

Swimming Pool & Spa Definitions

Acid – A chemical compound that lowers pH by contributing hydrogen ions to a water solution. The opposite of a base.

Base – (a.k.a. Alkaline) – A chemical that neutralizes acids, usually by furnishing hydroxyl ions (OH⁻). The opposite of an acid.

Breakpoint Chlorination – Elimination of inorganic chloramines by adding enough Free Chlorine to destroy the inorganic chloramines that contribute to combined chlorine. Ten times the Combined Chlorine minus the existing Free Chlorine is used.

Bromine – (a.k.a. 1-bromo-3-chloro-5,5-dimethylhydantoin or BCDMH; 1,3.-dibromo-5,5-dimethylhydantoin or DBDMH; bromide/oxidizer) – A generic term used to describe any chemical that releases hypobromous acid when dissolved in water. Elemental bromine (Br₂), a brown liquid, is no longer used to treat recreational water.

Buffer – A mixture of chemicals added to water that causes the solution to resist pH change. The amount of buffer in the water is measured by the total alkalinity.

Calcium Carbonate (CaCO₃) (a.k.a. Scale) – A water-insoluble white solid that is a major component of scale.

Calcium Chloride (CaCl₂) – A soluble white salt used to raise the calcium hardness level.

Calcium Hardness – The calcium portion of the total hardness. The level of calcium determines whether water is overly “soft” (too little) or “hard” (too much). Excessively high hardness levels may cause cloudy water and scale. Excessively low levels may harm the pool.

Calcium Hypochlorite (Ca (OCl) ₂) (a.k.a. Cal Hypo) – A white solid disinfectant and oxidizer that releases chlorine (Hypochlorous Acid) when dissolved in water. It is available as granules, briquettes, and tablets. It contains from 65-78% available chlorine content in the industrial grade, or less in formulated products.

Chloramines (a.k.a. Combined Chlorine) – The chemical species that forms when chlorine chemically bonds to ammonia from urine and perspiration, chloramine-treated potable fill water, and fertilizers. Chloramines can irritate the eyes and skin of users. They have a strong chlorine-like odor.

Chlorine (Cl₂) – A heavy, green, highly poisonous gas compressed in liquid form and stored in heavy steel tanks. It is used in swimming pools as a disinfectant and algicide. Extreme caution must be used in handling.

Clarity – The degree of transparency of pool water. Characterized by the ease with which an object can be seen through a given depth of water or by use of a turbidity meter.

Combined Chlorine (a.k.a. Combined Available Chlorine or Chloramine) – The chemical species that forms when chlorine chemically bonds to nitrogen-containing compounds like urine, perspiration, dead algae, etc. Combined chlorine can cause eye and skin irritation and has a strong chlorine-like odor.

Cyanuric Acid - (C₃N₃O₃H₃) (a.k.a. Stabilizer, Conditioner, or 2,4,6-trihydroxy-s-triazine) – A white, granular solid chemical that reduces the loss of chlorine due to the ultraviolet rays from sunlight.

Diethyl-p-phenylenediamine (DPD) – A reagent used in test kits or strips to measure and indicate either total or free available chlorine. The presence of chlorine turns the reagent pink.

Disinfectant (a.k.a. Sanitizer) – An agent that destroys microorganisms that might carry disease.

Flow Meter - A device that measures pressure differential across a calibrated orifice and indicates the rate of flow at that point, usually given in gallons per minute or liters per minute.

Free Chlorine (a.k.a. FC or Free Available Chlorine) – The portion of total chlorine that is not combined chlorine and is available as disinfectant (HOCl, and OCl⁻). The portion of total chlorine that reacts with DPD.

Galvanic Corrosion – Corrosion of metals that occurs when two or more dissimilar metals are immersed in an electrolyte (including pool water).

Hydrochloric Acid (HCl) (a.k.a. *Muriatic Acid*) – A strong acid used to reduce the pH and total alkalinity and to clean scale or “acid wash” surfaces. It is also generated in the reaction of chlorine gas and water.

Oxidation – The process of changing the chemical structure of water contaminants by increasing the number of oxygen atoms or reducing the number of electrons in the contaminant.

Oxidation Reduction Potential (a.k.a. ORP) – A method of measuring the potential, which often relates to the concentration of an oxidizer in the water. ORP probes send signals to electrical controllers that can open valves on chemical feeders to dissolve and release disinfectants into the water.

pH – The negative logarithm of the hydrogen-ion concentration of a water solution. A measure of the degree of acidity or alkalinity of a solution. A pH below 7.0 is considered acid. A pH above 7.0 is considered alkaline.

Potassium Monopersulfate (KHSO₅) (a.k.a. Potassium Peroxymonosulfate) – A non-chlorine oxidizer used to reduce contaminants or to activate bromide ions to produce hypobromous acid. Potassium Monopersulfate performs oxidation of inorganic and organic contaminants.

Ring Buoy – A ring-shaped floating object capable of supporting a drowning person. Usually attached to a rope and kept at poolside for rescue use.

Scale – Calcium carbonate (CaCO₃) deposits that can be found deposited in the filter, heater, or on the pool tile and wall. Generally caused by high calcium hardness, total alkalinity, temperature, and/or pH.

Sodium Bicarbonate (NaHCO₃) (a.k.a. Baking Soda) – A powder used to raise the total alkalinity content of a pool with a small change in pH.

Sodium Bisulfate (NaHSO₄) (a.k.a. Dry Acid) – A white powder that lowers pH and alkalinity.

Sodium Carbonate (NaCO_3) (a.k.a. Soda Ash) – A white, soluble solid used to raise the pH and alkalinity of pool water.

Sodium dichloro-s-tiazinetriene ($\text{C}_3\text{N}_3\text{O}_3\text{Cl}_2\text{Na}$) (a.k.a. Dichlor or Dichloroisocyanuric acid) – A white solid disinfectant and oxidizer that releases chlorine (hypochlorous acid) and cyanuric acid (stabilizer) when dissolved in water. It is available in tablet or granular products. It contains about 56%-63% available chlorine content in the industrial grade, or less in formulated products.

Sodium Hypochlorite (NaOCl) (a.k.a. Bleach or Liquid Chlorine) – A liquid disinfectant and oxidizer that releases chlorine (hypochlorous acid) when added to water. It contains between 10% to 15% available chlorine for swimming pool products and about 5% for household products.

Sodium Thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) – A chemical used to remove chlorine from a test sample to avoid false pH test readings or false bacteria test results. It is used in larger quantities to dechlorinate swimming pools.

Superchlorination – The practice of adding large quantities of a chlorinating chemical to kill algae and microorganisms, eliminate slime, destroy odors, or improve the ability to maintain a disinfectant residual.

Total Alkalinity – A measure of the ability of the water to maintain a desirable pH when acid is added to the water. This value is usually expressed as the equivalent amount of calcium carbonate (CaCO_3) in either mg/L or ppm.

Total Chlorine (a.k.a. TC or Total Available Chlorine) – The total of all free available chlorine and combined chlorine in the water.

Total Dissolved Solids (TDS) – The amount of residue that would remain if all the water evaporated or was removed. Expressed as the mass of solid per the total initial volume of water (ppm or mg/L). Typically measured by electrical conductance.

Trichlor or Triazinetrione ($\text{C}_3\text{N}_3\text{O}_3\text{Cl}_3$) (a.k.a. Trichlor or trichloroisocyanuric acid) – A disinfectant that releases chlorine (hypochlorous acid) and cyanuric acid

(stabilizer) when dissolved in water. It is available as an active ingredient in tablet or granular products.

Turbidity – A measure of the cloudiness or haziness of an otherwise clear liquid due to the presence of small liquid or small particles in the liquid. Turbidity is measured in Nephelometer Turbidity Unit (NTUs).

Turnover Rate - The time it takes (in hours) to circulate an amount of water equivalent to the volume of the pool or spa.

Weir – A flap within a skimmer that adjusts automatically to small changes in water level and assures a continuous water flow to the skimmer.