

APPENDIX B

ARKANSAS POOL CHEMICAL OPERATIONAL PARAMETERS

Below are operation parameters for the proper chemical treatment and maintenance of pool/spa water. Chemical treatment alone will not produce sanitary pool water. A filtration system in proper operational condition is also required to attain sparkling clear, polished, sanitary water.

***Mandatory tests for compliance**

Disinfectant Levels* Free chlorine, ppm	<i>Min</i>	<i>Ideal</i>	<i>Max</i>	Comments	Testing Interval
Pool	1.0	1.0 – 3.0	5.0	Hot weather/heavy use may require operation at or near maximum level. Regular Superchlorination is recommended.	Daily
Spa	2.0	3.0 – 5.0	5.0		
When stabilizer is used	1.5		5.0		
Disinfectant Levels* Combined chlorine, ppm**	<i>Min</i>	<i>Ideal</i>	<i>Max</i>	Comments	Testing Interval
Pool	None	None	0.2	High combined results in reduced chemical efficacy. Take remedial action to establish break point chlorination.	Daily
Spa	None	None	0.2	Other signs of combined chlorine: Sharp chlorine odor, Eye irritation, Algae growth	
Disinfectant Levels* Bromine, ppm	<i>Min</i>	<i>Ideal</i>	<i>Max</i>	Comments	Testing Interval
Pool	2.25	2.25 – 4.0	4.0		Daily
Spa	2.25	3.0 – 5.0	5.0		
Disinfectant Levels* Iodine, ppm	<i>Min</i>	<i>Ideal</i>	<i>Max</i>	Comments	
	---	---	---	Levels not established Note: Local Health Department officials must be consulted before use.	
Temperature			<i>Max</i>	Comments	Check
Spa			104°F	For 15 minute intervals on a timer	Daily
Oxidation Reduction Potential	<i>Min</i>	<i>Ideal</i>	<i>Max</i>	Comments	Testing Interval
ORP	650	---	---	When chlorine or bromine is used as the primary disinfectant, ORP can be used as a supplemental measurement of proper sanitizer activity. The use of ORP testing does not eliminate or supersede the need for testing the sanitizer level with standard test kits. An ORP reading may be affected by a number of factors including (1) pH, (2) probe film, (3) cyanuric acid, and (4) other. Follow manufacturer's recommendations.	Daily

NOTE: The number of “Daily” testing intervals will vary based on type of facility, hours of operation, & bather load.

APPENDIX B (CONTINUED)

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Chemical Values	Min	Ideal	Max	Comments	Testing Interval
pH*	7.0	7.4 – 7.6	7.8	If pH is: Too high: Low chlorine efficiency, Scale formation, Cloudy water, Eye discomfort Too low: Rapid dissipation of disinfectant, Plaster and concrete etching, Eye discomfort, Corrosion of metals, Vinyl liner damage	Daily
Total Alkalinity* (buffering) as CaCO ₃ chlorite (ppm)	60	80 – 100 calcium, lithium, sodium hypochlorites 100-120 sodium dichlor, trichlor, chlorine gas, bromine compounds	180	If total alkalinity is: Too Low: pH bounce, Corrosion tendency Too High: Cloudy water, Increased scaling potential, and pH tends to be too high	Weekly
Cyanuric acid* (ppm)	None	25-40	90	If stabilizer is: Too Low: Chlorine residual rapidly destroyed by sunlight Too High: May reduce chlorine efficacy Note: Stabilizer is not needed in indoor or brominated pools.	Weekly
Total dissolved solids	300	1000-2000	3000	These values are offered as ppm guidelines rather than absolute values to indicate concern for accumulation of impurities in the course of operation. Excessively high TDS may lead to hazy water, corrosion of fixtures, etc., and can be reduced by partial draining with addition of fresh water. High initial TDS may indicate poor water quality due to corrosive mineral salts, humus, or organic matter. Consult local water authority.	Monthly or Suspect
Calcium hardness (ppm)	150	200-400	500-1000	Operation of pools at maximum hardness will depend on alkalinity (buffering) requirements of the sanitizer used. Minimum alkalinity and lower pH must be used with maximum hardness (Over 50ppm)	Monthly or Suspect
Heavy metals				If heavy metals, such as copper, iron, manganese, are present: Staining may occur, Water may discolor, Chlorine dissipates rapidly, Filter may plug, May indicate pH too low, corrosion, etc.	Suspect

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