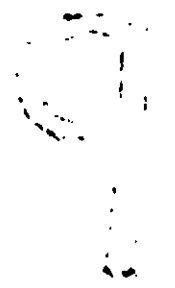


W&M
DOWLING



ANTIMICROBIAL COMPOUND

RECOMMENDED USE IN MANUFACTURING SHOES, LEATHERS AND TEXTILES

W&M CHEMICALS INC.

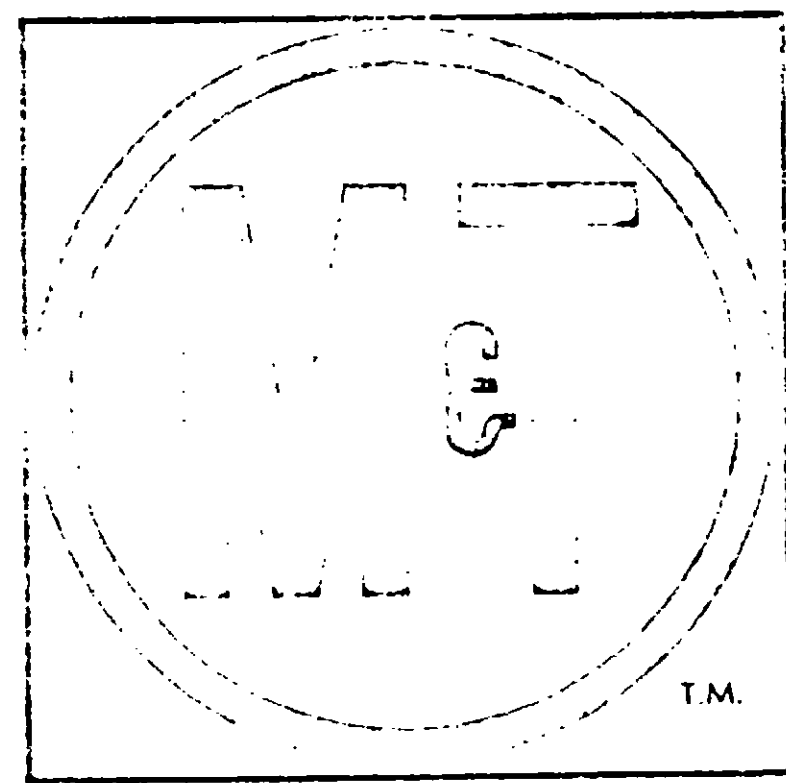
GENERAL OFFICES RAHWAY, N. J.

ACTIVE INGREDIENTS

tri-n-butyltin benzoate	10%
diisobutyphenoxethyl	
dimethyl benzyl ammonium chloride	35%

INERT INGREDIENTS

55%



ORGANIC & INORGANIC CHEMICALS

MINERALS & CERAMICS PRODUCTS

ORGANIC COATINGS & COMPOUNDS

PLATING PROCESSES & EQUIPMENT

DANGER! KEEP OUT OF REACH OF CHILDREN
CAUSES SEVERE EYE DAMAGE
MAY BE FATAL IF SWALLOWED
CAUSES SKIN IRRITATION

Do not get in eyes, on skin, or on clothing.
Wear safety glasses, rubber gloves and protective clothing.
Do not take internally.
Avoid storage near food or feed products.
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get prompt medical attention; for skin, wash with plenty of soap and water. Wash contaminated clothing before reuse.

read technical data bulletin about this product prior to use.

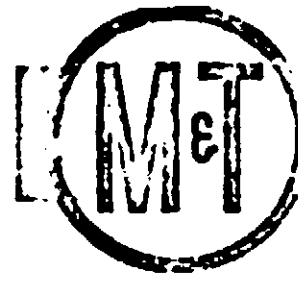
ULDA Reg. No. 5104-

OFFICES IN PRINCIPAL CITIES

NEW YORK

100-100-37

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Trademark

PHYSICAL DATA

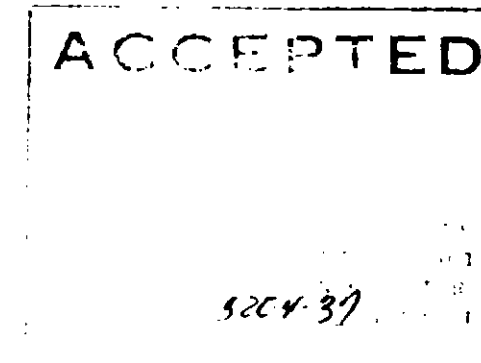
bioMet® 9 ANTIMICROBIAL COMPOUND

SANITIZER FOR USE IN MANUFACTURING TEXTILES AND LEATHER

bioMet® 9 Antimicrobial Compound is a durable formulation designed for use in manufacturing textiles other than baby diapers, and leather designed to stop the growth of most bacteria and fungi and their associated odors. When applied as directed, bioMet® 9 will reduce bacterial contamination to safe levels. It stops the growth of pathogenic or disease causing bacteria, such as staphylococcus aureus, providing the fabric or leather which is self-sanitizing, to aid in reducing the danger of cross infection. Textiles and leather treated with bioMet® 9 will stop the growth of the athletes foot fungi.

Active Ingredients

	<u>Wgt.</u>
tri-n-butyltin benzoate	10%
diisobutylphenoxyethyl dimethyl benzyl ammonium chloride	35%
<u>Inert Ingredients</u>	55%



Physical Properties

Appearance	Clear, pale yellow, slightly viscous liquid.
Odor	Pleasant, non-irritating.
Solubility	Readily dispersible in water and isopropyl alcohol in all proportions.
Clarity	1% solution in water remains clear with a pH of 5.3.
Stability	Stable chemically, physically and bacteriologically from -10°F to 110°F; no separation on freezing and thawing.
Corrosion	Inert in contact with metal or glass.
Specific Gravity	1.030 at 25°C.
Wt./Gal.	8.575
Flash Point	None up to boiling point above 250°F.

Physical Properties (Continued)

Pour Point -10°F.
pH 5.75 - 6.25

Directions For Use

bioMeT* 9 Antimicrobial Compound is recommended for dyebeck, rotary and paddle machine operations as well as other dyeing operations, such as package and beam dyeing.

For hosiery and other fabrics, bioMeT* 9 is recommended for use at a concentration of 0.4% to 0.5% by weight based on the dry weight of goods. This product should first be diluted greater than 10 to 1 with water before charging to the beck. A retention time of 15 to 20 minutes with a maximum temperature of 150°F and pH of 6.5 to 7.5 are considered optimum.

For padding operations incorporating a resin binder into the fabric, a concentration of 0.4% to 0.5% of bioMeT* 9 by weight based on the dry weight of goods is recommended. It is necessary to know the liquid pick-up of the goods in order to determine the bath concentration required. (For example, if the liquid pick-up is 50%, 1.0% of bioMeT* 9 by weight is required in the bath.) bioMeT* 9 is first diluted to a 1% solution with water which is then adjusted to a pH of 4. This solution is then mixed with a solution of the resin before adding to the padding operation. After padding, force dry for a maximum of 2 minutes at 200°F.

bioMeT* 9 Antimicrobial Compound is also recommended for use in the fat liquors and in the long bath for impregnation of leather. In initial trial use 0.5% of bioMeT* 9 based on the dry weight of the leather.

Goods once treated with this material should not be retreated. Large excesses should be avoided as they may result in undesirable side effects.

Bacteriological Data

(a) Broth Dilution

<u>Microorganism</u>	<u>Minimum Concentration for Inhibition of Growth (ppm)</u>
Staphylococcus aureus	0.5 - 1.0
Aerobacter aerogenes	16.0
Pseudomonas aeruginosa	31.0
Candida albicans	2.0
Aspergillus flavus	2.0
Penicillium funiculosum	0.0

(b) Bio-assay (Agar Plate Method - Staphylococcus aureus - FDA 209)

<u>Fabric (loaded with bioassay)</u>	<u>Zone of Inhibition</u>
Cotton	4 mm Complete Zone
Cotton/wool	7 mm Complete Zone
Wool	5 mm Complete Zone
Control	0 (Heavy Growth)

(c) Antibacterial Evaluation - Bacterial Reduction Test - AATCC 100-190.51
against Staphylococcus aureus - FDA 209.

<u>Fabric Treatment</u>	<u>Bacterial Count</u>		
	<u>0 hr.</u>	<u>6 hr.</u>	<u>24 hr.</u>
bioMeT* 9	250,000	<100	<100
Control (untreated fabric)	250,000	9,000,000	8,500,000,000

(d) Antifungal Evaluations - AATCC 90-1, 197

Trichophyton Interdigitale AATCC 90

<u>Fabric Treatment</u>	<u>Zone of Inhibition</u>
bioMeT* 9	6-8 mm Complete Zone
Control (untreated fabric)	No Zone; heavy growth on fabric.

<u>Leather Treatment</u>	<u>Zone of Inhibition</u>
bioMeT* 9	7.0 mm Complete Zone
Control	No Zone; heavy growth on leather.

(e) Mildew Resistance - Test Organism

Chaetomium globosum

	<u>Mildew Growth</u>
Treated Fabric	None
Control	Heavy

(f) Bacterial Counts vs. Concentration of bioMet* 9

Antibacterial activity of treated leather - AATCO
Test Meth. G 100-1957 - Staphylococcus aureus - FDA 101.

Leather Treatment

<u>bioMet* 9</u>	<u>Bacterial Counts</u>
.90%	< 100
.60%	700
.30%	200
.12%	5,100
Control	12,500

Industrial Toxicology-Hygiene

M&T bioMet* 9 is extremely hazardous to the eyes. Upon contact it will cause damage. The effectiveness of an eye lavage with water is considerably less than that with most similar products. Therefore, it is advisable to avoid contact with the eyes. It is advisable to wear chemical goggles and/or full-face shield when handling this product.

This product is very irritating to the skin and is moderately toxic when absorbed through the skin. Therefore, it is advisable to avoid skin contact. The use of rubber gloves and protective clothing is recommended when using this product.

bioMet* 9 is moderately toxic orally and care should be taken to avoid accidental swallowing.

Suggested First Aid

Contamination of the eyes should be treated by immediately flushing with copious amounts of water for fifteen minutes. Preferably, a gentle continuously flowing stream of water should be directed into the open eye (hold open if necessary) for fifteen minutes. A physician should then be consulted.

In the case of ingestion, obtain medical help immediately.

In the event of external body contact with bioMet* 9, the area should be washed thoroughly with soap, containing a builder with alkaline reserve action, and water followed by a thorough rinsing with water. Contaminated clothing should be removed and washed with soap and water.

Care should be exercised to prevent spreading of bioMet* 9 to the eyes, nose, and mouth.