

US EPA ARCHIVE DOCUMENT

229

EEE BRANCH REVIEW

DATE: IN 11/28/78 OUT 12/8/78 IN \_\_\_ OUT \_\_\_ IN \_\_\_ OUT \_\_\_

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. \_\_\_\_\_

PETITION OR EXP. PERMIT NO. 10182-EUP-11

DATE DIV. RECEIVED \_\_\_\_\_

DATE OF SUBMISSION \_\_\_\_\_

DATE SUBMISSION ACCEPTED \_\_\_\_\_

TYPE PRODUCT(S): I, D, H, F, N, R, S Pool sanitizer

DATA ACCESSION NO(S). 234289

PRODUCT MGR. NO. 32

PRODUCT NAME(S) BAQUACIL

COMPANY NAME ICI Americas Inc.

SUBMISSION PURPOSE EUP/ DATA EVALUATION

CHEMICAL & FORMULATION PHMB

Poly (iminoimidocarbonyliminoimidocarbonyliminohexamethylene  
hydrochloride)

100.0 Pesticide Use.

Baquacil will be used as a swimming pool sanitizer.

100.1 Application Method/Directions:

Dose and maintain:

Adjust pH to 7.0-8.0 and add Baquacil at a 50 ppm level (10 ppm active). Frequency of additional doses of Baquacil will depend on pool load and amount of organic debris.

Overwinter:

Adjust Baquacil level to 50 ppm and top up every several months as indicated.

100.2 Application Rates:

For every 10,000 gallons ( $38 \text{ m}^3$ ) of untreated water in the pool, treat with 0.5 gal of Baquacil to 50 ppm, 0.60 gal. to reach 60 ppm, and 0.75 gal. to reach 75 ppm Baquacil in the water.

100.3 Precautionary Labeling

This product is toxic to fish. Do not contaminate water by cleaning of equipment or disposal of wastes. Keep out of lakes, streams or ponds.

100.4 Proposed EUP Program

Unknown.

101.0 Chemical and Physical Properties

101.1 Chemical Name

Poly (iminoimidocarbonyliminoimidocarbonylimino-hexamethylene hydrochloride)

101.2 Common Name.

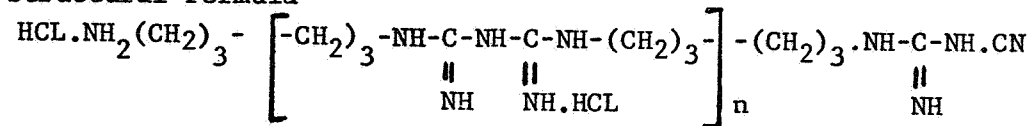
PHMB

Polyhexamethylene biguanide

Other Product names are:

Vantocil IB  
Baquacil and Baquacil SB  
PHMB (20%)  
Cosmoquil CQ

101.3 Structural Formula



101.4 Molecular Weight

(219.7)n

(n average 4.5 to 6.5)

101.5 Physical State

Color--Colorless to pale straw or pale yellow, clean or almost clear liquid with not more than traces of insoluble matters.

Odor-- practically odorless

101.6 Solubility

Specific solubilities are not known; however, it is soluble in water.

102.0 Behavior in the Environment

103.0 Toxicological Properties

103.1 Mammal (DATA NOT VALIDATED)

Rat acute dermal > 5.0 ml/kg (formulated product)

103.2 Bird.

No data available.

103.3 Fish.

Trout 96-hr LC50= 13.5 mg/l (20% a.i.) Supplemental.  
bluegil 96 hr LC50=.62 mg/l (20% a.i.) Supplemental.

103.4 Aquatic invertebrate.

Daphnia magna 48 hr. LC<sub>50</sub> .18 mg/l (20% a.i.)  
Supplemental.

104.0 Hazard Assessment.

104.1 Discussion.

The hazard to fish and wildlife is dependent on the method pool water is discharged to the environment. Little or no hazard is associated with the water in the pool. The possibilities of hazard exists when and if a pool is emptied and whether or not wildlife come in contact with the discharged water.

104.1.1 Likelihood of exposure to non-target organisms.  
See 104.1 above.

104.1.2 Endangered Species Considerations.

Section 104.1 above also applies to endangered species.

104.1.3

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104.1.4 Adequacy of Toxicity data/Data Required

Submitted data is not adequate to support registration of the product. See section 107.5 for data requests.

107.0 Conclusions.

107.1 Environmental Fate and Toxicology.

Neither review has been referenced or used for this review.

107.2 Classification.

Classification has not been determined.

107.3 Labeling.

Label statements will be specified after fish and wildlife data has been submitted and examined.

#### 107.4 Data Adequacy

The following studies are not adequate to support registration of Baquacil for the reasons listed.

- (a) Acute toxicity of Vantocil 1B, mix No. 1857, to bluegill (lepomis macrochirus) and the water flea (Daphnia magna) dated June, 1977, is unacceptable because

Both studies tested the formulated product; tests on the technical material is required for registration. If tests on the formulated product is necessary it may be used.

- (b) Determination of the acute toxicity to rainbow trout of Vantocil 1B in freshwater, February, 1975, by Brixham Laboratory, ICI, LTD. BL/B/1631. Study is unacceptable for the following reasons:

- (1) Study tested the formulated product
- (2) Using the  $ET_{50}$  to determine  $LC_{50}$  is not an acceptable method. If the dose-response data is available to determine a 96 hr.  $LC_{50}$  value, the study will be reevaluated and may be used if an  $LC_{50}$  value for the formulated product is necessary.

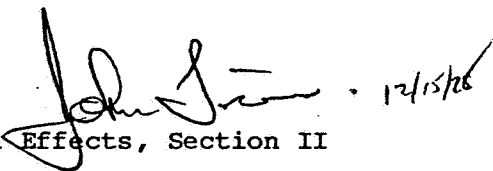
#### 107.5 Data Requests


Prior to registration of the product the following basic studies must be supplied or referenced for each active ingredient of the product.


1. Avian subacute dietary  $LC_{50}$  studies for both wild waterfowl (preferably mallard duck) and upland game bird (preferably bobwhite quail or ring-necked pheasant).
2. Avian acute oral  $ID_{50}$  for one of the species tested in (1) above.
3. Fish acute 96 hour  $LC_{50}$  studies for one species of warmwater (preferably bluegill sunfish) and for one species of coldwater (preferably rainbow trout) fish.
4. An aquatic invertebrate acute 48 hour  $LC_{50}$  study (preferably for Daphnia magna).

107.7 Recommendations

The Environmental Safety Section has no objection to the experimental use of Baquacil. Prior to registration the studies requirements noted in section 107.5 and the label requirements noted in section 107.3 must be met.

 12/15/78  
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