

10324-175

10/22/2008

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Ms. Elizabeth Tannehill  
Mason Chemical Company  
721 W. Algonquin Road  
Arlington Heights, IL 60005

OCT 22 2008

Subject: Maquat MC1412-20%-S&W  
EPA Registration No.: 10324-175  
Application Dated: September 9, 2008  
EPA Receipt Date: September 9, 2008

Dear Ms. Tannehill,

The following amendment, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable subject to the conditions listed below:

**Conditions**

Revise the label as follows:

- 1) Revise the Precautionary Statements to be in agreement with the label review manual. Revise to include: "...chewing gum, using tobacco *or using the toilet.*"
- 2) Although the active ingredient in this product has been cleared for use in paper that contacts food, the entire formulation including the inerts has not be cleared for use in paper that contacts food. Based on a cursory review of the Confidential Statements of Formula for this product there are several dyes which have not been cleared for use in food. Please contact our chemists for information regarding dyes which have been accepted for use in paper that contacts food.

Thus, as previously requested, revise the Pulp and Paper Mills directions on page three by deleting the phrase: "that contacts food" and adding the following statement to this section: ***"Do not use to treat paper or paperboard which will contact food."***

**CONCURRENCES**

SYMBOL	7510P							
SURNAME	J. Jantz							
DATE	10/17/08							

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

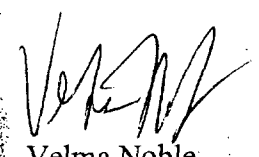
- 3) As stated in the Registration Notice dated August 24, 2007, correct the Once Through Fresh and Sea Water Cooling System section on page three. Revise the rates to be in agreement with the ppm in the Continuous Feed Method, Subsequent Dose section as follows: "Subsequent Dose: Maintain this treatment by starting a continuous feed of 0.14 to 1.4 fluid ounces (0.2 to 2 ppm..."
- 4) In addition, it has been noted that the name in the bottom left corner of each label page is not in agreement with the name of record: Maquat MC1412-20%-S&W. Correct the name at the bottom of each page.

General Comments

A stamped copy of the accepted labeling is enclosed. Submit one (1) copy of your final printed labeling before distributing or selling the product bearing the revised labeling.

If the above conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6 (e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions. Should you have any questions concerning this letter, please contact Tracy Lantz at (703) 308-6415.

Sincerely,



Velma Noble  
Product Manager (31)  
Regulatory Management Branch I  
Antimicrobials Division (7510P)

Enclosure: Stamped Label  
7510P:T.Lantz:10/16/08:10324-175b

CONCURRENCES							
SYMBOL							
SURNAME							
DATE							



# MASON CHEMICAL COMPANY

"The Quaternary Specialists"

721 W. Algonquin Road | Arlington Heights, IL 60005 | 847-290-1621 or 800-362-1855

E.P.A. Reg. No. 10324-175

E.P.A. Est. No. 10324-IL-1

# MAQUAT® MC1412-20%-S &W

Net Contents:

Batch No:

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**DANGER. Keep out of Reach of Children.** Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing. Wear protective eyewear (goggles, safety glasses or face shield), protective clothing, and rubber gloves when handling. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Remove contaminated clothing and wash clothing before reuse.

(If container is 5 gallons or larger the following statement must appear on the label.)

### ENVIRONMENTAL HAZARD

This pesticide is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product into sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Treated lumber must be stored under cover, or indoors, or at least 100 feet from any pond, lake, stream, wetland or river to prevent possible runoff of the product into the waterway. Treated lumber stored outdoors within 100 feet of a pond, lake, stream, wetland, or river must be either covered with plastic or surrounded by berm to prevent surface water runoff into the nearby waterway. If a berm is used around the site, it must consist of impermeable material (clay, asphalt, concrete) and be of sufficient height to prevent runoff during heavy rainfall events.

### PHYSICAL OR CHEMICAL HAZARDS

Do not mix with oxidizers, anionic soaps and detergents.

(If the container is greater than one gallon use the following storage and disposal statements)

### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

- PESTICIDE STORAGE:** Store in original containers and place in locked storage area. Keep from freezing.
- SPILL OR LEAK PROCEDURES:** Small spills may be mopped up or flushed away with water or absorbed on some absorbent material and incinerated. Large spills should be contained, the material then moved into containers and disposed of by approved methods for hazardous wastes.
- PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
- CONTAINER DISPOSAL:** Do not reuse empty container (bottle, cans, jars). Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or incinerate or if allowed by state and local authorities, by burning. If burned stay out of smoke.
- GENERAL:** Consult Federal, State, or local disposal authorities for approval of alternative procedures such as limited open burning.

(If container is one gallon or less use the following storage and disposal statements.)

### STORAGE AND DISPOSAL

Store in original container and place in locked storage area inaccessible to children and persons unfamiliar with its proper use. Do not reuse empty container. Wrap container and discard in trash.

MAQUAT® MC1412-20%-S&W for Control of Algae and Algal Slime Growth in Industrial and/or Commercial Recirculating Cooling Water Towers, Retort Water Systems and Molluscs in Once Through Fresh and Sea Water Cooling Systems and Mold, Mildew and Fungi in Sap Stains and Wood Preservatives. Controls bacteria and fungal slimes in pulp, paper mills and paper manufacturing.

For Control of Algae and Algal Slime Growth in Swimming Pools, (Outside) Spas/Whirlpools/Hot Tub Baths, Containers, and Decorative Fountains.

("Containerized", "Outside" description and the use site "Retort Water Systems" not for use in California.)

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<b>ACTIVE INGREDIENTS</b>	Under the Federal Insecticide, Fungicide, and Rodenticide Act as dimethyl benzyl ammonium chloride, Pesticide;	20.00%
<b>INERT INGREDIENTS</b>	Registered under EPA Reg. No. 10324-175	80.00%
<b>TOTAL:</b>		100.00%

Weight: Approx. 8lbs./gallon

## KEEP OUT OF REACH OF CHILDREN

## DANGER PELIGRO

See left panel for additional precautionary statements.

### First Aid

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice

**IF SWALLOWED:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

(Note to Reviewer: This information has been verified per DOT regulations. It is NOT required to be on the label but is being requested by a customer.)

### Transportation Information

**DOT Hazard Class:** Not Regulated

**DOT Proper Shipping Name:** Not applicable

**PELIGRO: SI NO PUEDE LEER EN INGLES, PREGUNTE A SU SUPERVISOR SOBRE LAS INSTRUCCIONES DE USO APROPIADAS ANTES DE TRABAJAR CON ESTE PRODUCTO.**

This product is efficient and stable in use dilution.

This product is compatible with most chemicals used in pool water and will not damage tile, concrete, metal or plastics.

This product keeps pool water free and sparkling, clear of visible green and blue-green algae, slime and green brown colors.

This product improves filter operation and reduces need for other chemicals.

This product imparts tone and a pleasant "feel" to swimming pool water.

This product is formulated to complement swimming pool water being treated with normal chlorine systems. It is especially effective against growth of algae and being non-volatile, aids in maintaining pool water clarity and sparkle. The residual effectiveness of this algicide tends to stabilize the total chemical treatment system.

This product is compatible with most chemicals normally used in swimming pool maintenance. However, in its concentrated form, this chemical should not come in contact with high concentrations of chlorine or any other oxidizer. **DO NOT MIX THIS PRODUCT AND CHLORINE OR ANY OTHER OXIDIZER TOGETHER** before adding to the pool. These chemicals should be handled separately.

This product was formulated to complement most swimming pool sanitizers. This product is not a stand-alone product. It must be used with either halogen based or non-halogen based pool sanitizers. This product supports your overall pool chemical maintenance program, offering a residual effectiveness that protects your pool against algae formation while keeping your pool water sparkling clear. This product protects the unattended pool when you're away (refer to Vacation Treatment section under Directions For Use).

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read entire label and use strictly in accordance with precautionary statements and directions.

Do not use water containing residue from use of this product to irrigate crops for food or feed.

Use of the product in either public/municipal or single or multiple family private/residential potable/drinking water systems is strictly prohibited. Use of the product in any cooling water system that discharges effluent within ¼ mile of either a public/municipal or single or multiple family private/residential potable/drinking water intake is strictly prohibited.

### INDUSTRIAL WATER TREATMENT

This product aids in the control of bacterial, fungal and algal slimes in evaporative condensers, heat exchange water systems, industrial and commercial cooling towers.

#### INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER TOWERS, RETORT WATER SYSTEMS

- 1. DOSING LOCATION:** This product is to be applied at a point in the system where it will be uniformly mixed, such as at the sump.
- 2. DOSING CONDITIONS:** This product should be applied when the system is in jeopardy of being affected or after cleaning systems where efficiency is already impaired.
- 3. METHOD OF APPLICATION:**
  - a. INTERMITTENT OR SLUG METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 13.125 to 26.625 fluid ounces (20 to 40 ppm on an active quaternary basis) per 1000 gallons of water in the system. Repeat until control is achieved.

**Subsequent Dose:** When microbial control is evident, add 3.325 to 9.513 fluid ounces (5 to 15 ppm on an active quaternary basis) per 1000 gallons of water in the system twice weekly or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

**b. MODIFIED INTERMITTENT METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 13.125 to 26.625 fluid ounces (20 to 40 ppm on an active quaternary basis) per 1000 gallons of water in the system. Apply half of this initial dose when half of the water in the system has been lost by blowdown.

**Subsequent Dose:** When control of microbial growth is evident, apply 3.325 to 9.513 fluid ounces (5 to 15 ppm on an active quaternary basis) per 1000 gallons of water in the system. Apply half of this subsequent dose when half of the water in the system has been lost by blowdown. Badly fouled systems must be cleaned before treatment is begun.

**c. CONTINUOUS FEED METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 13.125 fluid ounces (20 ppm on an active quaternary basis) per 1000 gallons of water in the system.

**Subsequent Dose:** Maintain this treatment by starting a continuous feed of 3.325 fluid ounces (5 ppm on an active quaternary basis) per 1000 gallons of water lost by blowdown. Badly fouled systems must be cleaned before treatment is begun.

#### ONCE THROUGH FRESH AND SEA WATER COOLING SYSTEMS

- 1. DOSING LOCATION:** This product is to be applied at a point in the system where it will be uniformly mixed, such as at the sump.
- 2. DOSING CONDITIONS:** This product should be applied when the system is in jeopardy of being affected or after cleaning systems where efficiency is already impaired.
- 3. METHOD OF APPLICATIONS:**

**a. INTERMITTENT OR SLUG METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 0.7 to 6.5 fluid ounces (1 to 10 ppm on an active quaternary basis) per 1000 gallons of water based on system flow rates. The minimum treatment should be 6 to 24 hours. Repeat until control is achieved. Deactivation must be conducted prior to discharge from the system by using bentonite clay at a minimum of 5 ppm clay to 1 ppm product.

**Subsequent Dose:** When microbial control is evident, add 0.3325 to 3.325 fluid ounces (0.5 to 5 ppm on an active quaternary basis) per 1000 gallons of water based upon system flow rates on a as needed basis to maintain control. Frequency of feed should be tied to an in plant monitoring program for macro fouling growth. Deactivation must be conducted prior to discharge from the system by using bentonite clay at a minimum ratio of 5 ppm clay to 1 ppm product.

**b. CONTINUOUS FEED METHOD**

**Initial Dose:** When the system is noticeably fouled, apply 0.3325 to 3.325 fluid ounces (0.5 to 5 ppm on an active quaternary basis) per 1000 gallons of water based on system flow rates. Continue to feed until needed control is achieved. Deactivation must be conducted prior to discharge from the

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system by using bentonite clay at a minimum ratio of 5 ppm to 1 ppm product.

**Subsequent Dose:** Maintain this treatment by starting a continuous feed of ~~0.0705~~ fluid ounces 0.14 to 1.4 (0.2 to 2 ppm on an active quaternary basis) per 1000 gallons of water based upon system flow rates. Deactivation must be conducted prior to discharge from the system by using bentonite clay at a minimum ratio of 5 ppm to 1 ppm product.

**To Deactivate:** Use bentonite clay at the minimum ratio of 5 ppm clay to 1 ppm product. Deactivation must occur prior to discharge of the NPDES outfall. Do not apply this product more than 4 times a year.

(OR)

#### ONCE THROUGH FRESH AND SEA WATER COOLING SYSTEM

1. **DOSING LOCATION:** This product is to be applied at a point in the system where it will be uniformly mixed, such as at the sump.
2. **DOSING CONDITIONS:** This product should be applied when the system is in jeopardy of being affected or after cleaning systems where efficiency is already impaired.
3. **METHOD OF APPLICATIONS:**
  - a. Wear safety glasses, rubber gloves and impervious apron.
  - b. To reduce foaming, mix 10 parts of water to 1 part of this product.
  - c. 0.7 to 6.5 fluid ounces (1-10 ppm on an active quaternary basis) per thousand gallons.
  - d. Do not discharge without performing proper deactivation. To perform deactivation use Bentonite Clay. The minimum ratio to be used is 5 ppm of clay to 1 ppm of product.
  - e. Do not use product more than 4 times per year.
  - f. Treatment time cannot exceed 120 hours/application.
  - g. Avoid oxidizers and reducing agents. Product is cationic and should not be mixed with soap or anionic surfactants.

**To Deactivate:** Use bentonite clay at the minimum ratio of 5 ppm clay to 1 ppm product. Deactivation must occur prior to discharge of the NPDES outfall. Do not apply this product more than 4 times a year.

### PULP AND PAPER MILLS

#### Slimeicide Applications

This product can be used as a slimeicide in the manufacture of paper and paperboard ~~that contacts water~~, depending on the type of stock, quality of raw water, complexity of the system, and degree of contamination. Apply 1 to 200 pounds of this product per ton (dry basis) of pulp or paper produced. If this product is used to treat whitewater, alternatively apply 2 to 400 pounds of this product per 100,000 gallons of whitewater to be treated (1.0 to 200 ppm product).

**Dosing Application:** This product is to be applied at a point in the system where it will be uniformly mixed, such as at the suction side of a pump. This product should be fed as early as possible in the system. Additions of this product should be made at a point in the system where mixing action is good. Suitable sites are the hydrapulper, suction side of the machine chest or broke system pump. Badly fouled process systems must be cleaned before initial treatment.

#### Control of Bacterial, Fungi/Mold and Algae on Pulp, Paperboard & Wet Lap

This product is used to inhibit fungal growth, which causes discoloration, odor and degradation of paper, paperboard or wet lap. Application of this product should be made at a point in the system where mixing action is good. Application can also be made at

the size press or water box. Apply at a rate of 1 to 200 pounds of this product per ton (dry basis) of pulp or paperboard produced.

**Dosing Application:** This product may be drip fed continuously from the drum, diluted and showered to the wet sheet or fed by suitable pumps.

For inhibition of wet lap or sheet pulp this product should be applied to the dewatered pulp surface via applicator rolls or showers. Application can also be made at the size press or water box.

#### SAP STAIN

For the control of mold and fungus on green or freshly cut lumber. May be used in a dip or spray application. Before use, dilute at rate of 50 - 200 gallons of water per 5 gallons of this product. Seasonal variations in storage and shipping conditions, species and condition of wood should be considered in a manner that ensures that all surfaces are uniformly treated.

For best results, green wood should be treated immediately at least within twenty-four hours after cutting or sawing. Mold and fungus growth begins immediately after cutting so delayed treatment is much less effective and requires increased chemical concentration. Green, untreated lumber should not be used for stickers.

Freshly treated lumber should not be allowed to remain unprotected in heavy rains. Dip tanks and drip aprons must be roofed, paved and drained to prevent dilution and loss of the anti-stain solution.

#### WOOD PRESERVATIVES

This product is a concentrated biocide for use as a wood preservative. When used as directed, this product will protect treated wood articles from the destructive attack of fungi, mold, mildew and both Reticulitermes and Formosan species of termites. Treatment can be done by pressure, double vacuum, dip, brush and/or spray, although dip, brush and spray can not be used for protection against termites. Wood articles that will be protected by these treatments would include millwork, construction timbers, decking, wood shingles, posts and other articles to be used in above ground applications.

OR

This product will protect treated wood articles from the destructive attack of fungi, mold or mildew. Treatment can be done by pressure or double vacuum. Wood articles that will be protected by these treatments would include millwork, construction timbers, decking, wood shingles, posts and other articles to be used in above ground applications.

Treatment can be done by brush or spray for wood shingle applications, and by pressure, double vacuum or dip method for other wood products. Wood articles that will be protected by these treatments would include millwork, construction timbers, decking, wood shingles, and posts.

This product can be used in combination with other EPA registered organic and inorganic wood preservatives or it can be used alone.

#### MAQUAT® MC1412-10%-W

Dilute this product in either water or mineral spirits (or Sentry GoldSeal™) to produce a 0.5% to 3.0% active quaternary ammonium compound solution.

Percent Active Quat Solution	Ounces of this product per gallon
0.5	3.20
1.0	6.40
1.5	9.525
2.0	12.53

2.5	16.00
3.0	19.20

To find the ounces of this product per gallon for other dilutions take the percent active desired and divide by 0.15625.

**MAQUAT® MC1412-20%-S&W AND COPPER COMPOUNDS**

Mix this product with water and either (ACQ-C2 EPA Reg. No 10465-36 or ACQ-C EPA Reg. No. 10465-33) (NW 100-C, EPA Reg. No. 3008-87 or NW 200-C, EPA Reg. No. 10465-33-3008). Refer to the product labels for (ACQ-C and ACQ-C2) (NW 100-C and NW 200-C) for precise mixing instructions. This product may only be used in combination with copper compounds in pressure treatment applications.

**MAQUAT® MC1412-20%-S&W AND BORATES**

Mix this product and either (Disodium Octaborate Tetrahydrate) Wood Bor, EPA Reg. No. 3008-61, Envirotech Insecticide, EPA No. 65705-1, Timbersaver, EPA Reg. No. 71916-1, TimberSaver PT, EPA Reg. No. 71916-1-10465, Tim-Bor, EPA Reg. No. 1624-39, or Cellu-Treat DOT Wood Preservative, EPA Reg. No. 64405-8 in water. Refer to the product labels for precise mixing. This product may only be used in combination with the above borates in pressure treatment or dip treatment applications.

Mix this product and Lum-Bor, EPA Reg. No. 19713-286 in water. Refer to the product label for precise mixing instructions. This product may only be used in combination with the above borate in brush or spray applications.

Mix this product and BORA-CARE, EPA Reg. No. 64405-1 in water. Refer to the product label for precise mixing instructions. This product may only be used in combination with the above borate in dip treatment applications.

**MAQUAT® MC1412-20%-S&W AND PROPICONAZOLE**

Mix this product with Woodlife P, EPA Reg. No. 1409-65 and dilute with water, mineral spirits or other light organic solvent to produce a 0.5 to 3.0% quaternary ammonium compound solution. Follow the instructions on the Woodlife P label for the appropriate concentration of propiconazole. PLEASE NOTE THAT THIS FORMULATION CAN ONLY BE USED FOR DIP TREATMENT.

**PRESSURE TREATMENT**

Place the wood article to be treated into the pressure cylinder and seal unit. Treat the wooden articles using the pressure treatment procedures consistent with the equipment being used and standard treatment practices. Treatment conditions should be such as to produce a 0.1 to 0.6 lb/cu. foot retention in the treatment article. Such treated wood is to be used for above ground uses only.

**DOUBLE VACUUM**

Stack the wooden articles to be treated in the treatment vessel so that the preservative solution will have access to all sides of the articles. Seal the vessel. Reduce the pressure within the vessel to -10 inches for 5 minutes. Cover all the articles with preservative solution. Allow the pressure to return to atmospheric conditions and discharge the preservative solution. Reduce the pressure to -20 inches and maintain for 20 minutes. Allow the pressure to return to atmospheric and remove treated wood articles. Treatment conditions should be used as to produce a 0.1 to 0.6 lbs/cu. ft retention of ADBAC in the treated article. Wood treated to this retention for above ground use only.

**DIP TREATMENT**

Stack the wood to be treated on a suitable holder and convey the stack into the treating solution making sure the stack is completely immersed. Dip times should range from 30 seconds (individual pieces) up to 30 minutes (bundled wooden articles). Use a concentration of 0.5 to 3.0% active quaternary ammonium compound. The

concentration should be customized to the degree of sap stain protection desired, which should be determined by an independent test on the intended species of wood.

**PERSONAL PROTECTION EQUIPMENT FOR PRESSURE TREATMENT, DOUBLE VACUUM AND DIP TREATMENT**

Applicators must wear gloves, which are chemical-resistant (such as nitrile or butyl) in all situations where dermal contact is expected (i.e. handling freshly treated wood and manually opening cylinder doors). Individuals who enter pressure treatment cylinders and other related equipment that are contaminated with the wood treatment solution (e.g. cylinders that are in operation or are not free of all treatment solution) must wear coveralls over a long sleeved shirt and long pants, socks, chemical-resistant footwear, and protective eyewear. Federal, State and local confined space entry procedures need to be taken.

Applicators must not eat, drink or use tobacco products during those parts of the applications process that may expose them to the wood treatment formulation (e.g. manually opening/closing cylinder doors, moving trams out of cylinders, mixing chemicals, handling freshly treated wood).

Wash thoroughly after skin contact and before eating, drinking, use of tobacco products or using restrooms.

Protective clothing must be changed when it shows signs of contamination. Applicators must leave protective clothing and work shoes or boots and equipment at the plant. Worn out protective clothing and work shoes or boots must be left at the plant and disposed of in a manner approved for pesticide disposal and in accordance with State and Federal regulations.

**BRUSH OR SPRAY**

A 0.5% to 3.0% active solution with water (or Sentry GoldSeal™) may be applied by commercial applicators using brush or spray for use on wood shingles or shake roofs and siding on existing homes and on interior construction products and surfaces such as lumber, concrete, sheetrock, wallboard, block and steel. Low-pressure equipment is recommended for spray applications. A moderately fine spray, not an aerosol or fog, generally provides the best coverage at practical product concentrations. Apply only to point of runoff. To make a 0.5% to 3.0% active solution, use the following table:

Percent Active Quat Solution	Ounces of this product per gallon
0.5	3.20
1.0	6.40
1.5	9.525
2.0	12.53
2.5	16.00
3.0	19.20

To find the ounces of this product per gallon for other dilutions take the percent active desired and divide by 0.15625.

**PERSONAL PROTECTION EQUIPMENT FOR BRUSH AND SPRAY APPLICATIONS**

Applicators must wear gloves, which are chemical-resistant (such as nitrile or butyl). Applicators must also wear coveralls over a long sleeved shirt and long pants, socks, chemical-resistant footwear, and protective eyewear. Applicator must not eat, drink, or use tobacco during the application process. Use with adequate ventilation, mist or vapor generated by spraying this product may be harmful if inhaled. Wash thoroughly after skin contact and before eating, drinking, use of tobacco products or using restrooms. Protective clothing must be changed when it shows signs of contamination. Brush/Spray treatment may require frequent changing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated. Do not reuse them.

Follow manufacturers instructions for cleaning/maintaining protective equipment. If no such instructions exist for washables, use detergent and hot water. Keep and wash protective equipment separate from other laundry.

Worn out protective clothing and work shoes or boots must be disposed of in a manner approved for pesticide disposal and in accordance with State and Federal regulations.

## SWIMMING POOLS

### APPLICATION FOR SWIMMING POOLS

This product requires no special equipment for treating swimming pool water. The correct use dilution may be added directly to the pool in any spot or added to the water circulation equipment. This product works best when added by itself directly to pool water.

### INSTRUCTIONS FOR USE WITH HALOGEN BASED POOL SANITIZERS

This product is formulated to complement most swimming pool sanitizers. When using other products as outlined in Directions For Use on those products, always follow Directions For Use of those products. This product is effective against the growth of algae. This product is efficient and non-staining when used as directed. This product will not evaporate and its algae fighting abilities actually increase as pool water temperature increases.

Ensure all pool equipment is working properly. Backwash the filter system following manufacturer's directions. Adjust pH to between 7.2-7.6. In outdoor chlorine treated pools, add stabilizer to establish a minimum level of 40-50 ppm to reduce the degradative effects of sunlight upon the chlorine residual. Check for metals and if present add a stain and scale inhibitor to prevent staining of pool surface due to metal. Maintain sanitizer residual in accordance with label directions found on your sanitizer of choice. This product is effective in controlling the growth of the following types of algae: *Chlorella pyrenoidosa* (green algae), *Phormidium inundatum* (blue-green algae) and *Phormidium ritzii*. When using other products as outlined in directions for this product, always follow directions on those products.

Add this product directly into pool by pouring around entire outside perimeter of pool. Allow the filter to run for at least six (6) hours after adding algaecide. During this period, swimmers should not be allowed into the water.

1. **Dosages** – For pools, which are, free of algae or contain algae growth.

**INITIAL APPLICATION:** Backwash the filter thoroughly. Vacuum algae debris (to waste) and thoroughly brush pool. For an initial application, pour directly into pool at a rate of 19.2 ounces of this product per 15,000 gallons of water (2 ppm). More rapid distribution will be achieved by pouring a portion of the specified amount into several areas of the pool until all of the required quantity has been added. Vacuum pool after 24 hours to remove dead algae. If algae is still visible repeat dose as necessary until pool is free of visible algae. Once algae are under control, clean filter and return to normal operation. Recirculation accomplished by running the filter will assure rapid dispersion of product. *(Note to reviewer: The term "to waste" is not for use in California.)*

**MAINTENANCE:** Pour directly into pool at a rate of 1 quart per 100,000 gallons of water (0.5 ppm) every 5-7 days depending on weather and use factors. After each rain of consequence, add 1 quart per 100,000 gallons water. Even when the pool may not be in use for periods of time, algaecide additions should be made since a heavy accumulation of algae growth is difficult to remove. The appropriate amount of this product should be added by pouring a portion of the specified amount into several areas of the pool until the required quantity has

been added. Recirculation accomplished by running the filter will assure rapid dispersion of product.

2. **Reentry interval:** swimmers are allowed to re-enter the pool 15 minutes after application of the product.
3. Ensure that water quality conditions are maintained for the successful use of the product.

### VACATION TREATMENT

When you are going to be away for one week or more add 13 ounces of this product per 10,000 gallons of water for every week unattended. Pour product around the edges of the shallow end of the pool, if shock is also being applied in the deep end of pool.

### OPTIONAL INSTRUCTIONS FOR USE WITH NON-HALOGEN BASED POOL SANITIZERS

This product is formulated to complement swimming pool water being treated with the BioGuard Softswim System, Bacquacil and other non-halogen systems. When using other products as outlined in Directions For Use for this product, always follow Directions For Use of those products. This product is efficient and non-staining when used as directed. This product will not evaporate and its algae fighting abilities actually increases as the pool water temperature increases. The residual effectiveness of this product tends to stabilize the total chemical treatment system.

Ensure all pool equipment is working properly. Backwash the filter system following manufacturers directions. Adjust pH between 7.2-7.6. Check for metals and if present add stain and scale inhibitor to prevent staining of pool surface due to metals.

Add this product directly into pool by pouring around entire outside perimeter of pool. Allow the filter to run for at least six (6) hours after adding algaecide. During this period, swimmers should not be allowed into the water.

**INITIAL APPLICATION** *(Note to reviewer: The term "to waste" is not for use in California.):*

1. Backwash the filter thoroughly.
2. Vacuum algae debris (to waste) and thoroughly brush pool.
3. Add 19.2 ounces of this product per 15,000 gallons of water (2 ppm) or ratio thereof.
4. Vacuum pool after 24 hours to remove dead algae.
5. If algae is still visible repeat dose (steps 3 & 4) as necessary until pool is free of visible algae.
6. Once algae are under control, clean filter and return to normal operation.

### MAINTENANCE APPLICATION

Add 1 quart per 100,000 gallons of water (.5 ppm) every 3-5 days or as needed to maintain 0.5 ppm active.

### BOOSTER APPLICATION

Add 8 ozs. of this product in 25,000 gallons of water after a heavy or prolonged rainfall or when there is a heavy bathing load.

The above directions should be followed even when the pool is not in use.

If algae growth is noticeable, apply initial dose.

### VACATION TREATMENT

When you are going to be away for one week or more add 13 ounces of this product per 10,000 gallons of water for every week unattended. Pour product around the edges of the shallow end of the pool, if shock is also being applied in the deep end of pool.

### FOR WINTERIZING POOLS BEFORE FREEZING (not for use in California)

Test the water and adjust to the proper levels.

After pool is no longer in use, super-chlorinate, using a recommended winter shock treatment, according to label directions. Allow pump to circulate for several hours or overnight.

Add winterizing algaecide directly to pool water, walking around the pool, so that it is evenly distributed. Use at the rate of 32 ounces per 7500 gallons. Allow to circulate for a few hours.

Clean pool water line, shut down filter, drain pump, and winterize as per manufacturer's instructions. Cover with a solid cover if possible. Pools without a solid cover may need a second treatment later in the non-swimming season.

Swimming Pool Capacity Gallon of Water	Initial Treatment	Maintenance Dose Booster Dose
2,500	3.20 ounces	0.8 ounces
5,000	6.40 ounces	1.6 ounces
10,000	12.53 ounces	3.2 ounces
12,500	16.00 ounces	4.0 ounces
15,000	19.20 ounces	4.8 ounces
20,000	25.60 ounces	6.4 ounces
25,000	32.00 ounces	8.0 ounces

### TO DETERMINE POOL CAPACITY

**Rectangular Pools:** Length (times) width (times) average depth (in feet) (times) 7.5 (equals) gallons.

**Round and Oval Pools:** Long diameter (times) short diameter (times) average depth (in feet) (times) 5.9 (equals) gallons

### BOOSTER APPLICATION

Add 8 ozs. of this product in 25,000 gallons of water after a heavy or prolonged rainfall or when there is a heavy bathing load.

The above directions should be followed even when the pool is not in use.

If algae growth is noticeable, apply initial dose.

### OTHER

### DIRECTIONS FOR USE IN (OUTSIDE) SPAS/WHIRLPOOLS/HOT TUBS

("Outside" description not for use in California)

**Initial Dose:** Add 6.4 ounces of this product per 5,000 gallons of water. Initial dose is used upon filling of (outside) spa/whirlpool/hot tub bath.

**Maintenance Dose:** Add 1.6 ounces of this product per 5,000 gallons of water. Maintenance dose should be added at 3-5 day intervals. If high temperatures prevail or (outside) spa/whirlpool/hot tub bath has unusually heavy use, add maintenance dose more frequently. Drain and clean outside spa/whirlpool/hot tub bath at least once a month or as needed depending upon bather load.

### CONTROLLING ALGAE GROWTH

**Bird Baths:** Do not use with fish. This product is toxic to fish. Do not use this product when fish are present. Clean to remove algae growth prior to filling birdbath. Then spray all exposed surfaces with a solution of ½ ounce of this product per gallon of water. Allow to air dry and brush off dead algae.

(Or)

### INSTRUCTIONS FOR BIRD BATHS

This product is toxic to fish. DO NOT use this product when fish are present.

#### Initial Dose:

1. Drain Bird Bath.
2. Wipe, mop or spray all exposed surfaces using ½ ounce of this product per gallon of water. Spray device should be a mechanical coarse spray device. When applied with spray device, surfaces must be sprayed until thoroughly wetted. Do not rinse.
3. Allow to air dry and brush off dead algae. Repeat, if necessary, until no algae is visible.
4. Refill Bird Bath with fresh water.

**Maintenance Dose:** Repeat initial treatment when algae growth returns.

**Algae Control on Walkways:** For heavy infestations, spray or swab a solution of ½ ounce of this product per gallon of water. Let stand for an hour or more then brush and wash away dead algae. Soak area again with the solution. Do not rinse. Allow to (air) dry on the surface and repeat application when algae growth returns.

#### Instructions For (Containerized) Decorative Fountains And Pools

(Note to Reviewer: "Containerized" description must be used in California.)

This product is toxic to fish. DO NOT use this product when fish are present.

#### Initial Dose:

1. Remove floating algae by raking, dragging with cable or chain or any other suitable method. It is more economical to remove floating type algae (if possible) before the water is treated.
2. Add this product at any point that is convenient, such as the bowl, pool, or sump.
3. Add 32 ounces of this product to each 25,000 gallons (16 ounces per 12,500 gallons) or ratio thereof.

**Weekly Maintenance Dose:** Add 16 ounces of this product to each 50,000 gallons of water every 3-5 days or as to maintain 0.5 ppm active.

Each month drain and clean bowl. Refill with fresh water and repeat initial treatment. Draining removes airborne dirt, dust, contamination and alkali buildup.

Decorative Fountains or Pools Capacity in gallons of water	Initial Treatment	Maintenance Dose Booster Dose
25,000	32 ounces	8 ounces
12,500	16 ounces	4 ounces
6,250	8 ounces	2 ounces
3,125	4 ounces	1 ounces
1,562	2 ounces	½ ounce, (1 tbsp)
781	1 ounce	¼ ounce
390	½ ounce, (1 Tablespoon)	0.125 ounces
195	¼ ounce	0.0625 ounces