in the title was also submitted, the word Dichlorinated was substituted for Dihalogenated in the title.

The reports state that the protocol of the Chemical Fate Testing Guidelines were followed in doing the study. These guidelines are from the Bureau of National Affairs, not from the EPA. Our guidelines have the title: Pesticide Assessment Guidelines Subdivision N, Chemistry: Environmental Fate.

Due to this different experimental approach, Glyco's response to our comments will not be reviewed.

4.0 RECOMMENDATION

4.1 EAB will not review Glyco's responses to our comments on their hydrolysis and photolysis studies at this time for the following reasons:

1. EPA's environmental chemistry guidelines were not followed. Glyco's data and procedure should be applied to our guidelines and the differences between them justified.

2. Glyco should respond to each comment in the previous review (attached).

3. A brief look at the reports by Farina and Theyson seem to indicate that the hydrolysis and photolysis reactions apply to all halogenated hydantoins whether chlorinated or brominated. If this is true, why does one report refer to halogenated hydantoins and the other chlorinated hydantoins? Also, why is Figure 1 of both reports different? The axes in the figure should be labeled (numerical values). A table of the data used to prepare Figure 1 should be provided. It would appear that this decline data could be analyzed by linear regression to obtain a half-life estimate of the hydantoin during hydrolysis.

4.2 A statement on the label indicated that discharge into lakes, streams, and ponds is prohibited unless in accordance with a NPDES permit.

4.3 The data requirements for a product used in recirculating water cooling towers depend upon whether there is Direct Discharge, Indirect Discharge, or No Discharge.

4.4 Direct discharge means "the release, treatment, or application of a pesticide product directly to water at sites within or directly connected to bodies of water to which wild animals, birds, fish, and similar organisms have free access." The requirements for this type of discharge are:

Hydrolysis
Photodegradation-water
Aerobic aquatic metabolism
Anaerobic aquatic metabolism
Leaching (Adsorption/desorption)
Water field dissipation
Fish accumulation
Aquatic nontarget accumulation

4.5 If direct discharge of residues occurs (in accordance with NPDES permit) then the data required are those in Section 4.4

Herbert L. Manning

Herbert L. Manning, Ph.D.
Microbiologist
EAB/HED