

Shaughnessy No.: 032201

Date Out of EAB: 12/8/87

TO: Christine Rice  
Product Manager #23  
Registration Division (TS-767C)

FROM: Michael P. Firestone, Chief *Michael P. Firestone*  
Special Review Section  
Exposure Assessment Branch/HED (TS-769C)

THRU: Paul Schuda, Chief *Paul F. Schuda*  
Exposure Assessment Branch/HED (TS-769C)

Attached, please find the EAB review of:

Reg./File # : 202,665  
Chemical Name: Diquat Bromide  
Type Product: Herbicide  
Product Name: Diquat  
Company Name: Ortho  
Purpose: Exposure Assessment

Date Received: 9/10/87 Action Code: 660

Date Completed: 12/8/87 EAB # (s) : 70946

Monitoring study requested      Total Reviewing Time: 1.0 days

Monitoring study voluntarily     

Deferrals to:      Ecological Effects Branch  
     Residue Chemistry Branch  
  X   Toxicology Branch

## 1.0 INTRODUCTION

The Exposure Assessment Branch has received a request to provide exposure information for the Toxicology Branch to calculate Margins of Safety for the use of diquat by mixer/loader/applicators on terrestrial crop and non-crop sites, aquatic sites, rights-of-way, and golf courses. Exposure information was also requested for swimmers in aquatic sites.


## 2.0 DISCUSSION

Based on the Ortho Diquat label provided with the submission, diquat is a Toxicity Category II product. The NOEL for a 21-day dermal study is 5 mg acid equivalent (a.e.)/kg. Traditionally, EAB has not provided exposure assessments for Toxicity Category II compounds. If deemed necessary, EAB will provide a complete exposure assessment for the terrestrial, aquatic, and rights-of-way uses. The surrogate and diquat exposure data available for aquatic and rights-of-way uses are limited and EAB would recommend an exposure data call-in for these uses. Due to lack of adequate data, EAB would require a data call-in to provide exposure estimates for golf courses.

Exposure to swimmers will occur by the dermal route and oral route. Because of the dermal exposure is a submersion exposure, the estimation of dermal exposure would require knowledge of the dermal absorption of diquat from an aquatic medium on a  $\mu\text{g}/\text{cm}^2/\text{hr}$  basis, i.e., a flux rate. EAB defers to the Toxicology Branch to determine if an acceptable dermal absorption flux rate for diquat exists and, if not, to decide whether to require a data call-in.

Should quantitative exposure assessment be required, EAB suggests TB initiate a team meeting with RD, BUD, and HED (TB, EAB, and SIMS).

EAB has reviewed the Ortho Diquat label's protective clothing and worker safety rules. The label is adequate for worker protection, although EAB believes that waterproof clothing presents acceptability and heat stress problems. The Office of Pesticide Programs is currently promulgating a Label Improvement Program that will address this issue.

  
Curt Lunchick  
Special Review Section  
Exposure Assessment Branch/HED (TS-769C)

CASE FILE NO.:

—TO BE USED FOR REVIEW OF STUDIES PPA ONLY—

PACK No.: 9/11/87

Confidential Business Information—  
Does Not Contain National Security Info. (E.O. 12065)

CHEMICAL NAME:

DIQUAT DIBROMIDE

(RD PROVIDE)  
SHAUGHNESSY NO.  
032201-6

Identifying Number	Action Code	Reference Number	Record Number	Study Guideline or Narrative Description	Reg. Std. Review Submission Criteria (SEE BELOW)	Accession Number	(HFD/BUD/TSS Complete) Study found to be Acceptable (A)/ Unacceptable (U) for review or reviewer comment
239-238	660	9	202665	Exposure Assessment for Dermal Toxicity	2	—	

PRODUCT MANAGER (PM) or REVIEW MANAGER (RM) AND NUMBER:

Mountst, PM-23

PM/RM TEAM MEMBER AND NUMBER:

CHRIS RICE, Team 2.3

DATE RECEIVED (EPA):

8/3/87

RD BRANCH CHIEF INITIALS:

[Signature]

CHECK APPLICABLE BOX:

- Adverse 6(a)(2) Data (405,406)
- Suspect Data (415,416)
- IBT Data (485,486)
- Product Specific Data (Reregistration) (655,656)
- Generic Data (Reregistration) (660,661)
- Special Review Data (870,871)

NUMBER OF INDIVIDUAL STUDIES SUBMITTED:

N/A

HAVE ANY OF THE ABOVE STUDIES (in whole or in part) BEEN PREVIOUSLY SUBMITTED FOR REVIEW? (circle: yes or no) If yes, please identify the study(ies):

No

TO BE COMPLETED BY RSERB

DATE SENT TO HED/BUD/TSS:

9-10-87

PRIORITY NUMBER:

58

PROJECTED RETURN DATE:

11-9-87

DATE RETURNED TO RD (HED/BUD/TSS PROVIDE):

INSTRUCTIONS: Need exposure information for Tox Branch

M.O.S calculations based on 5 mg bw/kg ADEL in 21-day dermal study submitted 8/31/87.

- 1 Consider mixer/loader/applier in terrestrial crop/soil use sites (DOMESTIC/ NON DOMESTIC)
- 2 Consider maintenance workers in golf courses and rights-of-way sites.
- 3 Consider swimmers in aquatic sites. (NOTE: Attached label for 239-1663 shows end-use product use patterns).

REVIEWS SENT TO:

HED:  SIS  TB  RCB  EAB  EEB RD:  TSS BUD:  EAB  SSB

TO:	TYPE OF REVIEW	NUMBER OF ACTIONS		
		Reregistration	Special Review	Other
	Toxicology			
	Ecological Effects			
	Residue Chemistry			
	Exposure Assessment	1		
	Product Chemistry			
	Efficacy			
	Precautionary Labeling/Acute Tox.			
	Science Support			
	Economic Analysis			

FOR DATA SUBMITTED UNDER A REGISTRATION STANDARD: Review Submission Criteria

Policy Note #31

- 1 = data which meet 6(a)(2) or meet 3(c)(2)(B) flagging criteria
- 2 = data of particular concern
- 3 = data necessary to determine tiered testing requirements

NOTE TO TSS: Return 1 Copy To RSERB

INCLUDE AN ORIGINAL AND FOUR (4) COPIES OF THIS COMPLETED FORM FOR EACH BRANCH CHECKED FOR REVIEW.