

PRODUCT PERFORMANCE / EFFICACY REVIEW

Mark Suarez, Entomologist - IB

DATE: 11 July 2008

EPA REG. NUMBER: 81824-RR

PRODUCT NAME: Borathor Max PT
REGISTRANT: Ensystex II, Inc.

PM: Kimberly Nesci, PM
REVIEWER: Melody Banks

DECISION #.: 390494
DP BARCODE: 350393
ACTION: R301

ACTIVE INGREDIENT(S): 011103, Boron Sodium Oxide, tetrahydrate
.....40%

TYPE: Liquid Concentrate

OPPTS GUIDELINE(S): 810.1000
810.3000
810.3600

MRID: 47353301 Submitted GLP? No.

SITES: Structural Protection

PESTS: Termites

STUDY SUMMARIES:

MRID:

78346	Cited	GLP? No.
78347	Cited	GLP? No.
78348	Cited	GLP? No.
40196501	Cited	GLP? No.
40196520	Cited	GLP? No.
40196503	Cited	GLP? No.
40196504	Cited	GLP? No.
40196505	Cited	GLP? No.
40196506	Cited	GLP? No.
40196507	Cited	GLP? No.
40196508	Cited	GLP? No.
40196509	Cited	GLP? No.
45841201	Cited	GLP? No.
46753006	Cited	GLP? No.
47020603	Cited	GLP? No.
47257502	Cited	GLP? No.
47257503	Cited	GLP? No.

ENTOMOLOGIST'S COMMENTS AND RECOMMENDATIONS:

In the cover letter accompanying the pesticide registration application dated 3 March 2008, the registrant indicated that the owner of the data cited have been offered compensation. The data cited are intended to support labeling of Borathor Max PT as a structural pretreatment against subterranean termites and a remedial treatment against termites. The cited data were originally submitted in support of EPA Reg. No. 64405-1, Bora Care. The subject product formulation is substantially similar to that of the cited product for the purposes of this product performance evaluation. Of the data cited, only MRID 46753006 can be considered directly relevant the desired product labeling. The summary of these data from the 18 June 2006 efficacy review associated with the original submission is provided below:

“MRID 46753006. Williams, L.; Amburgey, T. (2006) Barriers of Glycol/Borate Treated Wood Prevent Termite Attack to Untreated Wood Above Them in 10-yr Field Tests. Project Number: EC/03/198. Unpublished study prepared by Mississippi Forest Products Laboratory. 19 p.

A 10 year field trial designed to evaluate the efficaciousness of BoraCare (1:1 and 1:6 dilutions) against termites (*R. flavipes*) was conducted in Mississippi.

Floor Joist Units

Five replicates for each treatment of simulated crawl space trials with span and header joists on half buried cinder blocks were constructed at each of 3 USFS plots in Gulfport, MS. Distribution of the treatment and control units was according to the completely randomized design. The span joists were treated once on each side, while the header joists were treated twice on the inside surface only. Untreated pine sapwood was placed on top of each unit. The units were covered with painted plywood boxes to provide protection from the elements.

The data indicate that through the 10 year field study, the product is efficacious are a pretreatment, as applied in the trial (See Table 1 from MRID 46753006). Only one failure was reported for the 1:1 dilution.

Tubing units

Replicates of each of three treatments (1:1 & 1:6 BoraCare:water and water control) were constructed to test the effectiveness of simulated wall studs. A 610 mm long piece of southern pine (treated or untreated) was placed just above the ground with a piece of untreated pine on top of it. PVC tubes housed the wood pieces. Termite activity in the plots was verified with monitoring stakes placed adjacent to the PVC tubes.

Over the 10 year trial, only one tube (out of 15) treated with 1:1 BoraCare had any tubing (250 mm). In the 1:6 BoraCare treatment, 7/9 units had tunneling (100 to 460mm) in years 1-5 and one 250mm tube in year 7. Termites did not reach the untreated wood in BoraCare treatments. In the water controls, 9/15 unit had tubing in

years 1-5, in years 6, 7, and 9 controls had tubing ranging from 100 to 610 mm on 3, 4, and 2 units, respectively.

Table 1. Joist test. Mean stake ratings for termite attack by plot, treatment and incidence percentages for termites beneath test units for yrs 1997-2001 and for attack of untreated wood above units during 10 test yrs.

Treatment/ Type of wood ^a	Mean monitor stake ratings ^b					Percent incidence of termites in soil beneath test units ^c	Percent incidence of termite attack to untreated wood above units ^d
	1997	1998	1999	2000	2001		
Plot A							
Treated/old	3.6	3.3	4.7	3.3	2.0	96	0
Control/old	4.1	4.7	5.1	4.8	6.9	72	22
Treated/new	3.1	4.5	4.0	3.7	2.5	84	2
Control/new	2.9	4.4	2.5	2.4	2.4	88	12
Plot B							
Treated/old	7.0	8.1	8.5	6.2	5.4	72	0
Control/old	5.3	7.0	8.0	7.8	4.8	92	18
Treated/new	5.2	7.3	6.8	5.6	4.9	84	0 ^e
Control/new	7.6	7.6	7.6	5.4	6.9	72	12
Plot C							
Treated/old	4.9	6.9	5.8	4.3	7.8	80	0
Control/old	4.8	6.2	5.3	7.0	2.9	84	14
Treated/new	3.3	6.8	5.9	1.1	6.7	84	0 ^e
Control/new	8.2	5.4	3.9	3.4	6.9	96	8

All treated wood was sprayed to the point of runoff with a 1:1 dilution of Bora-Care[®]; span joist pieces were treated once on each side and header joists twice on the inside only.

^bEach entry represents the avg of 10 replicates. Rating scale (AWPA Standard E7-93) ranges from 0-complete failure to 10-no attack.

^cAs verified by termite damage to one or both monitor stakes within a test unit for 5 test units per treatment for each of 5 yrs calculated as a percentage of 25 chances for termites to have been present.

^dEach entry represents percentage of times for 50 replicates or chances that wood above 5 test units was attacked during 10 yrs; units themselves may have been attacked at much higher percentages.

^eTermites reached untreated wood above one unit by tunneling through monitoring stake.

The data provided in support of the use of BoraCare as a structural pretreatment are varied. In the case of the Gulfport studies, the joist tests appear to strongly support the efficaciousness of the product against subterranean termites under simulated field conditions. However, the tubing unit data supported only the 1:1 rate.”

Recommendations:

1. The data cited are adequate to support a structural pretreatment claim against subterranean termites (*Reticulitermes* spp. only)
 - a. The registrant may not claim that the product is a substitute for a soil applied liquid termiticide.
 - b. As a preconstruction treatment, the product must be applied at a dilution ratio of 1:1 water: Borathor Max PT
 - c. The product must be applied to the point of run-off
 - d. The product must only be used as a structural pretreatment against termites on wood protected from the elements
 - e. Two applications to sill plates and other lumber in contact with the foundation are mandatory. The first application must be completely dry before the second application,
 - f. Treated lumber must not be in contact with the soil or a moisture source.
2. Claims against drywood termites may be included on the label, at a dilution ratio of 1:1 applied by drill and injection treatment only.
 - a. No topical treatment is supported.

When applied as a liquid, no ratio of less than 1:1 Borathor Max PT:Water is supported.

Label Comments:

There are numerous inconsistencies between the subject product's proposed labeling and the most recent version of the cited product label [EPA Reg. No. 64405-1]. Revise the label to retain all mandatory language present on the BoraCare label, including but not limited to application rates, directions for use, and use restrictions.

For example, the submitted label indicated that the applicator should make a second application to wood exposed on only one or two sides. Modify this direction to read "...must make a second..."

Also, the disclaimer on page 3 indicating that the product is not to be applied to soil is incomplete. Include the entire disclaimer. "BORATHOR MAX PT is not for application to soil; it is not a soil termiticide. **Do not use to directly treat soil.** When an active infestation exists, get a professional inspection."