

US EPA ARCHIVE DOCUMENT

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ENVIRONMENTAL FATE AND GROUND WATER BRANCH

To: Walter Francis, PM #31
Registration Division (7505C)

From: Mah T. Shamim, Ph.D., Section Chief
Chemistry Review Section 2
Environmental Fate & Ground Water Branch/EFED (7507C)

M. Shamim

Thru: Henry Jacoby, Chief
Environmental Fate & Ground Water Branch/EFED (7507C)

Henry Jacoby 6/17/96

Attached, please find the EFGWB review of...

Common Name:	Tributyltin Methacrylate	Trade name:	Seamate HB33 Anti-Fouling (RED)/(BLUE)
Company Name:	Jotun Valspar		
ID #:	008177-IU, 008177-IG		
Purpose:	Review release rate studies for two antifoulant paints.		

Type Product:	Action Code:	Review Time:
antifoulant	165	2 days

STATUS OF STUDIES IN THIS PACKAGE:

**STATUS OF DATA REQUIREMENTS
ADDRESSED IN THIS PACKAGE:**

Guideline #	MRID	Status ¹
release rate	43469102	A
	43469002	A

Guideline #	Status ²
release rate	S
release rate	S

¹Study Status Codes: A=Acceptable U=Upgradeable C=Ancillary I=Invalid.
²Data Requirement Status Codes: S=Satisfied P=Partially satisfied N=Not satisfied R=Reserved W=Waived.

1. CHEMICAL:

chemical name: tributyltin methacrylate
common name: TBT

2. TEST MATERIAL:

Seamate HB33 Red Anti-Fouling

3. STUDY/ACTION TYPE:

Review release rate data submitted in support of registration.

4. STUDY IDENTIFICATION:

- A. Willis, Charles. "Leach Rate Determinations of Antifoulant Paint Containing Tributyltin." Seamate HB33 Red Anti-Fouling. Performed by Case Consulting Laboratories, Inc. for Jotun Valspar Marine Coatings. Study completed on July 14, 1994. Received by EPA on November 29, 1994. MRID #: 43469002.
- B. Willis, Charles. "Leach Rate Determinations of Antifoulant Paint Containing Tributyltin." Seamate HB33 Blue Anti-Fouling. Performed by Case Consulting Laboratories, Inc. for Jotun Valspar Marine Coatings. Study completed on July 14, 1994. Received by EPA on November 29, 1994. MRID #: 43469102.

5. REVIEWED BY:

Dana S. Spatz
Chemist, CRS #2
EFGWB/EFED/OPP


Date: JUN 6 1996

6. APPROVED BY:

Mah T. Shamim, Ph.D.
Section Head, CRS #2
EFGWB/EFED/OPP


Date: 6/12/96

7. CONCLUSIONS:

The release rate data submitted in support of the registration of Seamate HB33 Red Anti-Fouling and Seamate HB33 Blue Anti-Fouling are acceptable for certification purposes. The certified average release rate of the Seamate HB33 Red paint is 3.00

$\mu\text{g}/\text{cm}^2/\text{day}$. The certified average release rate of the Seamate HB33 Blue paint is $2.76 \mu\text{g}/\text{cm}^2/\text{day}$. These paints meet the $4.0 \mu\text{g}/\text{cm}^2/\text{day}$ release rate restriction imposed by OAPCA. The 14-day cumulative release rate is $56 \mu\text{g}/\text{cm}^2$ for the Seamate HB33 Red paint and $51.3 \mu\text{g}/\text{cm}^2$ for the Seamate HB33 blue paint.

8. **RECOMMENDATIONS:**

Jotun Valspar has fulfilled the release rate study requirements for the paints cited above. Seamate HB33 Anti-fouling (RED) and Seamate HB33 Anti-fouling (BLUE) are certified by EFGWB to have an average release rate below the $4.0 \mu\text{g}/\text{cm}^2/\text{day}$ restriction imposed by OAPCA.

9. **BACKGROUND:**

The release rate data reviewed in this submission were generated using the "Interim Draft of the ASTM Standard Test Method for Organotin Release Rates of Antifouling Coating Systems in Sea Water."

10. **DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:**

A. **Seamate HB33 (Red)**

Material and Methods:

Polycarbonate cylinders were fabricated and prepared for coating. Seams were sealed with a bead of polycarbonate/methylene chloride cement, as were the bottoms. Individual cylinders were coated (method not specified) to reach a minimum thickness of 0.004". The leach rate test was started 7 days after painting.

The measuring beakers were calibrated with a mark at 1500 ml of sea water. Sea water was made as per ASTM D-1141, Section 6 and stored in a 100 liter tank that was continually pumped through an activated carbon filter at 5 liters/minute. Temperature was maintained at $25^\circ\text{C} \pm 2^\circ\text{C}$. Tin content, pH, and salinity were measured at 3-7 day intervals.

Stirring time was 60 minutes for each leach rate determination period. All paint cylinders were rotated at 60 ± 5 rpm for the 1 hour immersion time. When the elapsed time was reached, a 25 ml sample of sea water was pipetted from each container and transferred to a HCl cleaned and rinsed, 60 ml glass bottle containing enough dilute HCl to maintain a $\text{pH} < 4$ and sealed with a polyolefin lined cap. Bottles were placed in a refrigerator until extracted and analyzed (maximum of 15 days). Acceptable storage stability data were previously submitted.

The painted cylinders were then placed in a holding tank of synthetic sea water until the next sampling point. Sampling containers were emptied, washed thoroughly with tap water, rinsed with DI water and dried before reuse.

Each holding tank was checked every 3 to 7 days for pH and salinity via specific gravity. Tin concentrations were determined by AA on a weekly basis. Each sea water tank volume was pumped through its own activated carbon filter cartridge and returned to the bottom of the opposite tank end. Carbon cartridges were changed when tin values reached approximately 20 ppb.

Quality Control Results:

An EPA Standard Test Paint was run during the release rate experiment. The average release rate for the STP was $3.53 \mu\text{g}/\text{cm}^2/\text{day}$. Spike recoveries (30, 40, and $50 \mu\text{g Sn/L}$) ranged from 90.7% to 108.3%, with an overall average value of 98.9%.

B. Seamate HB33 (Blue)

Material and Methods:

Polycarbonate cylinders were fabricated and prepared for coating. Seams were sealed with a bead of polycarbonate/methylene chloride cement, as were the bottoms. Individual cylinders were coated (method not specified) to reach a minimum thickness of 0.004". The leach rate test was started 7 days after painting.

The measuring beakers were calibrated with a mark at 1500 ml of sea water. Sea water was made as per ASTM D-1141, Section 6 and stored in a 100 liter tank that was continually pumped through an activated carbon filter at 5 liters/minute. Temperature was maintained at $25^\circ\text{C} \pm 2^\circ\text{C}$. Tin content, pH, and salinity were measured at 3-7 day intervals.

Stirring time was 60 minutes for each leach rate determination period. All paint cylinders were rotated at $60 \pm 5 \text{ ppm}$ for the 1 hour immersion time. When the elapsed time was reached, a 25 ml sample of sea water was pipetted from each container and transferred to a HCl cleaned and rinsed, 60 ml glass bottle containing enough dilute HCl to maintain a $\text{pH} < 4$ and sealed with a polyolefin lined cap. Bottles were placed in a refrigerator until extracted and analyzed (maximum of 15 days). Acceptable storage stability data were previously submitted.

The painted cylinders were then placed in a holding tank of synthetic sea water until the next sampling point. Sampling containers were emptied, washed thoroughly with tap water, rinsed with DI water and dried before reuse.

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Quality Control Results:

An EPA Standard Test Paint was run during the release rate experiment. The average release rate for the STP was $3.53 \mu\text{g}/\text{cm}^2/\text{day}$. Spike recoveries (30, 40, and $50 \mu\text{g Sn/L}$) ranged from 90.7% to 108.3%, with an overall average value of 98.9%.

11. COMPLETION OF ONE-LINER:

Not applicable.

12. CBI APPENDIX:

Not applicable.

Tributylin Methacrylate

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Pages 6 through 17 are not included.

The material not included contains the following type of information:

- Identity of product inert ingredients.
 - Identity of product impurities.
 - Description of the product manufacturing process.
 - Description of quality control procedures.
 - Identity of the source of product ingredients.
 - Sales or other commercial/financial information.
 - A draft product label.
 - The product confidential statement of formula.
 - Information about a pending registration action.
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The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.
