

SPA DECONTAMINATION

INTRODUCTION

This procedure is intended to describe how to decontaminate a spa infested with both bacteria and bacterial by-products. Some signs of possible infestation include: slime formation, cloudy water, musty odors, fecal contamination, bather rash (a rash may take up to 7 days to develop), or flu-like symptoms suspected to have originated from spa use. If the user/operator of the spa suspects infestation, this procedure should be followed as a precaution. If the spa water has become infested with bacteria, the plumbing system and filter may be harboring excessive amounts of bacteria and bacterial by-products. Replacing the spa water is a good practice—guidelines on regular water replacement intervals are attached in the Appendix. However, water replacement will not completely eliminate the bacteria from a severely infested spa. The spa and its circulation systems and air lines should be thoroughly decontaminated.

This procedure should be used to decontaminate an infested spa. It may also be used as a general maintenance step when a spa is drained. Three main steps are involved: 1) draining and decontamination; 2) water replacement and treatment; and 3) verification. The verification step is strongly advised for cases where fouling has occurred, but is less crucial when this decontamination procedure is part of a frequent, general water replacement routine.

STEP 1: DECONTAMINATION OF INFESTED SPA

A. Cartridge Filters: Remove the filter and either clean or replace it. To clean a cartridge, first use a filter cleaner as per label directions. After rins-

ing the cartridge, completely submerge the cartridge in a 1/10 dilution of sodium hypochlorite (liquid bleach) from one to four hours. Inspect and clean the filter housing interior. Install filter grids after spa decontamination is complete.

- B. Raise the water level in the spa to 1/2 inch above the high water mark.
- C. Add at least 100 ppm chlorine to the spa.
- D. If possible, cover the spa.
- E. Circulate the water at a maximum rate for 30-45 minutes ensuring the jets are on maximum.
- F. For spas treated with a polyhexamethylene biguanide (Biguanide, PHMB) sanitizer, drain and refill the spa prior to adding any chlorine.
- G. While the water is circulating, turn the aerator (blower) on and off every five minutes. Some spas that have air injector (venturi) systems may

require the pump to be turned on and off every five minutes. This will help ensure that air lines are disinfected.

- H. Stop the circulation by turning the jets and aerator off.
- I. While the spa is draining, rinse the sides several times.
- J. Clean the spa with a surface cleaner, and rinse off surfaces to remove cleaner.
- K. Drain the spa to remove any excess water and cleaner.

STEP 2. WATER REPLACEMENT & TREATMENT

- A. Refill the spa with water; replace the filter with a cleaned, sanitized, or new filter cartridge, fresh sand or DE.
- B. Balance the water according to ANSI/NSPI standards.
- C. At this point, the operator may choose to resume normal start-up and maintenance routines according to health-department regulations or ANSI/NSPI standards. Alternatively, a verification step may be carried out to ensure that no excessive sanitizer demand remains.

STEP 3: VERIFICATION

- A. To verify decontamination, shock treat the spa with 10 ppm of chlorine. Allow the spa to circulate overnight or for a period of 8-12 hours, then check the sanitizer level in the spa. If no free chlorine residual is present, excessive demand

Chlorine Source	Mass Required to Yield 100 ppm Chlorine in a Spa	
	Ounces per 100 gallons	Ounces per 500 gallons
Calcium Hypochlorite (65% min.)	2.2	11
Lithium Hypochlorite (35%)	3.8	19
Sodium Dichloroisocyanurate (56%)	2.5	12.5
Sodium Hypochlorite (12%)	15 (fl. oz.)	75 (fl. oz.)
Sodium Hypochlorite (5.25%)	35 (fl. oz.)	170 fl. oz. (1.3 gal)

may still exist. Repeat the Decontamination Procedure from the first step. Prevent chlorine losses due to sunshine degradation by keeping spa covered and/or carrying out verification step overnight. If two attempts at decontamination fail to produce a chlorine residual, contact your chemical supplier for advise.

- B. If residual free chlorine sanitizer is found in step 13, proceed with routine maintenance of the spa according to local health department requirements or ANSI/NSPI standards.
- C. If after two successive attempts to decontaminate the spa, evidence of contamination persists, a serious problem may exist. Do not resume use of the spa until the problem has been resolved by a qualified professional.

Warning: The information contained herein has been assembled by members of the NSPI Chemical Treatment and Process Committee from sources believed to be reliable and accurate, and reflects current knowledge as of the time of publication (6/98). This information is intended to be used in conjunction with the manufacturers' instructions for the specific spa or hot tub, the applicable ANSI/NSPI standard which applied to the spa or hot tub, and standard or specific chemical operational parameters. The information contained herein is for the use of trained and experienced pool and spa service technicians and is not intended to be a comprehensive description of all possible means of dealing with bacterial contamination, or other spa or hot tub problems. Diagnosis of the cause of contamination is also outside the scope of this document, but should be addressed to prevent recurrence.

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NOTE: Always follow label directions and manufacturer's instructions for each product used. Conditions may vary from pool to pool. Ultra Modern Pool & Patio does not assume any responsibility or liability for the results that may be obtained through utilization of this or any other program, procedure or product.

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