

Your Guide to a Safe and Clean Pool

As a pool owner or operator, it is your responsibility to properly maintain your swimming pool or spa. You must keep the water clear, disinfected to control bacteria, viruses, and algae; and non-irritating to swimmers. In order for you to obtain water of this quality, it is important that you are aware of the basic concepts of pool maintenance.

During regular inspections conducted by Santa Barbara County Environmental Health Specialists, we receive a number of questions regarding the required maintenance and operation of public swimming pools and spas. The following information should help to clarify what we are looking for when we visit your pool.

Water Quality

Chlorine Residual

Chlorine or other disinfectants are used in swimming pools for two reasons: (1) to eliminate bacteria, some viruses, and algae; and (2) to chemically destroy, through oxidation, materials such as dirt and cosmetics. When one adds chlorine to pool water, a portion of the chlorine will be consumed in the process of destroying bacteria, algae and other oxidizable materials. The chlorine that remains is called the chlorine residual and can be either in a free or combined form. Pools must be disinfected by means of an automatic disinfectant feeder. For pools using chlorine disinfectant feeders, a free chlorine residual of at least 1.0 ppm must be maintained at all times. If you use chlorine stabilizer tablets, they usually contain some form of cyanuric acid as a chlorine and a free chlorine residual at least 1.5 ppm must be maintained.

pH Balance

The pH test reveals the degree of acidity or alkalinity of your pool water. The pH for pools and spas must be maintained between 7.2 and 8.0. A pH of 7.0 is the neutral point; above 7.0 alkalinity increases; below 7 acidity increases. Problems can be associated with either a low or a high pH, and both the swimmer as well as

the pool can be affected. When the pH falls below 7.0, it can cause irritation to the eyes and mucous membranes of swimmers. The plaster finish and any metal parts in the pool's recirculating system may become damaged due to the corrosive action of the acidic water. At a pH over 8.2, cloudy water or scale may occur. Muriatic Acid has a pH of about 0. Pure water is 7 (neutral). Weak lye solutions have a pH of 13-14.

Strongly Acidic			Neutral					Strongly Alkaline						
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

A pH of 7.4 or 7.5 is considered ideal.

Daily Records

Daily records must be maintained by the pool operator to record the chlorine and pH levels and any chemicals added or maintenance performed. Your Environmental Health Specialist can provide you with a standard form for your daily record keeping. If you do not have this form, contact one of our offices listed in this pamphlet.

If cyanuric acid by itself or in a combined form with the disinfectant is added to a pool, the cyanuric acid concentration must be measured and recorded at least once per month. The ideal range for cyanuric acid is 40-70ppm and must not exceed 100ppm because excessive cyanuric acid restricts the effectiveness of chlorine disinfection.

Safety

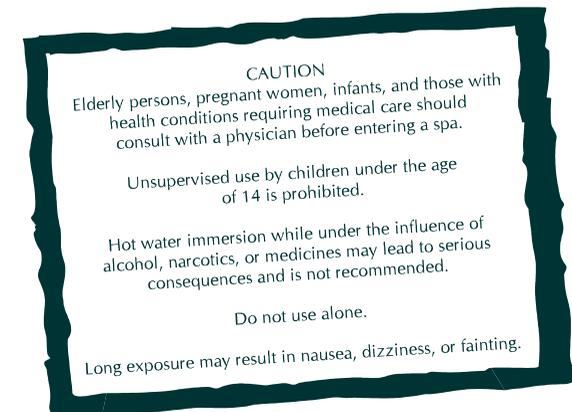
The following is a list of safety equipment which must be kept readily accessible to pool users at the pool facility:

- ◆ Body hook on a 12' rescue pole.
- ◆ Life ring with an attached throw rope long enough to span the maximum width of the pool.
- ◆ The bottom drain and recirculation outlets must be covered with grates or other protective devices that are removable **only** with tools. Recirculation outlets for a spa must be the type that cannot be completely covered by any part of the body or must be installed in duplicate to prevent a suction hazard.
- ◆ Spa water temperature must not exceed 104°F.

The following signs are required to be clearly posted so that they are visible from the pool or spa (letters must be at least 4" high):

- ◆ "No Lifeguard on Duty. Children under the age of 14 should not use pool without an adult in attendance" when qualified lifeguards are not provided.
- ◆ Diagrammatic illustration of artificial respiration.
- ◆ Emergency telephone number – **911**.
- ◆ Maximum occupant load. This is based on the water surface area. Swimming Pools = one bather per 20 sq. ft., Spa Pools = one bather per 10 sq. ft.
- ◆ "No Diving Allowed" for pools having a maximum depth of less than six feet.
- ◆ "No Use of Pool Allowed after Dark" for pools lacking adequate underwater light fixtures and adequate deck lighting.

In addition to the above signs, spas are required to provide a sign that states "Spa Emergency Shut off Switch" and the following caution sign:



Fencing & Gates

In order to restrict access to the pool by small children, an enclosure must be provided around the pool area. The pool enclosure must meet the following criteria:

Size - The enclosure (fence or wall) must be at least four feet in height on all sides with maximum openings of four inches between rungs, slats, or holes. Openings at the bottom of the enclosure may not exceed two inches.

Gates/Doors - Gates and doors leading into the pool area must open outward, be self-closing and self-latching. The latching device must be at least 3½ feet (42") above the deck.

Design and Construction - The pool enclosure must be designed and constructed so that it cannot be readily climbed by small children. Chain link fencing may only be used if the openings are not greater than 1¾ inches measured horizontally. Special care should also be taken to ensure that climbable bushes and trees are not planted next to the enclosure.

Equipment

Water is continuously recirculated and disinfected by removing it from the pool, filtering it, automatically feeding a disinfectant, and returning it to the pool. Each of the following devices is an integral part of a recirculation system.

- ◆ Influent and effluent gauges must be provided for the filter system and should be at the same height. Filters are to be backwashed when the pressure difference between the two gauges is over 10 psi.
- ◆ A flowmeter must be installed on the recirculation system to measure the required flow of water in gallons per minute as water is returned to the pool. This must be regularly maintained so as to be accurate to ± 10%.
- ◆ An automatic disinfectant feeder must be provided and tablets or liquid maintained in the feeder for a continuous feed of disinfectant to the pool or spa.
- ◆ DPD test kits must be available for daily readings of chlorine and pH. DPD is a reliable test that differentiates

between free and combined chlorine. The OTO test kits are not approved and may not be used.

Inspection

Your environmental health specialist is authorized to enter all parts of the premises of a public swimming pool and spa to determine the pool or spa's sanitary condition. For locked pool and spa areas, keys should be readily available to your environmental health specialist.

Closure

The Health & Safety Code states that a swimming pool or spa may be closed for one or more of the following reasons:

1. No free chlorine residual (0 ppm).
2. Bottom drain cover missing or not secured.
3. Water is not clear (the main drain is not clearly visible from the deck).
4. Failure to provide required safety equipment or signs.
5. Lack of circulation of the water.
6. Failure of the water to meet bacteriological standards as determined by analysis of two consecutive samples.
7. Presence of unhealthful, unsafe, or unsanitary conditions.

If you have any questions about these or any other requirements related to your pool or spa, please call your district specialist.

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How to Operate a Clean and Safe Pool



Santa Barbara
County
Environmental Health
Services