

Water Chemistry, One Page

Chapters 5 to 14, condensed. The sheet for the chemical store.

FREE PRINTABLE
CPOPRO.COM

1 · THE NUMBERS

READING	TARGET	TEST	CHAPTER
Free chlorine	3 ppm	daily commercial	11
Combined chlorine	under 0.2 ppm	daily commercial	5
pH	7.4 – 7.6	daily commercial	6
Total alkalinity	80 – 120 ppm	weekly	7
Calcium hardness	200 – 400 ppm plaster	monthly	8
Cyanuric acid	25 ppm	weekly	9
Dissolved solids	under 1,500 over fill	monthly	5
Temperature	record every time	every test	10

2 · THE ORDER OF CORRECTION

never vary it

1. Alkalinity	80 – 120 ppm	nothing holds without it
2. pH	7.4 – 7.6	it will often walk into range on its own
3. Hardness	200 – 400 ppm	one way only, so go slowly
4. Index	–0.3 to +0.3	confirm the whole set together

3 · DOSING

ounces per 10,000 gal per ppm

$$\text{OUNCES} = (\text{GALLONS} \div 10,000) \times \text{PPM CHANGE} \times \text{FACTOR}$$

Cal-hypo 65%	2.05	Sodium bicarbonate (TA)	2.23
Cal-hypo 73%	1.82	Calcium chloride 77%	1.92
Trichlor 90%	1.48	Calcium chloride 94%	1.57
Dichlor 56%	2.38	Stabilizer 100%	1.33
Lithium hypo 35%	3.80	Liquid chlorine 12.5%	10.2 fl oz

Any product not listed: divide 1.33 by the strength on the label. pH has no formula: 8 fl oz of 31.45% muriatic acid per 10,000 gal moves it about 0.2 down, and 6 oz of soda ash about 0.2 up.

4 · SATURATION INDEX

run it weekly

$$\text{pH} + \text{TEMP FACTOR} + \text{HARDNESS FACTOR} + \text{ALKALINITY FACTOR} - 12.1$$

Below –0.3	Corrosive. The water is taking calcium out of plaster, grout, tile bedding and the heat exchanger.
–0.3 to +0.3	Satisfied. Log it and run it again next week.
Above +0.3	Scaling. It forms on the hottest surface first, which is the inside of the heat exchanger.

Use 12.2 above 1,000 ppm of dissolved solids, and a further tenth per thousand. Correct with alkalinity and hardness, never with pH.

5 · NEVER

no exceptions

- Never open a container without goggles and gloves on.
- Never add water to chemicals. Chemicals go into water, slowly.
- Never mix two chlorine products, or reuse a feeder for a different one.
- Never store acid and chlorine together, or one above the other.
- Never add a full dose. Half, one turnover, retest, then the rest.
- Never top up a pool from a water softener.