



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

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JAN 13 2014

Subject: **BUCKMAN's Liquid Shock**
EPA Registration Number: 42052-20001
Application Date: October 25, 2013
EPA Receipt Date: October 28, 2013

Dear Ms. Young:

The following label amendment, submitted in connection with registration under section 3 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended is accepted.

Proposed Label Amendment:

- Delete all references to applying the product as a fog and add the sentence "This product may be applied only by methods specified on the labeling;
- Change "oz" to "fl.oz";
- Add a graphic.

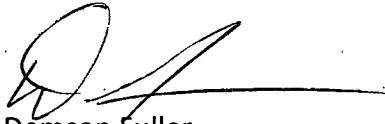
General Comments

Based on the review of the information submitted, the labeling amendment is acceptable. A stamped copy of the label is enclosed for your records. This labeling supersedes all previously accepted ones. The next label printing of this product must use this labeling unless subsequent changes have been approved. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you must distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and it's implementing regulation at 40 CFR § 152.3.

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A copy of stamped label is enclosed for your record. Should you have any questions or comments concerning this letter, please contact Adam Heyward by email at heyward.adam@epa.gov or by telephone at (703) 347-0274 during the hours of 6:00 am to 2:30 pm EST.

Sincerely,



Demson Fuller
Product Manager (32)
Regulatory Management Branch II
Antimicrobials Division (7510P)

Enclosure: Stamped labeling

Revised label (sent by email) (12-18-13) 3 & 15

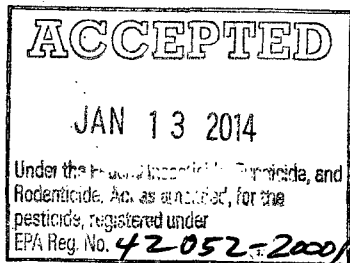
Buckman's Liquid Shock

{ABNs: Buckman's Sodium Hypochlorite Solution, Omega Pool & Spa Chemical Super Shock and Team O.D. Super Shock}

Sodium Hypochlorite Solution

{Select Marketing Claims from "Marketing Claims" section below}

Active Ingredient:		
Sodium Hypochlorite (CAS Number 7681-52-9).....	12.5%	
Other Ingredients	87.5%	
Total	100.0%	



Keep Out of Reach of Children DANGER First Aid

If in Eyes:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If on Skin or Clothing:	<ul style="list-style-type: none"> Take off contaminated clothing. Immediately rinse skin with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If Swallowed:	<ul style="list-style-type: none"> Immediately call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-451-8346 (Group Code 5942) for emergency medical treatment information.	
Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.	

(Note: The First Aid statements' grid format will be used if market label space permits; otherwise a paragraph format will be used.)

See additional precautions on side panel.

EPA Reg. No. 42052-20001

EPA Est. _____

Net Contents: _____ (____ Liters)
{1 gallon through 55 gallons}

[Ship and Store this Container in an Upright Position at all Times
Check the Container Carefully Before Placing in Your Car
Vented cap may leak causing bleaching and damage.

This is a Reusable Container and it May Leak. Buckman's is Not Responsible for Damage.]

(Side Panel)

PRECAUTIONARY STATEMENTS Hazards to Humans and Domestic Animals

DANGER: Corrosive; may cause severe eye and skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes or on clothing. Wear safety glasses or goggles and rubber gloves when handling this

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product. Thoroughly wash with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until strong odors have dissipated. Remove and wash contaminated clothing before reuse.

Environmental Hazards

{For product packaged in containers less than 5 gallons:}

This product is toxic to fish and aquatic organisms.

{For product packaged in containers 5 gallons or greater:}

This product is toxic to fish and aquatic organisms. 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 to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your state water board or regional office of the EPA.

Physical or Chemical Hazards

Strong Oxidizing Agent: Mix only with water according to label directions. Mixing this product with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter (e.g. urine, feces, etc.) will release chlorine gas which is irritating to eyes, lungs and mucous membranes.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Note: This product degrades with age. Use a chlorine test kit and increase dosage, as necessary, to obtain the required level of available chlorine. This product may be applied only by the methods specified on the labeling.

Cleaning Formulations, Bleaching & Non-Pesticide Chemical Manufacturing: This product may be used for cleaning formulations, bleaching and non-pesticide chemical manufacturing. Only specifically designed handling and dispensing equipment should be used in accordance with manufacturer's instructions and according to operating instructions or product formulations defined by the use facility.

Swimming Pool Water Disinfection

For a new pool or spring start up, superchlorinate with 52 to 104 fl oz of product for each 10,000 gallons of water to yield 5 to 10 ppm available chlorine by weight. Check the level of available chlorine with a test kit. Adjust and maintain pool water pH to between 7.2 to 7.6. Adjust and maintain the alkalinity of the pool to between 50 to 100 ppm.

To maintain the pool, add manually or by a feeder device, 11 fl oz of this product for each 10,000 gallons of water to yield an available chlorine residual between 0.6 to 1.0 ppm by weight. Stabilized pools should maintain a residual of 1.0 to 1.5 ppm available chlorine. Test the pH, available chlorine residual and alkalinity of the water frequently with appropriate test kits.

Frequency of water treatment will depend upon temperature and number of swimmers. Every 7 days, or as necessary, superchlorinate the pool with 52 to 104 fl oz of product for each 10,000 gallons of water to yield 5 to 10 ppm available chlorine by weight. Check the level of available chlorine with a test kit. Do not reenter pool until the chlorine residual is between 1.0 to 3.0 ppm. Re-entry into treated pools is prohibited above levels of 4 ppm due to risk of bodily harm. At the end of the swimming pool season or when water is to be drained from the pool, chlorine must be allowed to dissipate from treated pool water before discharge. Do not chlorinate the pool within 24 hours prior to discharge.

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Winterizing Pools

While water is still clear and clean, apply 3 fl oz of product per 1,000 gallons, while filter is running, to obtain a 3 ppm available chlorine residual, as determined by a suitable test kit. Cover pool, prepare heater, filter and heater components for winter by following manufacturers' instructions.

Spas/Hot Tubs, Immersion Tanks, Etc.

Spas/Hot Tubs: Apply 5 fl oz of product per 1,000 gallons of water to obtain a free available chlorine concentration of 5 ppm as determined by a suitable chlorine test kit. Adjust and maintain pool water pH to between 7.2 and 7.8. Some oils, lotions, fragrances, cleaners, etc. may cause foaming or cloudy water as well as reduce the efficiency of the product. To maintain the water, apply 5 fl oz of product per 1,000 gallons of water over the surface to maintain a chlorine concentration of 5 ppm. After each use, shock treat with 8 fl oz of this product per 500 gallons of water to control odor and algae. Re-entry into treated pools is prohibited above levels of 5 ppm due to risk of bodily harm. During extended periods of disuse, add 3 fl oz of product daily per 1,000 gallons of water to maintain a 3 ppm chlorine concentration.

Hubbard and Immersion Tanks: Add 5 fl oz of this product per 200 gallons of water before patient use to obtain a chlorine residual of 25 ppm as determined by a suitable test kit. Adjust and maintain the water pH to between 7.2 and 7.6. After each use drain the tank. Add 5 fl oz to a bucket of water and circulate this solution through the agitator of the tank for 15 minutes and then rinse out the solution. Thoroughly clean tank and dry with clean cloths.

Hydrotherapy Tanks: Add 1 fl oz of this product per 1,000 gallons of water to obtain a chlorine residual of 1 ppm, as determined by a suitable chlorine test kit. Pool should not be entered until the chlorine residual is below 3 ppm. Adjust and maintain the water pH to between 7.2 and 7.6. Continuously operate pool filter. Drain pool weekly and clean before refilling. Pool should not be entered until the chlorine residual is below 3 ppm due to risk of bodily harm.

Sanitization of Nonporous Food Contact Surfaces

Rinse Method: A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to ensure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 fl oz of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 2 fl oz of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, thoroughly rinse all surfaces with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. Do not rinse equipment with water after treatment and do not soak equipment overnight. Sanitizers used in automated systems may be used for general cleaning but may not be reused for sanitizing purposes.

Immersion Method: A solution of 100 ppm available chlorine may be used in the sanitizing solution if a chlorine test kit is available. Solutions containing an initial concentration of 100 ppm available chlorine must be tested and adjusted periodically to ensure that the available chlorine does not drop below 50 ppm. Prepare a 100 ppm sanitizing solution by thoroughly mixing 1 fl oz of this product with 10 gallons of water. If no test kit is available, prepare a sanitizing solution by thoroughly mixing 2 fl oz of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. If solution contains less than 50 ppm available chlorine, as determined by a suitable test kit, either discard the solution or add sufficient product to reestablish a 200 ppm residual. Do not rinse equipment with water after treatment. Sanitizers used in automated systems may be used for general cleaning but may not be reused for sanitizing purposes.

Flow/Pressure Method: Disassemble equipment and thoroughly clean after use. Assemble equipment in operating position prior to use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 2 fl oz product to 10 gallons of water. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 2 minutes to ensure contact

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with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine.

Clean-In-Place Method: Thoroughly clean equipment after use. Prepare a volume of a 200 ppm available chlorine sanitizing solution equal to 110% of volume capacity of the equipment by mixing the product in a ratio of 2 fl oz product to 10 gallons of water. Pump solution through the system until full flow is obtained at all extremities, the system is completely filled with the sanitizer and all air is removed from the system. Close drain valves and hold under pressure for at least 10 minutes to ensure contact with all internal surfaces. Remove some cleaning solution from drain valve and test with a chlorine test kit. Repeat entire cleaning/sanitizing process if effluent contains less than 50 ppm available chlorine.

Spray Method: Preclean all surfaces after use. Use a 200 ppm available chlorine solution to control bacteria, mold or fungi and a 600 ppm solution to control bacteriophage. Prepare a 200 ppm sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 2 fl oz product to 10 gallons of water. Prepare a 600 ppm solution by thoroughly mixing the product in a ratio of 6 fl oz product to 10 gallons of water. Use spray equipment that can resist hypochlorite solutions. Always empty and rinse spray equipment with potable water after use. Thoroughly spray all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces treated with a 600 ppm solution with a 200 ppm solution.

Sanitization of Porous Food Contact Surfaces

Rinse Method: Prepare a 600 ppm solution by thoroughly mixing 6 fl oz of this product with 10 gallons of water. Clean surfaces in the normal manner. Thoroughly rinse all surfaces with the 600 ppm solution, maintaining contact for at least 2 minutes. Prepare a 200 ppm sanitizing solution by thoroughly mixing 2 fl oz of this product with 10 gallons of water. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.

Immersion Method: Prepare a 600 ppm solution by thoroughly mixing, in an immersion tank, 6 fl oz of this product with 10 gallons of water. Clean equipment in the normal manner. Immerse equipment in the 600 ppm solution for at least 2 minutes. Prepare a 200 ppm sanitizing solution by thoroughly mixing 2 fl oz of this product with 10 gallons of water. Prior to using equipment, immerse all surfaces in a 200 ppm available chlorine solution. Do not rinse and do not soak equipment overnight.

Spray Method: Preclean all surfaces after use. Prepare a 600 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 6 product to 10 gallons of water. Use spray equipment that can resist hypochlorite solutions. Always empty and rinse spray equipment with potable water after use. Thoroughly spray all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours. Prior to using equipment, rinse all surfaces with a 200 ppm available chlorine solution. Prepare a 200 ppm sanitizing solution by thoroughly mixing 2 fl oz of this product with 10 gallons of water.

Sanitization of Nonporous Non-Food Contact Surfaces

Rinse Method: Prepare a sanitizing solution by thoroughly mixing 2 fl oz of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, thoroughly rinse all surfaces with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Immersion Method: Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 2 fl oz of this product with 10 gallons of water to provide approximately 200 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

Spray Method: Preclean all surfaces after use. Prepare a 200 ppm available chlorine sanitizing solution of sufficient size by thoroughly mixing the product in a ratio of 2 fl oz product to 10 gallons of water. Use spray equipment that can resist hypochlorite solutions. Prior to using equipment, thoroughly spray all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

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Disinfection of Nonporous Non-Food Contact Surfaces

Rinse Method: Prepare a disinfecting solution by thoroughly mixing 6 fl oz of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment surfaces in the normal manner. Prior to use, thoroughly rinse all surfaces with the disinfecting solution, maintaining contact with the solution for at least 10 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Immersion Method: Prepare a disinfecting solution by thoroughly mixing, in an immersion tank, 6 fl oz of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the disinfecting solution for at least 10 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

Sanitization of Porous Non-Food Contact Surfaces

Rinse Method: Prepare a sanitizing solution by thoroughly mixing 6 fl oz of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean surfaces in the normal manner. Prior to use, thoroughly rinse all surfaces with the sanitizing solution, maintaining contact with the sanitizer for at least 2 minutes. Do not rinse equipment with water after treatment and do not soak equipment overnight.

Immersion Method: Prepare a sanitizing solution by thoroughly mixing, in an immersion tank, 6 fl oz of this product with 10 gallons of water to provide approximately 600 ppm available chlorine by weight. Clean equipment in the normal manner. Prior to use, immerse equipment in the sanitizing solution for at least 2 minutes and allow the sanitizer to drain. Do not rinse equipment with water after treatment.

Spray Method: After cleaning, sanitize non-food contact surfaces with 600 ppm available chlorine by thoroughly mixing the product in a ratio of 6 fl oz of this product to 10 gallons of water. Use spray equipment that can resist hypochlorite solutions. Always empty and rinse spray equipment with potable water after use. Prior to using equipment, thoroughly spray all surfaces until wet, allowing excess sanitizer to drain. Vacate area for at least 2 hours.

Sewage and Wastewater Effluent Treatment

The disinfection of sewage effluent must be evaluated by determining the total number of coliform bacteria and/or fecal coliform bacteria, as determined by the Most Probable Number (MPN) procedure, if the chlorinated effluent has been reduced to or below the maximum permitted by the controlling regulatory jurisdiction. On the average, satisfactory disinfection of secondary wastewater effluent can be obtained when the chlorine residual is 0.5 ppm after 15 minutes contact. Although the chlorine residual is the critical factor in disinfection, the importance of correlating chlorine residual with bacterial kill must be emphasized. The MPN of the effluent, which is directly related to the water quality standards requirements, should be the final and primary standard and the chlorine residual should be considered an operating standard valid only to the extent verified by the coliform quality of the effluent.

The following are critical factors affecting wastewater disinfection:

1. **Mixing:** It is imperative that the product and the wastewater be instantaneously and completely flash mixed to assure reaction with every chemically active soluble and particulate component of the wastewater.
2. **Contacting:** Upon flash mixing, the flow through the system must be maintained.
3. **Dosage/Residual Control:** Successful disinfection is extremely dependent on response to fluctuating chlorine demand to maintain a predetermined, desirable chlorine level. Secondary effluent should contain 0.2 to 1.0 ppm chlorine residual after a 15 to 30 minutes contact time. A reasonable average of residual chlorine is 0.5 ppm after 15 minutes contact time.

Sewage and Wastewater Treatment

Effluent Slime Control: Apply a 100 to 1,000 ppm available chlorine solution at a location that will allow complete mixing. Prepare this solution by mixing 10 to 100 fl oz of this product with 100 gallons of water. Once control is evident, apply a 15 ppm available chlorine solution. Prepare this solution by mixing 3 fl oz of this product with 100 gallons of water.

Filter Beds – Slime Control: Remove filter from service, drain to a depth of 1 ft. above filter sand and add 80 fl oz of product per 20 sq. ft. evenly over the surface. Wait 30 minutes before draining water to a level that is even with the top of the filter. Wait for 4 to 6 hours before completely draining and backwashing filter.

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**Disinfection of Drinking Water
(Emergency/Public/Individual Systems)**

Public Systems: Mix a ratio of 1 fl oz of this product to 100 gallons of water. Begin feeding this solution with a hypochlorinator until a free available chlorine residual of at least 0.2 ppm and no more than 0.6 ppm is attained throughout the distribution system. Check water frequently with a chlorine test kit. Bacteriological sampling must be conducted at a frequency no less than that prescribed by the National Primary Drinking Water Regulations. Contact your local Health Department for further details.

Individual Systems – Dug Wells: Upon completion of the casing (lining) wash the interior of the casing (lining) with a 100 ppm available chlorine solution using a stiff brush. This solution can be made by thoroughly mixing 1 fl oz of this product into 10 gallons of water. After covering the well, pour the sanitizing solution into the well through both the pipesleeve opening and the pipeline. Wash the exterior of the pump cylinder also with the sanitizing solution. Start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Consult your local Health Department for further details.

Individual Water Systems – Drilled, Driven and Bored Wells: Run pump until water is as free from turbidity as possible. Pour a 100 ppm available chlorine sanitizing solution into the well. This solution can be made by thoroughly mixing 1 fl oz of this product into 10 gallons of water. Add 5 to 10 gallons of clean, chlorinated water to the well in order to force the sanitizer into the rock formation. Also wash the exterior of the pump cylinder with the sanitizing solution. Drop pipeline into well, start pump and pump water until strong odor of chlorine in water is noted. Stop pump and wait at least 24 hours. After 24 hours flush well until all traces of chlorine have been removed from the water. Deep wells with high water levels may necessitate the use of special methods for introduction of the sanitizer into the well. Consult your local Health Department for further details.

Individual Water Systems – Flowing Artesian Wells: Artesian wells generally do not require disinfection. If analyses indicate persistent contamination, disinfect the well. Consult your local Health Department for further details.

Emergency Disinfection: When boiling water for 1 minute is not practical, water can be made potable by using this product. **Prior** to addition of the sanitizer, remove all suspended material by filtration or by allowing it to settle to the bottom. Decant the **clarified**, contaminated water to a clean container and add 1 drop of this product to 20 gallons of water. Allow the treated water to stand for 30 minutes. Properly treated water **should** have a slight chlorine odor, if not, repeat dosage and allow the water to stand an additional 15 minutes. The treated water can then be made palatable by pouring it several times between clean containers.

Public Water Systems

Reservoirs – Algae Control: Hypochlorinate streams feeding the reservoir. Select suitable feeding points on each stream at least 50 yards upstream from the points of entry into the reservoir.

Mains: Thoroughly flush section to be sanitized by discharging from hydrants. Permit a water flow of at least 2.5 feet per minute to continue under pressure while injecting this product by means of a hypochlorinator. Stop water flow when a chlorine residual test of 50 ppm is obtained at the low pressure end of the new main section after a 24 hour retention time. When chlorination is completed, flush the system free of all heavily chlorinated water.

New Tanks, Basins, Etc.: Remove all physical soil from surfaces. Place 20 fl oz of this product for each 5 cubic feet of working capacity (500 ppm available chlorine). Fill to working capacity and allow to stand for at least 4 hours. Drain and flush with potable water and return to surface.

New Filter Sand: Apply 80 fl oz of this product for each 150 to 200 cubic feet of sand. The action of the product dissolving as the water passes through the bed will aid in sanitizing the new sand.

New Wells: Flush the casing with a 50 ppm available chlorine solution of water containing 5 fl oz of this product for each 100 gallons of water. After thorough mixing under agitation, pump or gravity feed the solution into the well. Allow the well to stand for several hours or overnight under chlorination. It may then be pumped until a representative raw water sample is obtained. Bacterial examination of the water will indicate whether further treatment is necessary.

Existing Equipment: Remove equipment from service, thoroughly clean surfaces of all physical soil. Sanitize by placing 21 fl oz of this product for each 5 cubic feet capacity (approximately 500 ppm available chlorine). Fill to working capacity and let stand at least 4 hours. Drain and place in service. If the previous treatment is not practical,

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surfaces may be sprayed with a solution containing 5 fl oz of this product for each 5 gallons of water (approximately 1,000 ppm available chlorine). After drying, flush with water and return to service.

Emergency Disinfection after Floods

Wells: Thoroughly flush contaminated casing with a 500 ppm available chlorine solution. Prepare this solution by mixing 5 fl oz of this product with 10 gallons of water. Backwash the well to increase yield and reduce turbidity, adding sufficient chlorinating solution to the backwash to produce a 10 ppm available chlorine residual, as determined by a chlorine test kit. After the turbidity has been reduced and the casing has been treated, add sufficient chlorinating solution to produce a 50 ppm available chlorine residual. Agitate the well water for several hours and take a representative water sample. Retreat well if water samples are biologically unacceptable.

Reservoirs: In case of contamination by overflowing streams, establish hypochlorinating stations upstream of the reservoir. Chlorinate the inlet water until the entire reservoir obtains a 0.2 ppm available chlorine residual, as determined by a suitable chlorine test kit. In case of contamination from surface drainage, apply sufficient product directly to the reservoir to obtain a 0.2 ppm available chlorine residual in all parts of the reservoir.

Basins, Tanks, Flumes, Etc.: Thoroughly clean all equipment, then apply 20 fl oz of product per 5 cu. ft. of water to obtain 500 ppm available chlorine, as determined by a suitable test kit. After 24 hours drain, flush, and return to service. If the previous method is not suitable, spray or flush the equipment with a solution containing 5 fl oz of this product for each 5 gallons of water (1,000 ppm available chlorine). Allow to stand for 2 to 4 hours, flush and return to service.

Filters: When the sand filter needs replacement, apply 80 fl oz of this product for each 150 to 200 cubic feet of sand. When the filter is severely contaminated, distribute additional product over the surface at the rate of 80 fl oz per 20 sq. ft. Water should stand at a depth of 1 foot above the surface if the filter bed for 4 to 24 hours. When filter beds can be backwashed of mud and silt, apply 80 fl oz of this product per each 50 sq. ft., allowing the water to stand at a depth of 1 foot above the filter sand. After 30 minutes, drain water to the level of the filter. After 4 to 6 hours drain, and proceed with normal backwashing.

Distribution System: Flush repaired or replaced section with water. Establish a hypochlorinating station and apply sufficient product until a consistent available chlorine residual of at least 10 ppm remains after a 24 hour retention time. Use a chlorine test kit.

Emergency Disinfection after Fires

Cross Connections or Emergency Connections: Set up hypochlorination or gravity feed equipment near the intake of the untreated water supply. Apply sufficient product to give a chlorine residual of at least 0.1 to 0.2 ppm at the point where the untreated supply enters the regular distribution system. Use a chlorine test kit.

Emergency Disinfection after Droughts

Supplementary Water Supplies: Set up gravity or mechanical hypochlorite feeders on a supplementary line to dose the water to a minimum chlorine residual of 0.2 ppm after a 20 minutes contact time. Use a chlorine test kit.

Water Shipped in by Tanks, Tank Cars, Trucks, Etc.: Thoroughly clean all containers and equipment. Spray a 500 ppm available chlorine solution and rinse with potable water after 5 minutes. This solution is made by mixing 5 fl oz of this product per 10 gallons of water. While filling the containers, dose with sufficient amounts of this product to provide at least a 0.2 ppm chlorine residual. Use a chlorine test kit.

Emergency Disinfection after Main Breaks

Mains: Before assembly of the repaired section, flush out mud and soil. Permit a water flow of at least 2.5 feet per minute to continue under pressure while injecting this product by means of a hypochlorinator. Stop water flow when a chlorine residual test of 50 ppm is obtained at the low pressure end of the new main section after a 24 hour retention time. When chlorination is completed, flush the system free of all heavily chlorinated water.

Cooling Tower/Evaporative Condenser Water

Slug Feed Method – Initial Dose: When system is noticeably fouled, apply 52 to 104 fl oz of this product per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

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Subsequent Dose: When microbial control is evident, add 11 fl oz of this product per 10,000 gallons of water in the system daily, or as needed to maintain control and keep the chlorine residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

Intermittent Feed Method – Initial Dose: When system is noticeably fouled, apply 52 to 104 fl oz of this product per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. Apply half (or 1/3, 1/4 or 1/5) of this initial dose when half (or 1/3, 1/4 or 1/5) of the water in the system has been lost by blowdown. **Subsequent Dose:** When microbial control is evident, add 11 fl oz of this product per 10,000 gallons of water in the system to obtain a 1 ppm residual. Apply half (or 1/3, 1/4 or 1/5) of this initial dose when half (or 1/3, 1/4 or 1/5) of the water in the system has been lost by blowdown. Badly fouled systems must be cleaned before treatment is begun.

Continuous Feed Method – Initial Dose: When system is noticeably fouled, apply 52 to 104 fl oz of this product per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. **Subsequent Dose:** Maintain this treatment level by starting a continuous feed of 1 fl oz of this product per 1,000 gallons of water lost by blowdown to maintain a 1 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

Briquettes or Tablets: Initially slug dose the system with 52 fl oz of this product per 10,000 gallons of water in the system. Badly fouled systems must be cleaned before treatment is begun. **Subsequent Dose:** When microbial control is evident, add 11 fl oz of this product per 10,000 gallons of water in the system daily, or as needed to maintain control and keep the chlorine residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

Laundry Sanitizers

Household Laundry Sanitizers

In Soaking Suds: Thoroughly mix 2 fl oz of this product with 10 gallons of washwater to provide 200 ppm available chlorine. Wait 5 minutes, then add soap or detergent. Immerse laundry for at least 11 minutes prior to starting the wash/rinse cycle.

In Washing Suds: Thoroughly mix 2 fl oz of this product with 10 gallons of wash water containing clothes to provide 200 ppm available chlorine. Wait 5 minutes, then add soap or detergent and start the wash/rinse cycle.

Commercial Laundry Sanitizers

Spin dry wet fabrics or clothes prior to sanitization. Thoroughly mix 2 fl oz of this product with 10 gallons of water to yield 200 ppm available chlorine. Promptly after mixing the sanitizer, add the solution into the prewash prior to washing fabrics/clothes in the regular wash cycle with a good detergent. Test the level of available chlorine, if solution has been allowed to stand. Add more of this product if the available chlorine level has dropped below 200 ppm.

Commercial Laundry Bleach

Mix 1 to 14 gallons of this product to 14 gallons of water. Introduce Sodium Hypochlorite into your normal laundry process.

Farm Premises

Remove all animals, poultry and feed from premises, vehicles and enclosures. Remove all litter and manure from floors, walls and surfaces of barns, pens, stalls, chutes and other facilities occupied or transversed by animals or poultry. Empty all troughs, racks and other feeding and watering appliances. Thoroughly clean all surfaces with soap or detergent and rinse with water. To disinfect, saturate all surfaces with a solution of at least 1,000 ppm available chlorine for a period of 10 minutes. A 1,000 ppm solution can be made by thoroughly mixing 11 fl oz of this product with 10 gallons of water. Immerse all halters, ropes and other types of equipment used in handling and restraining animals or poultry, as well as the cleaned forks, shovels and scrapers used for removing litter and manure. Ventilate buildings, cars, boats and other closed spaces. Do not house livestock or poultry or employ equipment until chlorine has been dissipated. All treated feed racks, mangers, troughs, automatic feeders, fountains and waterers must be rinsed with potable water before reuse.

Pulp and Paper Mill Process Water Systems

Slug Feed Method – Initial Dose: When system is noticeably fouled, apply 52 to 104 fl oz of this product per 10,000 gallons of water in the system to obtain from 5 to 10 ppm available chlorine. Repeat until control is achieved.

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Subsequent Dose: When microbial control is evident, add 11 fl oz of this product per 10,000 gallons of water in the system daily, or as needed to maintain control and keep the chlorine residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

Intermittent Feed Method – Initial Dose: When system is noticeably fouled, apply 52 to 104 fl oz of this product per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. Apply half (or 1/3, 1/4 or 1/5) of this initial dose when half (or 1/3, 1/4 or 1/5) of the water in the system has been lost by blowdown. **Subsequent Dose:** When microbial control is evident, add 11 fl oz of this product per 10,000 gallons of water in the system to obtain a 1 ppm residual. Apply half (or 1/3, 1/4 or 1/5) of this initial dose when half (or 1/3, 1/4 or 1/5) of the water in the system has been lost by blowdown. Badly fouled systems must be cleaned before treatment is begun.

Continuous Feed Method – Initial Dose: When system is noticeably fouled, apply 52 to 104 fl oz of this product per 10,000 gallons of water in the system to obtain 5 to 10 ppm available chlorine. **Subsequent Dose:** Maintain this treatment level by starting a continuous feed of 1 fl oz of this product per 1,000 gallons of water lost by blowdown to maintain a 1 ppm residual. Badly fouled systems must be cleaned before treatment is begun.

Briquettes or Tablets: Initially slug dose the system with 52 fl oz of this product per 10,000 gallons of water in the system. Badly fouled systems must be cleaned before treatment is begun. **Subsequent Dose:** When microbial control is evident, add 11 fl oz of this product per 10,000 gallons of water in the system daily, or as needed to maintain control and keep the chlorine residual at 1 ppm. Badly fouled systems must be cleaned before treatment is begun.

Agricultural Uses

Post-Harvest Protection: Potatoes may be sanitized after cleaning and prior to storage by spraying with a sanitizing solution at a level of 1 gallon of sanitizing solution per ton of potatoes. Thoroughly mix 1 fl oz of this product to 2 gallons of water to obtain 500 ppm available chlorine.

Disinfect leafcutting bee cells and bee boards by immersion in a solution containing 1 ppm available chlorine for 3 minutes. Allow cells to drain for 2 minutes and dry for 4 to 5 hours or until no chlorine odor can be detected. This solution is made by thoroughly mix 1 tsp. of this product to 100 gallons of water. The bee domicile is disinfected by spraying with a 0.1 ppm solution until all surfaces are thoroughly wet. Allow the domicile to dry until all chlorine odor has dissipated.

Food Egg Sanitization: Thoroughly clean all eggs. Thoroughly mix 2 fl oz of this product with 10 gallons of warm water to produce a 200 ppm available chlorine solution. The sanitizer temperature should not exceed 130°F. Spray the warm sanitizer to thoroughly wet the eggs. Allow the eggs to thoroughly dry before casing or breaking. Do not apply a potable water rinse. Do not reuse this solution to sanitize eggs.

Fruit and Vegetable Washing: Thoroughly clean all fruits and vegetables in a wash tank. Thoroughly mix 5 fl oz of this product in 200 gallons of water to make a sanitizing solution of 25 ppm available chlorine. After draining the tank, submerge fruit or vegetables for 2 minutes in a second wash tank containing the recirculating sanitizing solution. Spray rinse vegetables with the sanitizing solution prior to packaging. Rinse fruit with potable water only prior to packaging.

Aquacultural Uses

Fish Ponds: Remove fish from ponds prior to treatment. Thoroughly mix 103 fl oz of this product with 10,000 gallons of water to obtain 10 ppm available chlorine. Add more product to the water if the available chlorine level is below 1 ppm after 5 minutes. Return fish to pond **after** the available chlorine level reaches zero.

Fish Pond Equipment: Thoroughly clean all equipment prior to treatment. Thoroughly mix 2 fl oz of this product to 10 gallons of water to obtain 200 ppm available chlorine. Soak porous equipment for one hour.

Maine Lobster Ponds: Remove lobsters, seaweed etc. from ponds prior to treatment. Drain the pond. Thoroughly mix 6,200 fl oz (48.4 gallons) of this product with 10,000 gallons of water to obtain at least 600 ppm available chlorine. Apply to ensure that all barrows, gates, rock and dam are treated with product. Permit high tide to fill the pond and then close gates. Allow water to stand for 2 to 3 days until the available chlorine level reaches zero. Open gates and allow 2 tidal cycles to flush the pond before returning lobsters to pond.

Conditioning Live Oysters: Thoroughly mix 5 fl oz of this product to 10,000 gallons of water at 50 to 70°F to obtain a 0.5 ppm available chlorine. Expose oysters to this solution for at least 15 minutes, monitoring the available chlorine

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level to ensure that it does not fall below 0.05 ppm. Repeat entire process if the available chlorine level drops below 0.05 ppm or the temperature falls below 50°F.

Control of Scavengers in Fish Hatchery Ponds: Prepare a solution containing 200 ppm of available chlorine by mixing 2 fl oz of product with 10 gallons of water. Pour into drained pond potholes. Repeat if necessary. Do not put desirable fish back into refilled ponds until chlorine residual has dropped to 0 ppm, as determined by a test kit.

Sanitization of Dialysis Machines

Thoroughly flush equipment with water prior to using this product. Thoroughly mix 6 fl oz of this product with 10 gallons of water to obtain at least 600 ppm available chlorine. Immediately use this product in the hemodialysate system allowing for a minimum contact time of 15 minutes at 20°C. Drain system of the sanitizing solution and thoroughly rinse with water. Discard and **do not** reuse the spent sanitizer. Rinsate must be monitored with a suitable test kit to ensure that no available chlorine remains in the system. This product is recommended for decontaminating single and multipatient hemodialysate systems. This product has been shown to be an effective disinfectant (virucide, fungicide, bactericide, pseudomonicide) when tested by AOAC and EPA test methods. This product may not totally eliminate all vegetative microorganisms in hemodialysate delivery systems due to their construction and/or assembly, but can be relied upon to reduce the number of microorganisms to acceptable levels when used as directed. Use this product in a disinfectant program that includes bacteriological monitoring of the hemodialysate delivery system. This product is **not** recommended for use in hemodialysate or reverse osmosis (RO) membranes. Consult the guidelines for hemodialysate systems that are available from the Hepatitis Laboratories, CDC, Phoenix, AZ 85021.

This product is not to be used as a terminal sterilant/high level disinfectant on any surface or instrument that (1) is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body, or (2) contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. This product may be used to preclean or decontaminate critical or semi-critical medical devices prior to sterilization or high level disinfection.

Asphalt or Wood Roofs and Sidings

To control fungus and mildew, first remove all physical soil by brushing and hosing with clean water, and apply a 5,000 ppm available chlorine solution. Mix 5 fl oz of this product per gallon of water and brush or spray roof or siding. After 30 minutes, rinse by hosing with clean water.

Boat Bottoms

To control slime on boat bottoms, sling a plastic tarp under boat, retaining enough water to cover the fouled bottom area, but not allowing water to enter enclosed area. This envelope should contain approximately 500 gallons of water for a 14 foot boat. Add 18 fl oz of this product to this water to obtain a 35 ppm available chlorine concentration. Leave immersed for 8 to 12 hours. Repeat if necessary. Do not discharge the solution until the free chlorine level has dropped to 0 ppm, as determined by a suitable chlorine test kit.

Artificial Sand Beaches

To sanitize the sand, spray at frequent intervals a 500 ppm available chlorine solution containing 5 fl oz of this product per 10 gallons of water. Small areas may be sprinkled with a watering can.

Toilet Bowl Sanitizer

[These products are marketed as individual packages for placement in the toilet. Therefore use directions are not appropriate. Claims are limited to sanitization. No claims for disinfection are permitted.]

(For product in household/residential-use containers:)

Storage and Disposal

Do not contaminate food or feed by storage, disposal or cleaning of equipment.

Pesticide Storage: To avoid deterioration, store this product in a cool dry area, away from direct sunlight and heat. In case of spill, flood area with large quantities of water. **Container Disposal:** Non-refillable container; do not reuse or refill this container. **If empty:** Do not reuse this container; place in trash or offer for recycling, if available. **If partly filled:** Call your local solid waste agency for disposal instructions. Never place undiluted unused product down any indoor or outdoor drain.

(For product not in household/residential-use containers (refillable container):)

Storage and Disposal

Do not contaminate food or feed by storage, disposal or cleaning of equipment.

Pesticide Storage: To avoid deterioration, store this product in a cool dry area, away from direct sunlight and heat. In case of spill, flood area with large quantities of water. **Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. **Container Management:** Refillable container. Refill this container with only sodium hypochlorite. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller; cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times, then offer for recycling, if available, or reconditioning, if appropriate; or puncture and dispose of in a sanitary landfill; or by incineration.

(For product not in household/residential-use containers greater than 5 gallons (non-refillable container):)

Storage and Disposal

Do not contaminate food or feed by storage, disposal or cleaning of equipment.

Pesticide Storage: To avoid deterioration, store this product in a cool dry area, away from direct sunlight and heat. In case of spill, flood area with large quantities of water. **Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. **Container Management:** Non-refillable container; do not reuse or refill this container. Offer for recycling, if available or reconditioning, if appropriate. Triple rinse (or equivalent) container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

(For product not in household/residential-use containers less than or equal to 5 gallons (non-refillable container):)

Storage and Disposal

Do not contaminate food or feed by storage, disposal or cleaning of equipment.

Pesticide Storage: To avoid deterioration, store this product in a cool dry area, away from direct sunlight and heat. In case of spill, flood area with large quantities of water. **Pesticide Disposal:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. **Container Management:** Non-refillable container; do not reuse or refill this container. Offer for recycling, if available or reconditioning, if appropriate. Triple rinse (or equivalent) container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

(Per PR Notice 2007-4 the batch code/lot number will appear on the label or container.)

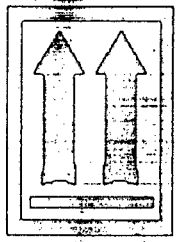
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Manufactured by [for]:
Buckman's, Inc.
105 Airport Road
Pottstown, PA 19464-3438



UN 1791
HYPOCHLORITE SOLUTION

RQ
PG III



CAS Number: 7681-52-9



{Marketing Claims:}
{Select from the following claims/use sites based on market label Directions for Use:}

For use in commercial food processing/preparation plants, commercial laundries, dairies, dialysis machines, drinking water (emergency/public/individual systems), farm premises, fish hatchery ponds, fish ponds, food egg processing plants, food service establishments, fruit processing plants, hot tubs, immersion tanks, Jacuzzi tubs, Maine lobster ponds, meat processing plants, poultry processing plants, residential structures, restaurants, spas, swimming pools, taverns, vegetable processing plants and water treatment industries.

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For agricultural uses, aquacultural uses, artificial sand beaches, asphalt/wood roofs and sidings, boat bottoms, cooling tower/evaporative condenser water, disinfection of drinking water (emergency/public/individual systems) after droughts, fires, floods and main breaks, disinfection of nonporous non-food contact surfaces, farm premises, hot tubs, immersion tanks, laundry sanitizers (commercial laundry bleach, commercial laundry sanitizers, household laundry sanitizers), paper mill/pulp process water systems, sanitization of dialysis machines, sanitization of nonporous food contact surfaces, sanitization of nonporous non-food contact surfaces, sanitization of porous food contact surfaces, sanitization of porous non-food contact surfaces, sewage/wastewater effluent treatment, sewage/wastewater treatment, spas, swimming pool water disinfection and winterizing [swimming] pools.

Use 1 Gallon per 12,000 Gallons of [Swimming] Pool Water

{End of Marketing Claims}

[] Denotes alternate/optional language

{ } Denotes language that does not appear on the market labeling

