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GLYCO CHEMICALS, INC.

HEAD OF TRENTON AVE., WILLIAMSPORT, PA. 17701 (717) 322-4681

8EHQ-0281-0382
88-8600173

REPLY TO:
P.O. BOX 3187
WILLIAMSPORT, PA. 17701

January 30, 1981

Document Control Officer
Chemical Information Division
Office of Toxic Substances(WH-557)
401 M Street, S.W.
Washington, D. C. 20460

EPA
INFO. CONTROL BRANCH
9AM FEB -3 PM 1:18

Dear Sir:

Pursuant to Section 8(e) of the Toxic Substance Control Act, we wish to submit a summary of toxicological data on three related halogenated dimethylhydantoin derivatives. All three compounds are listed in the TSCA Chemical Substances Inventory. They are:

- 1 2,4-Imidazolidinedione, 3-bromo-1-chloro-5,5-dimethyl-
CAS NO 126-06-7
(bromochlorodimethylhydantoin, abbreviated to BCDMH)
- 2 2,4-Imidazolidinedione, 1,3-dichloro-5,5-dimethyl-
CAS NO. 118-52-5
(dichlorodimethylhydantoin, abbreviated to DCDMH)
- 3 2,4-Imidazolidinedione, 1,3-dibromo-5,5-dimethyl-
CAS NO. 77-48-5
(dibromodimethylhydantoin, abbreviated to DBDMH)

The product BCDMH is currently in the research and development stage at Glyco, although it is registered and sold as a pesticide by at least one other U. S. company. We are seeking to develop applications for it in the markets which have been served by DCDMH, a product manufactured and sold by Glyco for over twenty-five years. The toxicological data now being developed on BCDMH by Glyco have been reviewed by consulting toxicologists. Their conclusions from the acute studies now being done on BCDMH according to EPA specification F.R. 43 No. 153.81-1 (EPA-FIFRA, oral, dermal, skin and eye), include the following observations:

- ...toxic to rats and mice with oral LD50s of 600 and 690 mg/kg respectively
- ...moderately severe irritant to the skin

- ...severe irritant to the eyes, causing irreversible cellular damage to eye tissue
- ...at the higher oral dosage levels, systemic effects noted on lungs and other body organs
- ...corrosive to skin tissue
- ...absorption by skin not noted*
- ...skin sensitization - in progress
- ...inhalation toxicity - in progress

The foregoing observations suggested a need to review the results of earlier toxicological studies done on the related compounds, DCDMH and DBDMH. Similar effects in animals were noted for these materials.

We consider these observations to provide a general assessment of the potential hazards of these materials under the most unfavorable exposure circumstances. We do not believe that the data supports the conclusion that BCDMH presents a substantial risk to human health and the environment. Our conclusion is supported by (1) over twenty-five years of continuous experience with the production and marketing of the related product, DCDMH, (2) the results of a 1975 NIOSH survey of plant operations**, and (3) the results of Glyco's 1979 cross-sectional morbidity study by Tabershaw Occupational Medicine Associates. Our experience, the NIOSH study, and Tabershaw all confirm a total absence of occupationally related diseases in the workplace where DCDMH and DBDMH are and were manufactured.

We appreciate your review.

Very truly yours,

GLYCO INC.



T. A. Girard

* The apparent systemic effects observed after dermal application are concluded to be due to entry into systemic circulation through corroded skin tissue.

**NIOSH - Health Hazard Evaluation Determination, Report No. 73-160-206

TABLE I

Compounds	Oral		Dermal		Skin Irritation		Eye Irritation		Sensitization		Inhalation	
	LD50 Rats	(mg/kg) Mice	LC50 (gms/kg) Rabbits	Draize Score Rabbits	Eye Irritation Rabbits	Sensitization Guinea Pigs	In Progress	In Progress	In Progress	In Progress	mg/l (1 hr.) Rats	
BCDMH	600	690	> 5.0	6.98	Irreversible Damage w/wo wash (30 sec.)	In Progress	In Progress	In Progress				
DBDMH	760		> 20.0	5.90	Irreversible Damage w/wo wash (15 sec.)						29.4	
DCDMH	542		> 20.0	6.00	Reversible Damage* w/wo wash						20.5	

* Assayed as a dilute solution @ 600 ppm available chlorine
(to be reassessed undiluted)

Glyco Inc.
1/30/81