Aquatic Consulting Services

1220 Rosecrans Street #915 · San Diego · California · 92106

Pool Tip #50: Pool Conversion Factors

Linear Weights & Measures

1 inch	1/12 foot, 0.0833, 2.54 centimeters
12 inches	1 foot, 0.3048 meters
3 feet	1 yard, 0.9144 meters
5,280 feet	1 statute mile, 1.609 kilometers
6,076 feet	1 nautical mile, 1.852 kilometers
1 meter	39.37 inches, 3.28 feet, 1.094 yards

Area and Cubic Weights & Measures

1 square foot	144 square inches
1 square yard	9 square feet, 0.836 square meters
1 square meter	1.196 square yards
1 cubic foot	1,728 cubic inches
1 cubic yard	27 cubic feet, 0.765 cubic meters
1 cubic meter	1.308 cubic yards
1 acre foot	325,851 gallons

Water

1 cubic foot of water	7.48 gallons, 28.32 liters
1 gallon of water	8.33 pounds
1 cubic foot of water	62.4 pounds
1 ppm	8.3 pounds/million gallons of water
1 ppm	1 mg/liter
100 microns	Approx. size of a grain of salt, 0.1 millimeters, 0.0039 inches

Liquid Weights & Measures

1 cup	8 fluid ounces
1 pint	16 fluid ounces, 0.473 liters

1 quart	32 fluid ounces, 0.946 liters
1 gallon	128 ounces, 16 cups, 8 pints, 4 quarts, 3.785 liters
1 pound	16 ounces
1 liter	1.057 liquid quarts
1 tablespoon	3 teaspoons, 1/2 fluid ounce
1 gram	0.03527 ounces

Temperature Conversion

Celsius to Fahrenheit	$F° = 9/5 \, C° + 32$
Fahrenheit to Celsius	$C° = 5/9 \, (F° - 32)$

Hydraulic Conversions

1 psi	2.31 feet of head
1 foot of head	0.433 psi
1 inch of mercury (Hg)	1.13 feet of water
1 lpm	0.264 gallons per minute
1 gpm	3.78 liters per minute
Pipe sizing	[0.32 x flowrate in gpm] ÷ pipe area in^2 = feet per second
1 gpm	0.264 liters per minute
1 lpm	3.78 gallons per minute

Estimating Pool Area & Volume

Circle	$V = \pi \, r^2 \, D$
Kidney	$V = (A + B) \times L \times 0.45 \times D$
Ellipse	$V = (L \times W) + \pi \, r^2 \times D$
Rectangle	$V = L \times W \times D$
Oval	$V = [\pi \, (A \times B)] \times D$

Gauges

Dirty Filter
- Vacuum: Down from start-up reading
- Influent: Up
- Effluent: Down
- Flowmeter Down

Blocked suction line, clogged hair & lint strainer
- Vacuum: Up from start-up reading
- Influent: Down

Effluent: Down

Defective pump seal, clogged impeller
        Vacuum: Down from start-up reading
        Influent: No change
        Effluent: No change

Restricted return line, partially closed valve
        Vacuum: Down from start-up reading
        Influent: Up
        Effluent: Up

Partially closed valve opened
        Vacuum: Up from start-up reading
        Influent: Up
        Effluent: Up