

NET CONTENTS

Lot No.

TBTO®

BRAND OF BIS (TRI-N-BUTYL TIN) OXIDE
BACTERIOSTAT AND FUNGISTAT
FOR USE IN MANUFACTURING OTHER ECONOMIC POISONS

Manufactured by M & T Chemicals, Inc. for

VIKON CHEMICAL COMPANY, INC.

Box 277

Elon College, North Carolina

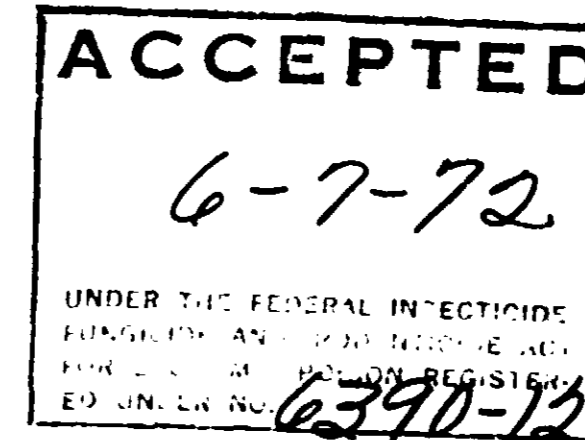
Active Ingredient:

Bis (tri-n-butyltin) oxide 95% min.

Inert Ingredient:

Other Butyltin Compounds 5% max.

Total 100%



WARNING:

Keep Out of Reach of Children.

May be fatal if swallowed. May be absorbed through the skin causing skin irritation. Do not get in eyes, on skin or on clothing. Wear rubber gloves and goggles or face shield when handling. In case of contact, remove clothing immediately and wash skin with soap and water. If irritation persists, get medical attention. In case of contact with eyes, immediately flush with water and get medical attention. Wash contaminated clothing before reuse.

This product is toxic to fish. Do not contaminate water by cleaning of equipment, or disposal of wastes.

Do not reuse empty drum. Return to drum reconditioner or destroy by perforating or crushing and burying in a safe place.

Read technical data bulletin about this product prior to use.

EPA Reg. No. 6390-12

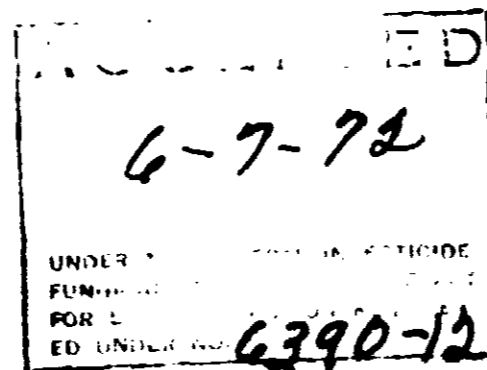
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VIKON CHEMICAL COMPANY, INC.

P. O. BOX 277
ELON COLLEGE, NORTH CAROLINA
27244

Technical Bulletin No. 830

TBTO[®]
Brand of
Bis(tri-n-butyltin) oxide



TBTO[®] is a slightly yellow, clear liquid containing over 95% active ingredient. TBTO[®] is representative of a well-known class of compounds which exhibits control of most fungi and Gram-positive bacteria.

The product is practically insoluble in water but miscible in most organic solvents. The compatibility of TBTO[®] with other biologically active compounds permits unlimited formulation possibilities. In severe leaching conditions where residual control is essential TBTO[®] exhibits adsorption without deactivation.

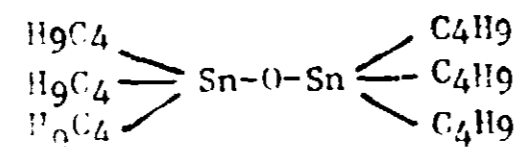
TBTO[®] remains biologically active in alkaline solutions and in dilute mineral acids at room temperature. Cationic or nonionic surfactants do not deactivate TBTO[®]. TBTO[®] is stable up to 140°C for 30 minutes.

In general, TBTO[®] can be formulated with cationic or nonionic surfactants. By increasing the surfactant to TBTO[®] ratios as high as 3 parts of surfactant to 1 part of TBTO[®], adsorption can be readily reduced.

Formulation of TBTO[®] with biologically-active quaternary compounds has been of special interest. Activity of such combinations exceeds either product alone. Formulators must test their own products for effectiveness to support claims they make for their formulations. Manufacturers will also be required to submit efficacy data for products formulated from the basic TBTO[®] bis(tri-n-butyltin) oxide concentrate.

CHEMICAL AND PHYSICAL PROPERTIES

Structure:



Physical form:
Molecular weight:
Boiling point:
Freezing point:
Specific gravity:
Flash point:
Viscosity:

Colorless to slightly yellow liquid
596.0
180°C at 2 mm
Lower than -45°C
1.17 at 25°C
Above 100°C (Tag closed cup)
4.8 centistokes at 24°C

Solubility:

Practically insoluble in water (less than 20 ppm), but miscible in organic solvents

Surface tension:

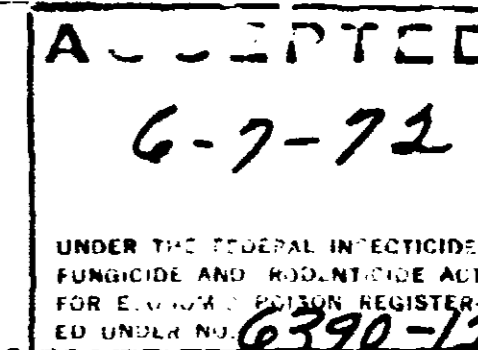
40.0 dynes/cm at 20°C

Typical growth dilution data for various organisms are as follows:

Organism

Minimum Concentration (ppm) for Complete Inhibition of Growth

<u>Aspergillus niger</u>	0.5
<u>Chaetomium globosum</u>	1.0
<u>Penicillium expansum</u>	1.0
<u>Pullularia pullulans</u>	0.5
<u>Trichoderma viride</u>	1.0
<u>Candida albicans</u>	1.0



TBTO[®] will control growth of most gram-positive bacteria as follows:

(ppm) Causing Complete Inhibition of Growth

<u>Bacillus mycoides</u>	0.1
<u>Micrococcus pyogenes var. aureus</u>	1.0
<u>Bacterium ammoniagenes</u>	1.0

Toxicology:

The acute oral LD₅₀ of TBTO[®] on rats is approximately 200 mg/kg. Undiluted TBTO[®] may be fatal if swallowed. The acute dermal LD₅₀ established on albino rabbits is in the range of 11,700 mg/kg. In its undiluted form (95%), TBTO[®] is a primary skin irritant. It has not been established whether or not TBTO[®] is a skin sensitizer. Extensive tests have established that less than 500 ppm on the weight of a textile fiber has no adverse effect on the skin.

WARNING:

Keep Out of the Reach of Children.

TBTO[®] is extremely hazardous to eyes. Upon contact with eyes it may cause damage. TBTO[®] is toxic by ingestion and care must be taken to avoid swallowing. It may be absorbed through the skin causing skin irritation. Do not get in eyes, on skin or on clothing. In case of contact, remove clothing immediately and wash skin with soap and water. If irritation persists, get medical attention. In case of contact with eyes, immediately flush with water for fifteen minutes. A physician should be consulted. Wash contaminated clothing before reuse.

Care should be exercised to prevent the spreading of TBTO[®] to the eyes, nose and mouth. Wear rubber gloves and goggles or face shield when handling.

This product is toxic to fish. Do not contaminate water by cleaning of equipment, or disposal of wastes.

Do not reuse empty drum. Return to drum reconditioner or destroy by perforating or crushing and burying in a safe place.

Our recommendations for use of this product

The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.

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