



Health and Human Services Department Placer County Environmental Health

STANDARDS FOR CHEMICAL LEVELS IN SWIMMING POOL/SPA/WADING POOL/SPRAY GROUNDS

Chemicals	Minimum	Maximum	Ideal
Free Chlorine (FC) residual	1.0 ppm (<i>spa/wading/spray 3.0 ppm</i>)	10.0 ppm	2.0 – 3.0 ppm
FC w/ CYA (stabilizer or conditioner)	2.0 ppm (<i>spa/wading/spray 3.0 ppm</i>)	10.0 ppm	2.5 – 3.5 ppm
Bromine*	2.0 ppm (<i>spa/wading/spray 4.0 ppm</i>)	None	4.5 – 6.5 ppm
pH	7.2	7.8	7.4 – 7.6
Cyanuric Acid (CYA)	0	100 ppm	30-50 ppm
Spa temperature	none	104 °F	

REMINDERS:

- **Testing frequency** for the pools and spa are dictated by health codes and health laws. The operator **must meet or exceed the minimum daily requirements** (*except complexes with fewer than 25 units may test at least 2 times per week with no more than 4 days between readings*) for testing based on conditions of use and environment. *Excessive or heavy user loads may require testing every hour or two.*
- **Disinfectant** (*sanitizer levels*), **pH and Spa temperature must be tested minimum once daily** since these tests have a direct bearing on the safety of the patrons and facility.
- **Samples for testing should be taken from a depth of at least 18 inches below** the water surface and from a location well away from any return inlets.
- When adding reagent drops to the sample, **hold the dropper bottle straight up in vertical position to ensure the correct drop size** and to get accurate test results.
- The reagents and the sample water must be **properly mixed** (at least 40X) **to reach the end point. If using titration method, the sample must be swirled after each drop of titrant; the end point** (*color change*) must be permanent and not fade back toward the previous color.
- When using color block comparator always **hold the comparator at eye level to the northern horizon** to properly match the sample color to the standard. **Do not test with fluorescent light as the source.**
- Test kits must be protected from heat and light and exposure to chemical fumes and debris. (*Colored reagents or those stored in brown bottles have shorter shelf life*). **Discard and replace reagents if there is any change in color, appearance of suspended material or with expired dates.**
- Care should be taken in the handling and storage of all swimming pool chemicals. These **chemicals should be stored separately from one another** and should never be mixed in order to prevent harmful chemical reactions from occurring (*pool chlorine and pool acid if mixed together will produce chlorine gas, which if inhaled could be fatal*) **Never mix Calcium hypochlorite with Trichlor, it will cause an explosion.**
- Remember to always **follow manufacturer's instructions** when using any chemicals. **Always add chemicals to water.**

NOTE: If you want balanced pool water, other chemicals such as Total Alkalinity (80-180 ppm), Calcium Hardness (150-1000 ppm), and Total Dissolved Solids (300-1500 ppm) must be checked as well and maintained within the recommended range. If you have an ORP Meter maintain reading @ 720 to 750 mV (ideal), or follow manufacturer's instructions.

*for testing Bromine using K-2009 FAS-DPD use free chlorine results then multiply by 2.25 correction factor to get the Bromine reading. Always check instruction manual for other test kits as some can take the Bromine reading directly.