TEST DESCRIPTION & RECOMMENDED RANGES

REMEMBER !

1 – Keep test kit out of reach of children
2 – Read precautions on all labels.
3 – Store test kit in a cool, dark place.
4 – Replace solutions once each year.
5 – Do not dispose of solutions in pool or spa.
6 – Rinse cells before and after each test.
7 – Obtain samples 45cm/18" below water surface.
8 – Hold bottle vertically when dispensing.

CHLORINE DOSAGE CHART

Volume of Water (gallon)	Volume of Water (liter)	TO RAISE CHLORINE 1 PPM USING CHLORINE COMPOUND* PERCENT AVAILABLE CHLORINE 5%	10%	12%	60%	65%	75%
250	1000	0.64 fl oz / 20 ml	0.32 fl oz / 10 ml	0.27 fl oz / 8.44 ml	0.06 oz / 1.8 g	0.05 oz / 1.5 g	0.04 oz / 1.2 g
400	1500	1.02 fl oz / 30 ml	0.51 fl oz / 15 ml	0.43 fl oz / 12.6 ml	0.09 oz / 2.5 g	0.08 oz / 2.2 g	0.07 oz / 2.0 g
1,000	5,000	2.56 fl oz / 100 ml	1.28 fl oz / 50 ml	1.07 fl oz / 42 ml	0.22 oz / 8.2 g	0.21 oz / 7.9 g	0.18 oz / 6.7 g
5,000	20,000	12.8 fl oz / 400 ml	6.40 fl oz / 200 ml	5.33 fl oz / 167 ml	1.11 oz / 33 g	1.03 oz / 31 g	0.89 oz / 27 g
10,000	40,000	1.60 pts / 800 ml	12.8 fl oz / 400 ml	10.7 fl oz / 334 ml	2.23 oz / 67 g	2.05 oz / 61 g	1.78 oz / 53 g
15,000	60,000	1.20 qts / 1.2 L	1.20 pts / 600 ml	1.00 pts / 500 ml	3.34 oz / 100 g	3.08 oz / 92 g	2.67 oz / 80 g
20,000	75,000	1.60 pts / 1.5 L	1.60 pts / 750 ml	1.33 pts / 623 ml	4.45 oz / 125 g	4.11 oz / 115 g	3.56 oz / 100 g

pH DOSAGE CHART

Volume of Water (gallon)	Volume of Water (liter)	TO RAISE pH TO 7.5 USING SODA ASH (SODIUM CARBONATE 100%)** FROM 7.2	FROM 6.8	FROM 6.5	TO LOWER pH USING DRY ACID (SODIUM BISULFATE 93.2%)* Drops of acid demand reagent 1	2	3	TO LOWER pH USING MURIATIC ACID (20% BAUME / 31.4% HCl) Drops of acid demand reagent 1	2	3
250	1000	0.3 oz / 9 g	0.9 oz / 27 g	1.2 oz / 36 g	0.31 oz / 9.3 g	0.62 oz / 18.6 g	0.92 oz / 28 g	0.23 fl oz / 7 ml	0.46 fl oz / 14 ml	0.69 fl oz / 22 ml
400	1500	0.5 oz / 14 g	1.5 oz / 42 g	2.0 oz / 56 g	0.49 oz / 13.8 g	0.99 oz / 28 g	1.48 oz / 42 g	0.37 fl oz / 11 ml	0.73 fl oz / 21 ml	1.10 fl oz / 32 ml
1,000	5,000	1.2 oz / 45 g	3.7 oz / 139 g	4.9 oz / 184 g	1.23 oz / 46 g	2.46 oz / 92 g	3.70 oz / 139 g	0.92 fl oz / 36 ml	1.83 fl oz / 71 ml	2.75 fl oz / 107 ml
5,000	20,000	6.2 oz / 186 g	1.2 lbs / 575 g	1.5 lbs / 719 g	6.16 oz / 185 g	12.3 oz / 369 g	1.16 lbs / 556 g	4.58 fl oz / 143 ml	9.16 fl oz / 286 ml	13.7 fl oz / 428 ml
10,000	40,000	12.3 oz / 369 g	2.3 lbs / 1.10 kg	3.1 lbs / 1.49 kg	12.3 oz / 369 g	1.54 lbs / 738 g	2.31 lbs / 1.11 kg	9.16 fl oz / 286 ml	1.15 pts / 575 ml	1.72 pts / 860 ml
15,000	60,000	1.2 lbs / 575 g	3.5 lbs / 1.68 kg	4.6 lbs / 2.21 kg	1.16 lbs / 556 g	2.31 lbs / 1.11 kg	3.47 lbs / 1.66 kg	13.7 fl oz / 428 ml	1.72 pts / 860 ml	1.29 qts / 1.29 L
20,000	75,000	1.5 lbs / 674 g	4.6 lbs / 2.07 kg	6.2 lbs / 2.79 kg	1.54 lbs / 692 g	3.08 lbs / 1.38 kg	4.62lbs / 2.08 kg	1.15 pts / 539 ml	1.15 qts / 1.08 L	1.72 qts / 1.61 L

ALKALINITY DOSAGE CHART

Volume of Water (gallon)	Volume of Water (liter)	TO RAISE ALKALINITY USING SODA ASH (SODIUM CARBONATE 100%) Desired change in ppm 10 ppm	TO LOWER ALKALINITY USING MURIATIC ACID (20% BAUME / 31.4% HCl) Desired change in ppm 10 ppm	TO LOWER ALKALINITY USING DRY ACID (SODIUM BISULFATE 93.2%)* Desired change in ppm 10 ppm
250	1000	0.56 oz / 17 g	0.63 oz / 20 ml	0.86 oz / 26 g
400	1500	0.90 oz / 25 g	1.02 fl oz / 30 ml	1.37 oz / 38 g
1,000	5,000	2.24 oz / 84 g	2.56 fl oz / 100 ml	3.44 oz / 129 g
5,000	20,000	11.2 oz / 336 g	12.8 fl oz / 400 ml	1.07 lbs / 513 g
10,000	40,000	1.40 lbs / 671 g	1.60 pts / 800 ml	2.15 lbs / 1.03 kg
15,000	60,000	2.10 lbs / 1.01 kg	1.20 qts / 1.20 L	3.22 lbs / 1.54 kg
20,000	75,000	2.80 lbs / 1.26 kg	1.60 qts / 1.50 L	4.30 lbs / 1.93 kg

CHLORINE & BROMINE

Effective use of chlorine is largely dependant on pH. At high ph (>7.6), chlorine's ability to disinfect is significantly reduced. But at a lower pH (7.2 to 7.6), chlorine's disinfecting ability is enhanced. Therefore, at lower pH levels, you get more disinfection for your money.

Remember:
- Keep the pH at 7.6 or below.
- Keep the CHLORINE level between 1.0 and 3.0 ppm.
- Superchlorinate to increase FREE CHLORINE.

* Chlorine products contain different amounts of available chlorine. Adjust treatment amounts accordingly.

pH

To LOWER pH to desired value, add either dry acid (sodium bisulfate) or muriatic acid according to chart.

To RAISE pH to 7.5, add soda ash (sodium carbonate) according to chart.

Note:
An adjustment in pH can change total alkalinity. Recheck total alkalinity after pH adjustments.

* Sodium bisulfate percentage may vary. Adjust treatment amounts accordingly.
** Dosage obtained experimentally using pool water with the following values: Total alkalinity – 100ppm CaCO3
Calcium hardness – 200ppm CaCO3
Total dissolved solids – 500
Temperature – 75˚F/24˚C
Dosage can vary if actual values differ from experimental values.

TOTAL ALKALINITY

To LOWER total alkalinity, add either dry acid (sodium bisulfate) or muriatic acid according to chart.

To RAISE total alkalinity, add baking soda (sodium bicarbonate) according to chart.

Note:
An adjustment in total alkalinity can change pH. Recheck pH after total alkalinity adjustments.

• Sodium bisulfate percentage may vary. Adjust treatments amounts accordingly.

TROUBLE PREVENTION CHART

TROUBLE	SYMPTOM	CAUSE	SOLUTION
SCALE FORMATION	Scale on pool walls & fixtures. Frequent in new in ground pools.	High pH	Lower pH to 7.2 – 7.6 with sodium bisulfate or muriatic acid.
		Excess alkalinity	Lower alkalinity to 80-120 with sodium bisulfate or muriatic acid.
CORROSION OF METAL PARTS	Metal fixtures in contact with pool water corrode. Rust and copper stains. Colored water.	Low pH	Raise pH to 7.2-7.6 with soda ash.
		Low alkalinity	Raise alkalinity to 80-120 with sodium bicarbonate.
EXCESS AVAILABLE CHLORINE	Bleached hair and bathing suit. Eye irritation.	Excess chlorine	Add sodium bisulfate or sodium thiosulfate.
		Old reagents. Inaccurate test	Replace reagents annually. Check test kit result carefully.
CHLORINE ODOR	Eye irritation. Water has foul odor. Complaints of too much chlorine in the water.	Not enough free chlorine.	Adjust pH to 7.2-7.6. Superchlorinate.
EYE & SKIN IRRITATION	Red eyes and itchy skin.	Chloramines. Not enough free chlorine. Improper pH.	Adjust pH to 7.2-7.6. Superchlorinate.
CLOUDY WATER	Hazy, cloudy water. No sparkle.	Early algae growth.	Superchlorinate
		Poor pool filtration.	Check filter operation.
		High pH.	Lower pH to 7.2-7.6 with sodium bisulfate or muriatic acid.
		High alkalinity.	Lower alkalinity to 80-120 with sodium bisulfate or muriatic acid.
COLORED WATER	Brown.	Iron.	Superchlorinate
	Black.	Manganese.	Floc pool or sand filter with alum (not for D.E. or cartridge filter).
	Blue-Green.	Copper.	See solution for corrosion of metal parts
	Green.	Algae.	Adjust pH to 7.2-7.6. Superchlorinate.
ALGAE	*Green algae:* Green water, slippery pool surfaces and cloudy water *Black algae:* Spotty patches on pool sides.	Not enough chlorine.	Adjust pH to 7.2-7.6. Superchlorinate. ***Concrete:*** Brush sides & bottom with stainless steel brush. ***Vinyl liner:*** Use soft nylon brush. Use algaecides.