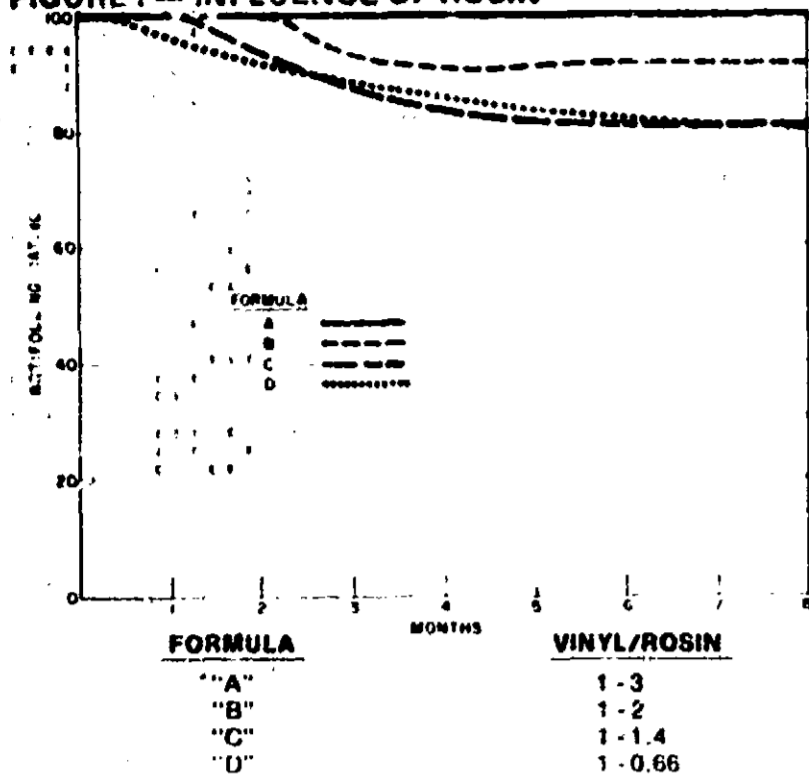


FIGURE I - INFLUENCE OF ROSIN



Antifouling Rating\* 100 = No Fouling 0 = Completely Fouled

**PERFORMANCE OF bioMeT 204 MARINE ANTI-FOULANT IN A CHLORINATED RUBBER SYSTEM**

Typical antifouling results for chlorinated rubber marine paints containing bioMeT 204 or cuprous oxide are presented in Figures II and III. Waterline and submerged panels were exposed from December, 1970, through December, 1972, in Biscayne Bay, Miami, Florida.

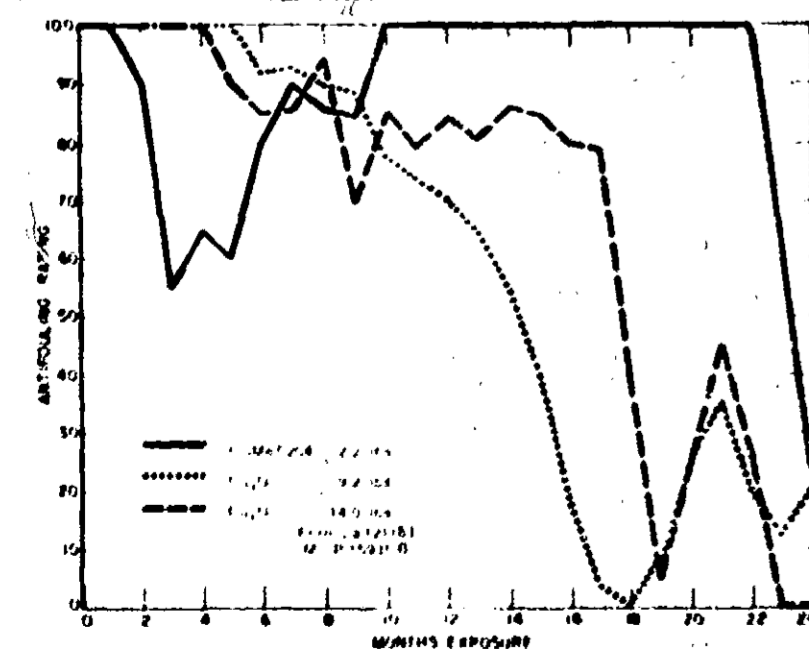
This paint system relies on rosin as the principal release aid with a ratio of 1 part chlorinated rubber to 2 parts of rosin.

Zinc oxide is recommended at a minimum concentration of 10% by weight. Up to 35% can be used when reduced rosin levels are desired, such as in systems employing 2.5 parts of chlorinated rubber to 1 part of rosin.

Tricresyl phosphate at levels up to 6% by weight have also been found to provide a more consistent performance with bioMeT 204, particularly in systems with reduced rosin concentrations.

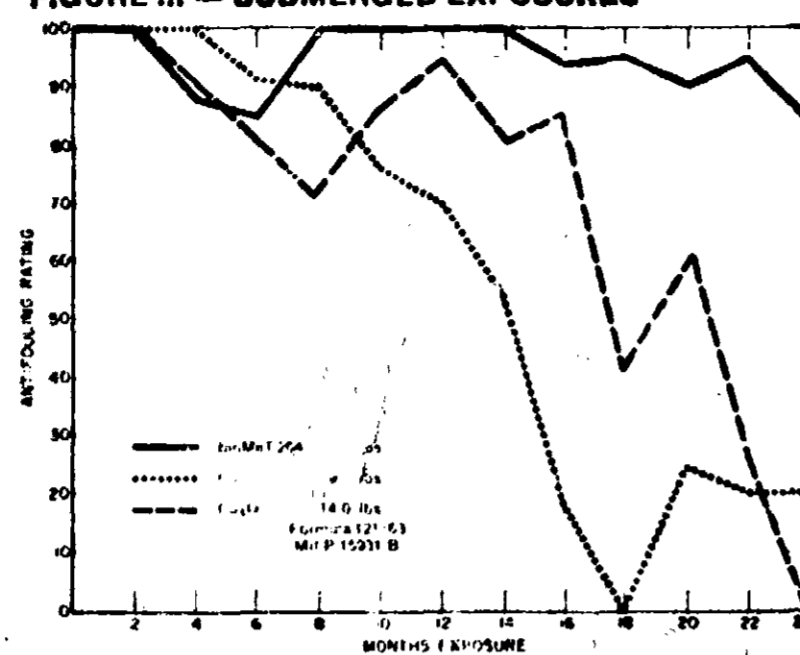
Addition of the tributyltin antifoulants (bioMeT TBTF or TBTO) is suggested for improved algae control in the first few months of exposure.

FIGURE II - WATERLINE EXPOSURES



\*Trademark of M&T Chemicals Inc

FIGURE III - SUBMERGED EXPOSURES



**Vinyl/Rosin Paint (Formula B)**

Ingredients	Lbs.	Gal.
Titanium dioxide	15.02	0.44
Talc	7.73	0.33
Zinc Oxide	9.48	0.20
Vinyl resin (VAGH) <sup>1</sup>	5.00	0.43
Rosin	9.80	1.10
Methylisobutyl Ketone	19.44	2.91
Xylene	18.75	2.63
Bentone 27 <sup>2</sup>	0.51	0.03
Methanol } prewet	0.15	0.02
bioMeT* 204	14.12	1.09
	100.00	9.18

Weight/gal.	10.89
Solids (wt.)	61.15%
Solids (Vol.)	39.43%
Vinyl/Rosin	1/2

- (1) Union Carbide Corp.
- (2) NL Industries

**Chlorinated Rubber Paint**

Ingredients	Lbs.	Gal.
Titanium dioxide	21.48	.63
Zinc Oxide	10.08	.21
Talc	9.08	.38
Parlon S-20 <sup>1</sup>	7.38	.57
Rosin	14.79	1.64
Bentone 27 <sup>2</sup>	0.73	0.04
Methanol } prewet	0.21	0.04
Xylene	19.50	2.73
bioMeT* 204	16.75	1.30
	100.00	7.54

Weight/gal.	13.26 lbs.
Solids (wt.)	80.29%
Solid (Vol.)	63.26%
Resin/Rosin	1/2

- (1) Hercules Inc.
- (2) NL Industries

**CUPROUS OXIDE CONTROL**

Ingredients	Lbs.
Parlon S-20 <sup>1</sup>	6.6
Rosin	4.8
TCP	2.2
Thixatrol ST <sup>2</sup>	0.2
Cuprous oxide	56.9
ZnO	3.5
High flash Naptha	20.6
Xylene	5.2
	100.0

- (1) Hercules Inc.
- (2) Baker Castor Oil Co.

Weight/gal.	16.2 lbs.
PVC	50%
Solid (wt.)	74.2
Solid (Vol.)	41.3

**TOXICOLOGICAL PROPERTIES**

Triphenyltin fluoride the active ingredient in bioMeT 204 Antifoulant, is extremely hazardous to the eyes. Upon contact, it may cause damage if not treated promptly. It is advisable to avoid contact with the eyes. The material is toxic by ingestion and care must be taken to avoid accidental swallowing. While triphenyltin fluoride is not particularly irritating to the skin, it is advisable to prevent skin contamination because of the possible accidental transfer to more sensitive areas of the body. Inhalation of the dust should be avoided.

Paints containing triphenyltin fluoride are hazardous to the eyes and may cause damage. It is advisable to avoid eye contact, especially from splashing while applying paint. Goggles with side protection or a suitable equivalent are recommended while painting. A suitable respirator should be worn, in addition to full

protective clothing while spraying. Care should be taken to prevent accidental swallowing.

These paints may cause skin irritation and precautions should be taken to avoid skin contact.

**SUGGESTED FIRST AID**

Contamination of the eyes should be treated immediately by flushing continuously with water for fifteen minutes. Preferably, a gentle, continuously flowing stream of water should be directed into the open eye (held open, if necessary). A physician should be consulted in the case of accidental swallowing, obtain medical help immediately. In the event of external body contact with triphenyltin fluoride or paints containing it, the area should be washed thoroughly with soap and water followed by a thorough rinsing with water. Contaminated clothing should be removed and washed with soap and water before reuse.

Care should be exercised to prevent the spreading of triphenyltin fluoride, or vinyl paint containing it, to the eyes, nose and mouth.

**EPA LABELING**

Labels to ship bioMeT 204 Marine Antifoulant or its formulations for uses described herein must be registered with the Environmental Protection Agency. Additional information may be required to support registration of your product. bioMeT 204 has been registered as an economic poison with the EPA by M&T Chemicals Inc. - Registration No. 5204-58.

**For Industrial Use Only**

Seller makes no warranty, express or implied, concerning this product or its use other than the conditions of use indicated on its label bearing EPA Registration No. 5204-58 and, subject thereto, Buyer assumes all risk of responsibility for the use and/or handling of this material. Nothing shall be deemed to be a recommendation to use this material in conflict with any patent or other rights of third parties. In no event shall Seller be liable for special or consequential damages.