

# CAT Controller Courier # 33

June 2009

## Chlorine/Bromine FIRST

In the past few months, because of the recent growing trends in alternate sanitation, UV, Ozone, Hydrogen Peroxide, etc., pool operators are starting to get the wrong impression and thinking that they no longer need a chlorine residual in their pool. From my knowledge and with the exception of very few Municipal Governments in the United States; UV, Ozone, and Hydrogen Peroxide cannot be used as "stand alone" sanitation systems in any commercial pool and/or spa. Almost all Municipal Health Codes mandate that a commercial pool and spa must contain a residual of chlorine or bromine for the purpose of sanitation. Now the next question is WHY? This brings us to how a pool filtration/circulation system, UV system, and Ozone systems operate.

The main reason that most commercial pools are mandated in the United States to run their circulation systems 24 hours a day 7 days a week is because of filtration cycles (6 Hour Turn Over Rates are standard for most commercial pools in the United States). It takes the average commercial pool 24 hours to filter about 98% of its water. See Chart Below:

First 6 Hours Time	Second 6 Hours	Third 6 Hours	Fourth 6 Hours = 24 Hour Run
58% Unfiltered 42% Filtered	16% Unfiltered 84% Filtered	5% Unfiltered 95% Filtered	2% Unfiltered 98% Filtered

With that being said if you have a UV system installed it would take the same amount of time to get the same amount of water to pass over the UV light. In conclusion if you do not have a chlorine or bromine residual in the pool and there is an FMR (Fecal Matter Release) by someone who has an illness, it is very possible that that illness will stay in the pool and not pass through the UV light; therefore multiplying, making for a greater problem, and potentially infecting other bathers. If you keep a chlorine or bromine residual in the pool it is more likely that the bacteria will be disinfected (killed) and then oxidized (burned up), before the infected water even has a chance to be filtered and treated by the UV.

I don't want to give the wrong impression about supplementary sanitation systems. I greatly support the use of UV and Ozone as secondary systems in conjunction with chlorine or bromine. Some bacteria may take several hours to be killed by chlorine or bromine and also combined chlorines can truly effect the environment in which we swim; UV and Ozone help defend against both of these factors tremendously.

The bottom line here is Chlorine or Bromine first - then the use of secondary sanitation systems. If you have any questions please feel free to contact me at the information listed below.

Written By:

M. Troy McGinty  
CAT Controllers, Inc.

### **Difficulty Controlling pH and Alkalinity in a Chlorine Spa?**

As we all have experienced trying to maintain a balanced spa can be quite frustrating. Spas are typically smaller bodies of water that are more easily and more dramatically affected by bathers. Spas are also warmer bodies of water which inhibits chlorine effectiveness slightly as well. Keeping these two factors in mind what can we do to try and maintain a more balanced spa?

First things first when using muriatic acid to control your pH, DILUTE IT! Remember what I said earlier about how dramatically bathers can affect this small body of water, well so can chemicals. The same amount of acid added into a 100,000 gallon pool that you add into a 5,000 gallon spa is going to effect the spa much more than the pool, this is basic common sense. So how can we lessen the effect? Dilute your acid; try using a 5 to 1 dilution for your acid which can help with two things. It will not affect your pH as much and it won't take the alkalinity out of the water as severely as straight acid normally would. You are combating two problems with this solution.

Secondly, you are going to be using a higher concentration of chlorine in these bodies of water but receiving a very similar ORP to a larger, cooler, pool with less chlorine residual. That being said you will need to remember you will end up with higher combined chlorine faster, higher TDS faster, and higher pH faster (depending on the type of chlorine you're using). What is the easiest solution to this...?  
DILUTION...!

Dilution seems to be the answer to this problem. Spas are smaller bodies of water that by dumping and filling with fresh water we can solve a lot of problems more quickly than if it was a larger body of water.

Conclusion - Dilution is the solution! Dilute your acid and dilute your water in a spa more frequently than you normally would your pool. I hope these tips help you in your battle to maintain a balanced spa.

Written By:

Troy McGinty  
CAT Controllers, Inc.

## **Ask CAT A Question?**

When asking a question please be sure to copy and paste the question into your email, provide all of your contact information and any other information that may be relevant? CAT hopes we can help?

*How often and how should I clean my sensors?*

*What is my price on a CAT 2000 Professional Package?*

*What is a water quality management program?*

*Is Bromine better than Chlorine in my spa?*

*What are the benefits of a CAT 4000 with communications?*

*How do I become a CAT Controller Dealer?*

*How do I activate my CAT 4000 or CAT 5000 Controller?*

*I have my own question?*

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## **ORDER YOUR COMPLETE SYSTEM**

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I hope all of you enjoyed the June CAT Controller Courier. CAT Controllers is very excited about the 2009 summer season. CAT Customers are doing a great job selling, installing, and troubleshooting controllers. We here at CAT really appreciate all of your loyalty and support. I also want to thank those of you for contributing to and reading the CAT Controller Courier. Please send me any questions, concerns, and/or ideas you may have for next month's newsletter.

Sincerely,

Troy McGinty  
CAT Controllers, Inc.