

Alden Leeds, Inc.

SPA MANAGEMENT & TESTING

One person in a 250 gallon spa has the same effect on water as 100 people in an average in ground pool. Add to this a typical temperature difference of +20F and aerated conditions and you have a large sanitizer demand in an effort to maintain 3-5 ppm.

Heat causes people to perspire, and perspiration contains salts and nitrogen wastes. An actively perspiring person can lose up to 8 oz. (? lb.) in one hour. The pH of perspiration is usually 5.0-5.5 and contains the following:

PERSPIRATION (ppm / quart) TOTAL = 1960 ppm			
Ammonia	342 ppm	Creatinine	86 ppm
Urea	1280 ppm	Amino Acids	80 ppm

If two people enter a 250 gallon spa for 30 min. each, they may lose 8 oz. (1/4 quart) of perspiration that contains 1960 ppm of waste. Once diluted in the spa, this equals 0.49 ppm of nitrogen waste and will consume 5 ppm of free chlorine! With this large consumption factor in mind it's easy to see why many spas fail to keep up with sanitizer demand.

Also consider the role that heat and aeration play in reducing the sanitizer level on their own. Bromination rather than chlorination, and maintaining a higher pH (7.5-7.8), if possible, will help reduce sanitizer consumption by creating a more stable water condition that minimizes "gassing" into the atmosphere.

Keeping the filter clean is another must for proper spa management. Hair, flaked skin, oils and lotions are unnecessary burdens on sanitizers that can easily be handled by physical means. A simple cartridge filter rinse in warm water will do fine in many cases. If detailed cleaning is needed, be sure to use filter cleaners that are formulated with minimal levels of surfactants that can place extra burdens on the sanitizers.

The role of pH in spa management is vital to protect heaters from either corroding or scaling. Depending on the hardness of the water, pH must be adjusted between 7.2 and 7.8 with frequent checks. The accelerated use of sanitizers will increase the tendency of the pH to drift in the direction of the pH of the sanitizer. Because sanitizer levels run higher in a spa than in a pool, it is not unusual to have a "spike" reading of 6 ppm of bromine or higher. High bromine or chlorine readings affect the pH test as shown below.

6 ppm Sanitizer	Tested pH	Actual pH	Color Indicated
Bromine	8.4	7.6	Purple-blue
Chlorine	7.0	7.6	Faint yellow

If you encounter these conditions, redo the pH test by first neutralizing the water sample. Brominated water may require two or three extra drops of neutralizer.