

# Answers to Frequently Asked Questions About Whirlpool Tub Cleaning & Disinfection

**Question #1:** When should whirlpool tubs be cleaned and disinfected?

**Answer:** The three situations in which whirlpool tubs should be cleaned and disinfected are as follows:

- At the start of each day (prior to the first use)

**Why?** A whirlpool tub and its plumbing system provides a moist environment, a possible organic food supply, and a favorable temperature, conditions which may allow for microbial growth overnight. Disinfection prior to use will reduce the potential for microbial contamination.

- After each use (prior to the next use)

**Why?** To remove microbial contamination from the prior patient.

- At the end of the day (if it was not cleaned after the last use)

**Why?** To remove organic material and reduce microbial contamination. Removing organic materials and microorganisms will reduce the opportunities for microbes to colonize in hard to clean and disinfect areas of the tub.

**Question #2:** What should be used for cleaning and disinfecting?

**Answer:** Classic Whirlpool Disinfectant Cleaner

**Why?** Classic Whirlpool Disinfectant Cleaner provides both cleaning and disinfecting in one step. All products in the Classic line have been thoroughly tested for compatibility with all internal components of all major bathing equipment manufacturers. Central Solutions, Inc. warrants that all its bathing liquids are compatible with Arjo-Century and all other manufacturers bathing equipment and liquid dispensing systems.

**Question #3:** How much Classic Whirlpool Disinfectant Cleaner should be used?

**Answer:** Classic Whirlpool Disinfectant Cleaner is a hospital grade disinfectant cleaner tested at a use-dilution of two (2) ounces per gallon of water (1:64) in the presence of 5% serum (to simulate organic soil load) and 400 ppm water hardness (calculated at CaCO<sub>3</sub>) at 20 degrees C (68 degrees F).

**Question #4:** If I doubled the amount of Classic Disinfectant, can I reduce contact time?

**Answer:** No. It is not acceptable to use an EPA registered disinfectant in a manner inconsistent with its labeling. See the next question.

**Question #5:** How long does it take Classic Disinfectant to work?

**Answer:** A ten minute contact time is required for disinfection

**Why?** Using an antimicrobial product in its proper concentration for a time less than 10 minutes but for at least 30 seconds changes its efficacy from a disinfectant level to a sanitizer level of kill.

A sanitizer is an antimicrobial that kills 99.999% of the test organisms in 30 seconds. Classic Whirlpool Disinfectant Cleaner has been tested as a sanitizer at a use-dilution of two (2) ounces per gallon of water (1:64) with a contact time of 30 seconds. The effective concentration and exposure time of a sanitizer is generally accepted as needing to be convenient for the intended use. If the disinfectant cleaner can be left in contact with surfaces for a full ten (10) minutes, disinfection (100% kill of organisms except spores) will be achieved. When 10 minutes cannot be achieved due to time restraints, a 30 second contact time will sanitize the surfaces. Sanitization implies a reduction in pathogenic microorganisms to a safe level (a 99.999% reduction). *Note: It is prudent to disinfect (10 minutes) a whirlpool tub after use by a patient with a known infection, whenever there is enough time, or when required by local or state regulations.*

**Question #6:** What microorganisms is Classic Whirlpool Disinfectant Cleaner effective against?

**Answer:** Gram Negative Bacteria as demonstrated by testing against:

- Pseudomonas aeruginosa
- Salmonella enterica
- Salmonella typhi Escherichia coli
- Klebsiella pneumoniae Enterobacter aerogenes
- Shigella dysenteriae Brevibacterium ammoniagenes
- Serratia marcescens

• Gram Positive Bacteria as demonstrated by testing against: \*Staphylococcus aureus Streptococcus pyogenes Streptococcus faecalis

• Antibiotic Resistant Bacteria as demonstrated by testing against: MRSA (Methicillin Resistant Staphylococcus aureus) VRE (Vancomycin Resistant Enterococcus)

• Fungi as demonstrated by testing against: \*Trichophyton mentagrophytes Virucidal against: HIV-1 (the AIDS virus) \*These microorganisms are "indicator" (prototype) organisms used to make broad spectrum efficacy claims.

*Efficacy against these organisms presumes effectiveness against other gram positive bacteria, gram negative bacteria, and other eucaryotic microorganisms such as yeast and molds.*

**Question #7:** Is Classic Whirlpool Disinfectant Cleaner compatible with my particular whirlpool tub?

**Answer:** All Classic products, including Classic Whirlpool Disinfectant Cleaner, are guaranteed compatible with all brands of whirlpool bathing units. Central Solutions has formulated whirlpool bathing liquids for twenty-five years, and will back up this guarantee warranty in writing upon request.

**Question #8:** I've been told by a tub manufacturer that if I don't use their particular bathing liquids, the tub warranty will be invalidated. Is this true?

**Answer:** Again, all Classic products are guaranteed compatible with all brands of whirlpool bathing units. If our liquid damages your tub, we will have your tub fixed. If it cannot be fixed, Central Solutions will purchase a new tub for your facility. In the twenty-five years of making this offer, not one tub has been damaged by a Classic product!

**Question #9:** Is there a need to use a Tuberculocidal disinfectant in whirlpool tubs?

**Answer:** No. Quaternary Ammonium disinfectants are appropriate for use in whirlpool tubs.

**Why?** It is not reasonable to anticipate that a drained whirlpool tub would be significantly contaminated with regulated body fluids that would present a hazard to employees cleaning and disinfecting the bathing unit. Therefore, there would not be an OSHA requirement for the use of an "appropriate disinfectant" (phenolic, sterilant, or HBV & HIV efficacy claims).

**Question #10:** What does the FDA (Food and Drug Administration) have to do with disinfectants?

**Answer:** Classic Whirlpool Cleaner has been granted a 510(k) by the FDA for use on medical devices. Disinfectants used on medical devices such as exam tables or chairs, sitz or whirlpool baths, stretchers, patient lifts & scales, walkers, canes, crutches, monitors, stands, carts, cabinets, wheelchairs, patient beds, lights, x-ray equipment, therapy tables, and mattress covers is considered an accessory to a medical device and thus a medical device itself. The Federal Food, Drug, and Cosmetic Act (FD&C Act) gives the FDA authority to regulate such medical devices. Manufacturers of disinfectants labeled for use on medical devices or medical device surfaces are required to produce the disinfectant under Current Good Manufacturing Practices (CGMPs), and are open to inspection by the FDA.

**Question #11:** Should whirlpool tubs be cultured?

**Answer:** Not necessarily.

**Why?** The Center for Disease Control and Prevention (CDC) recommends that routine culturing of environmental surfaces not be done. Microbial sampling is only indicated during investigation of infection problems if environmental reservoirs are implicated epidemiologically in the disease transmission.

**Question #12:** Do positive cultures indicate the disinfectant is ineffective?

**Answer:** Not necessarily.

**Why?** The efficacy of a disinfectant cleaner is best determined by controlled laboratory test methods as defined by the EPA (Environmental Protection Agency). Environmental culturing is most applicable for determining the effectiveness of cleaning procedures and methods. The effectiveness of disinfectants is dependent upon the product making contact with the microorganisms and then absorption onto the microbes surface or getting penetration into the cell for the kill. The concentration of the disinfectant, the type of disinfectant, the exposure time, the type of microorganism, temperature, water hardness, and the presence of organic material all have a significant role in the effectiveness.

**Question #13:** What should be considered when culturing?

**Answer:** Always clean and disinfect just prior to culturing.

**Why?** Surfaces become contaminated with airborne bacteria soon after cleaning and disinfection. Culturing just after the 10 minute disinfection contact time will give the best indication of the effectiveness of the cleaning and disinfection process/method.

- Do not rinse the tub with clear water prior to culturing.

**Why?** The culture can be no better than the microbial quality of the water used to rinse. It is not uncommon for source water to have bacteria counts measurable in swab rinse or pressure contact culture methods. Again, culturing just after cleaning and disinfection will give the best indication of the cleaning and disinfection process/method.

- Consider culturing the tub water instead of tub surfaces

**Why?** The tub filled with clean water is what the patient actually comes in contact with. A small sampling from the tub after filling and recirculation can be compared with a sample of the raw water to see if there is a significant difference.

- Cultures from the drain and outlet openings are likely to be positive.

**Why?** Because these openings are not normally cleaned. Bacteria such as *Pseudomonas* colonize areas that are moist and soiled. Drain lines, and to some extent recirculation plumbing, develop a film (mineral deposits, detergent residue, body oils, debrided skin) that harbors microorganisms. The tub drain is normally closed during the cleaning

process and only opened to drain the tub. Inlets and outlets to the pump are small openings and difficult to clean without the proper tools (brush). These openings should be cleaned daily with a brush sized for the opening.

**Question #14:** Should Classic Whirlpool Disinfectant Cleaner be sprayed?

**Answer:** Application of Classic Whirlpool Disinfectant Cleaner by spraying is acceptable with precautions and attention to proper tub cleaning procedures.

**Explanation:** Often times, tub rooms have high humidity levels which combined with spraying of cleaners and disinfectants may make breathing of sprays and mists irritating to staff. The use of coarse, wet sprays may be acceptable depending upon your tub room environment. Proper tub cleaning requires exposing all surfaces of the tub, including the pipes and pump system to the disinfectant cleaner. Spraying is not a suitable method of exposure for the pipes and pump. Filling the tub to a recirculation level is necessary. Spraying may be used for exposed surfaces, although the use of a brush or swab and the water in the tub for recirculation, is the recommended method. Spraying should be limited and reserved for the surfaces and items, and equipment that cannot be cleaned with the recirculating disinfectant cleaning solution

**Question #15:** If my tub has a UV light, do I need to disinfect?

**Answer:** Yes

**Why?** The following comments discuss some of the concerns about the use of UV for disinfection:

1. The bacterial sensitivity to UV is influenced by pH of the solution, what stage of growth the bacteria are in (most susceptible in the logarithmic stage [growth phase]), and by substances that absorb the UV. Turbidity caused by particulate matter, organic compounds, iron salts and minerals, and colored compounds all prevent the penetration of or absorb the UV energy. The literature indicates that it is misleading to generalize about the efficacy of UV, because a large number of microorganisms may be killed while others may survive.

2. The germicidal lamps used to generate the UV radiation normally have a "most effective range", and should be operated within this range. Lamps will lose effectiveness over time and should be monitored and replaced when a certain predetermined percent of loss is reached. The number of starts and stops will influence the life of the lamps.

3. A frequently documented problem with UV disinfection is the REACTIVATION of microorganisms that have been exposed to UV radiation. Fungi, bacteria, and viruses, and nucleic acids inactivated by UV may be photoreactivated by visible light. There are several mechanisms by which damage is repaired. As the literature describes it, "the operational concept of the killed state does not necessarily represent irreversible destruction of viability". This concern would raise issues when trying to meet EPA standards for making claims for disinfection or sanitization. Therefore, from a health perspective, the use of UV radiation for the destruction of microorganisms during the bathing process appears to be a reasonable attempt to prevent cross-contamination of organisms from infected sites.

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**Question #16:** If I use Chloramine-T in my tub, do I need to disinfect?

**Answer:** Yes

**Why?** "Chloramine-T" is used as an antiseptic and makes claims of "reducing the levels of microorganisms" during the bath. To extend this application beyond the bath in order to conclude that terminal disinfection or sanitization is not required does not seem reasonable. The whirlpool tub should be cleaned and disinfected after each use.

**Question #17:** How should Whirlpool Tub products be dispensed?

**Answer:** By measuring or automatic metering

1. Disinfectant Cleaners and Bath Oils can be measured using measuring cup or any container marked with measuring calibration marks.

2. Shampoos are typically poured from the container or pumped onto a cloth or into the hand using a one gallon dispensing pump.

3. Disinfectant Cleaners, Shampoos, and Bath Oils can be metered into the tub by an automatic purporting device provided by the tub manufacturer as part of the tub's construction. NOTE: Disinfectants must be diluted accurately, and in accordance with the label instructions, therefore a method for - and a periodic calibration of - the automatic metering device is a likely requirement of your State Health Department.

**Consideration:** Products that are metered are normally dispensed from a product container such as a Bag-In-Box or some sort of plastic bottle. Bag-In-Box products are normally replaced when empty. There may be a desire to re-fill (or *Top Off*, see below) some plastic containers from either a bulk container or from a size bottle that may not fit into your tub. Topping Off is the practice of adding more product to, or refilling a container of, cleaning chemicals, disinfectant solutions, hand care products, or other solutions. "**Topping Off**" becomes a concern when solutions become contaminated because containers are not rinsed or cleaned between refills. This practice creates a reservoir for potentially resistant microorganisms.

**Question #18:** What should be considered when cleaning a whirlpool tub?

**Answer:** The following items include some of the considerations:

1. Follow the manufacturers tub cleaning instructions
2. Follow the disinfectant cleaners instructions for use and dilution
3. Drain water from the tub and rinse with the shower spray.
4. Close the drain and fill the tub with hot water (hot water enhances disinfection) to lowest level it will recirculate.
5. Note: The amount of water needs to be determined in order to add the right amount of disinfectant cleaner. It is recommended that the tub be filled to the proper level from a measuring container such as a one gallon bottle or five gallon pail. Document the amount of water and the level in your PROCEDURE for tub cleaning.
6. Measure and add the disinfectant cleaner, then turn on the recirculation pump for 2 minutes.
7. Use a long handle brush to clean the inner surfaces of the tub.
8. Clean the exterior of the tub with a clean cloth and the diluted disinfectant solution.
9. Clean other patient care equipment with a clean cloth and the diluted disinfectant solution.
10. After the tub has been in contact with the disinfectant cleaner for 10 minutes, drain the tub and use the shower spray to "backflush" water through the outlet until it runs clear from the inlet (lower part of the tub).
11. Spray the tub with clear water Allow to air dry or refill with clean water for next use.