

TESTING FREQUENCY

Chlorine/Bromine: Each day within one-half hour of opening and at intervals not to exceed four hours (two hours for spas) thereafter until the pool closes. The swimming pool water shall be testing manually twice a day.

OPR/HHR: A controller readout used in lieu of manual testing shall be a numerical analog or digital display (indicator lights not acceptable) with an OPR scale with a range of at least 600 to 900 mV with increments of 20mV or less. The operator may make visual readings of OPR in lieu of manual testing, but the swimming pool water shall be tested manually for disinfectant residual at least twice a day. The operator shall specify in the swimming pool records which results are from the manual test. Both ORP and disinfectant residual shall be recorded when the manual testing is done.

pH: Each day within one-half hour of opening and at intervals not to exceed four hours (two hours for spas) thereafter until the pool closes.

A controller readout used in lieu of manual testing shall be numerical analog or digital display (indicator lights not acceptable) with pH range at least 7.0 to 8.0 with increments of 0.2 or less over the full range. The operator may make visual readings of the pH in lieu of manual testing, but the swimming pool water shall be tested manually for pH at least twice a day. The operator shall specify in the swimming pool records which results are from the manual test.

Combined Chlorine:

Pools – At least once a week

Spas – One a day

Alkalinity:

Pools – At least once a week

Spas - At least once a week and each time the spa is refilled

Calcium Hardness:

Pools – at least once a month

Spas – Each time the spa is refilled

Cyanuric Acid:

Pools – (where stabilized chlorine is used) At least once a week

Spas – (where stabilized chlorine is used) Once a day

Bacteria Samples:

Pools – Total Coliform once a month

Spas – Total Coliform and Pseudomonas once a month

Water Temperature:

Pools – No recommendation

Spas – Whenever a manual test is performed

WATER BALANCE RANGES

CHLORINE / ORP LEVELS

ppm: is the measure of quality of chlorine in the water

Minimum 1.0 ppm

Maximum 8.0 ppm

ORP/HRR: is the measure of the quality of the chlorine in the water

Minimum 650 mV

Maximum 880 mV

pH

pH: is the measure of acid vs. base

Acceptable Range: 7.2 ppm – 7.8 ppm

Ideal Range: 7.4 ppm – 7.6 ppm

TOTAL ALKALINITY

Alkalinity: the measure of resistance to change of pH

Acceptable Range: 60 ppm – 150 ppm

Ideal Range: 80 ppm – 120 ppm

CALCIUM HARDNESS

Calcium Hardness: The measure of Calcium Ions in the water

Acceptable Range: 150 ppm – 1,000 ppm

Ideal Range: 400 ppm – 600+ ppm

TEMPERATURE

Pools: competition 78 – 80 degrees Fahrenheit

Recreational 82 – 84 degrees Fahrenheit

Special population 86 – 88 degrees Fahrenheit

Spas: Not to exceed 104 degrees Fahrenheit

TOTAL DISSOLVED SOLIDS

TDS: The measure of all minerals dissolved in the water

BASE DEMAND TREATMENT TABLE
To Increase pH Using Soda Ash (Sodium Carbonate, 100%)

Volume of Water - U.S. Gallons/Liters							
Drops of pH 6.5-8.5 - Reagent C	400 gallons / 2,000 liters	1,000 gallons / 4,000 liters	5,000 gallons / 20,000 liters	10,000 gallons / 40,000 liters	20,000 gallons / 80,000 liters	50,000 gallons / 100,000 liters	100,000 gallons / 400,000 liters
1 drop	0.21 oz / 7.68 g	0.51 oz / 15.4 g	2.56 oz / 76.8 g	5.13 oz / 154 g	10.3 oz / 307 g	1.60 lb / 384 g	3.20 lb / 1.54 kg
2 drops	0.41 oz / 15.4 g	1.03 oz / 30.7 g	5.13 oz / 154 g	10.3 oz / 307 g	1.28 lb / 614 g	3.20 lb / 768 g	6.41 lb / 3.07 kg
3 drops	0.62 oz / 23.0 g	1.54 oz / 46.1 g	7.69 oz / 230 g	15.4 oz / 461 g	1.92 lb / 922 g	4.81 lb / 1.15 kg	9.61 lb / 4.61 kg
4 drops	0.82 oz / 30.7 g	2.05 oz / 61.4 g	10.3 oz / 307 g	1.28 lb / 614 g	2.50 lb / 1.23 kg	6.41 lb / 1.54 kg	12.8 lb / 6.14 kg
5 drops	1.03 oz / 38.4 g	2.56 oz / 76.8 g	12.8 oz / 384 g	1.60 lb / 768 g	3.20 lb / 1.54 kg	8.01 lb / 1.92 kg	16.0 lb / 7.68 kg
6 drops	1.23 oz / 46.1 g	3.08 oz / 92.2 g	15.4 oz / 461 g	1.92 lb / 922 g	3.85 lb / 1.84 kg	9.61 lb / 2.30 kg	19.2 lb / 9.22 kg
7 drops	1.44 oz / 53.8 g	3.59 oz / 108 g	1.12 lb / 538 g	2.24 lb / 1.08 kg	4.49 lb / 2.15 kg	11.2 lb / 2.69 kg	22.4 lb / 10.8 kg
8 drops	1.64 oz / 61.4 g	4.10 oz / 123 g	1.28 lb / 614 g	2.56 lb / 1.23 kg	5.13 lb / 2.46 kg	12.8 lb / 3.07 kg	25.6 lb / 12.3 kg
9 drops	1.85 oz / 69.1 g	4.61 oz / 138 g	1.44 lb / 691 g	2.88 lb / 1.38 kg	5.77 lb / 2.76 kg	14.4 lb / 3.46 kg	28.8 lb / 13.8 kg
10 drops	2.05 oz / 76.8 g	5.13 oz / 154 g	1.60 lb / 768 g	3.20 lb / 1.54 kg	6.40 lb / 3.07 kg	16.0 lb / 3.84 kg	32.0 lb / 15.4 kg

ACID DEMAND TREATMENT TABLE
To Decrease pH Using Muriatic Acid (20° Baumé / 31.45% HCl)

Volume of Water - U.S. Gallons/Liters							
Drops of pH 6.5-8.5 - Reagent B	400 gallons / 2,000 liters	1,000 gallons / 4,000 liters	5,000 gallons / 20,000 liters	10,000 gallons / 40,000 liters	20,000 gallons / 80,000 liters	50,000 gallons / 100,000 liters	100,000 gallons / 400,000 liters
1 drop	0.37 fl oz / 14.3 mL	0.92 fl oz / 28.6 mL	4.58 fl oz / 143 mL	9.16 fl oz / 286 mL	1.15 pt / 573 mL	1.43 qt / 716 mL	2.86 qt / 2.86 L
2 drops	0.73 fl oz / 28.6 mL	1.83 fl oz / 57.3 mL	9.16 fl oz / 286 mL	1.15 pt / 573 mL	1.15 qt / 1.15 L	2.86 qt / 1.43 L	1.43 gal / 5.74 L
3 drops	1.10 fl oz / 43.0 mL	2.75 fl oz / 85.9 mL	13.7 fl oz / 430 mL	1.72 pt / 859 mL	1.72 qt / 1.72 L	1.07 gal / 215 L	2.15 gal / 8.59 L
4 drops	1.47 fl oz / 57.3 mL	3.67 fl oz / 115 mL	1.15 pt / 573 mL	1.15 qt / 1.15 L	2.29 qt / 2.29 L	1.43 gal / 2.86 L	2.86 gal / 11.5 L
5 drops	1.83 fl oz / 71.6 mL	4.58 fl oz / 143 mL	1.43 pt / 716 mL	1.43 qt / 1.43 L	2.86 qt / 2.86 L	1.79 gal / 3.58 L	3.58 gal / 14.3 L
6 drops	2.20 fl oz / 85.9 mL	5.50 fl oz / 172 mL	1.72 pt / 859 mL	1.72 qt / 1.72 L	3.44 qt / 3.44 L	2.15 gal / 4.30 L	4.30 gal / 17.2 L
7 drops	2.57 fl oz / 100 mL	6.41 fl oz / 200 mL	1.00 qt / 1.00 L	2.00 qt / 2.00 L	1.00 gal / 4.01 L	2.51 gal / 5.01 L	5.01 gal / 20.0 L
8 drops	2.93 fl oz / 115 mL	7.33 fl oz / 229 mL	1.15 qt / 1.15 L	2.29 qt / 2.29 L	1.15 gal / 4.58 L	2.86 gal / 5.73 L	5.73 gal / 22.9 L
9 drops	3.30 fl oz / 129 mL	8.25 fl oz / 258 mL	1.29 qt / 1.29 L	2.58 qt / 2.58 L	1.29 gal / 5.15 L	3.22 gal / 6.44 L	6.44 gal / 25.8 L
10 drops	3.67 fl oz / 143 mL	9.16 fl oz / 286 mL	1.43 qt / 1.43 L	2.86 qt / 2.86 L	1.43 gal / 5.73 L	3.58 gal / 7.16 L	7.16 gal / 28.6 L