

# Speaking the Lingo

**A quick reference to understanding commonly used terms pertaining to your swimming pool.**

Every Industry has its own language, being familiar with the terminology applicable to your swimming pool can make conversations about your pool easier and much more understandable. This guide is meant to educate and inform you, in order to assist you in making good decisions concerning your pool and spa. Use of this guide can assist you in discussing or explaining issues you may have with your pool. Speaking with your builder or service provider. Keep this guide with you as an easy reference for discussions about your pool and spa. ***It helps to be able to speak the language...***

**Acid Demand:** The amount of Muriatic acid needed to bring pH and alkalinity levels into balance.

**Acid Wash:** Procedure using a solution muriatic acid diluted with water to remove cement paste, mineral stains metal particles from interior swimming pool finishes.

**Aggressive Water:** When a pool or spa is low in pH and/or alkalinity and/or calcium hardness, it is considered aggressive, **also referred to as corrosive water**. Water becomes corrosive and can Etch plaster, dissolve metals, lower alkalinity and reduce chlorine efficiency.

**Algae:** Microscopic, plant-like organisms that grow in warm water without proper sanitizers. Algae can be nourished by sunlight and can be introduced thru wind or rain. It can be blue-green, green, black or yellow-green (mustard) in color.

**Algaecides:** Chemicals that prevent and control algae. Some are designed to kill specific types of visible algae, while some simply prevent algae growth.

**Alkaline:** A compound with properties that allow it to neutralize an acid.

**Alkalinity/ Total alkalinity:** When kept at 90 ppm, water has ability to resist change in pH, also known as “buffering capacity”, keeps pH from drifting low. High levels can cause scale; low levels can cause aggressive/corrosive water.

**Available Chlorine:** Chlorine, both free and combined, that is active to some degree in preventing bacteria in pool water.

**Backwash:** The process of cleaning a swimming pool filter, (sand or DE) by reversing the flow of water back thru filter media and expelling it from the circulation system.

**Bacteria (Germs):** Unicellular microorganisms of various forms some of which can cause disease.

**Balanced Water:** Pool water is said to be “balanced” when the pH, total alkalinity, calcium hardness, TDS, and optionally the borates and cyanuric acid are all within recommended ranges.

**Bond Coat:** Cementitious product enhanced with Acrylic/Polymer components, installed on existing pool shell, to provide a mechanical bonding surface for new plaster or pebble products to be applied to.

**Borate:** Borate is a pH buffer that will keep the pH from drifting higher. The pH will remain stable when using borate at 50 ppm along with alkalinity of 90 ppm and CYA of 50 ppm. (Borax, Sodium Tetraborate, Boric Acid)

**Bromine:** A chemical that acts as an oxidant and a sanitizing agent to disinfect pool, spa or hot tub water.

**Bromamines:** Bromine-ammonia compounds that are active sanitizers. They have no odor and do not irritate skin.

**Calcium Chloride:** A crystalline solid, in various technical grades used as an accelerator of cement-based mixes. Also used, when diluted as a “Calcium increaser” in pool water.

**Calcium Hardness:** The amount of dissolved calcium in water. High levels promote scale and can cause cloudy water. Low levels cause etching of plaster and corrosion of metals. Ideal range 200-400 ppm.

**Chloramines:** Compounds formed when hypochlorous acid combines with urine, perspiration and skin proteins. This form of chlorine causes eye and skin irritation, unpleasant water odor, does not satisfactorily sanitize pool water.

**Chlorinator:** Any chemical feeder used to dispense any form of chlorine into swimming pool circulation system.

**Chlorine:** A chemical used as an oxidant and sanitizing agent in pool, spa and hot tub disinfecting.

**Chlorine Demand:** The amount of chlorine required to destroy germs, algae and other impurities in the water.

**Chlorine Residual:** The amount of available chlorine remaining in the pool water after the chlorine demand has been satisfied.

**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.

**Combined Chlorine:** Chlorine that has combined with a nitrogen compound, usually ammonia, forming compounds known as chloramines. Although combined chlorine does have some bactericidal powers, it is far less effective than free chlorine. Combined Chlorine is calculated by subtracting Free Chlorine from Total Chlorine readings and should be zero. (See “Shock Treatment”)

**Conditioner:** A chemical that helps reduce the excessive loss of chlorine caused by ultraviolet rays from the sun. Helps buffer pH from going down. Also known as “Cyanuric Acid” (CYA), or “stabilizer”. Measured in ppm (parts per million), the ideal range is 30-50 ppm. (also see Cyanuric Acid)

**Contaminated:** Impure. Can refer to the presence of harmful bacteria in water or the presence of unwanted substance(s) in plaster or pebble interior finish.

**Copper:** A metallic element that can cause blue-green water or stains on pool or spa surfaces.

**Corrosive Water:** Also known as “aggressive water”, is water that will dissolve materials that it encounters. Can cause etching of plaster or dissolve metals, lower alkalinity and reduce chlorine efficiency.

**Check Cracking:** A common random crack pattern of a plaster surface that generally self-heals through the ongoing hydration and curing process, also known by the slang terms of map cracking, crazing, hair line cracking, pattern cracking or eggshell cracking. Small cracks associated with the shrinkage from moisture loss and consolidation within a cementitious coating during set.

**Crazing:** Spider-webbing pattern. Also known as “checking”, or “check cracking”. The cracks are a normal part of plaster curing and will reseal themselves when covered with water.

**Curing: (Plaster)** The process by which the cementitious surface coating of the finish continues hydration. Curing is typically done by immersing the coating in water as soon as possible after final set. The hydration will continue underwater. May typically take 3 months to 2 years.

**Cyanuric Acid:** A chemical component in all concentrated forms of chlorinator (chemicals not equipment), which protects chlorine from UV rays from the sun, buffers pH from increasing, increases free chlorine needed, affects kill rate of chlorine, lowers pH and alkalinity, buffers chlorine itself – releases chlorine as needed. When CYA level is too high actually “blocks” sanitizer from functioning properly. (+50 ppm or higher) Draining your pool or spa is only remedy for excessive CYA levels. Ideal range 30-50 ppm.

**Diatomaceous Earth:** White powder comprised of fossilized skeletons of one cell organisms called diatoms. Porous, containing microscopic spaces. Used as a filter medium for swimming pools.

**D.E. Filter:** A filter designed to use diatomaceous earth or volcanic ash as a filter medium. Can be either a pressure or vacuum type filter.

**Electrode:** An electrical sensor placed in contact with a nonmetallic part of a circuit to take sample measurements in order to control water variables through automation.

**Erosion Feeder:** A chemical feed device in which powder, tablet or sticks are placed in a closed container through which a regulated stream of pool water can flow, gradually eroding the chemical and introducing it into the pool of water. Feed rates vary with flow velocity.

**Etching:** The visible deterioration, pitting, dissolving or eating away of the surface of the cement coating of the plaster material finish caused by chemical or physical processes.

**Filter:** A mechanical device for straining suspended particles from water. Refers to the complete mechanism including all component parts.

**Filter Aid:** Usually refers to powder-like substance such as Diatomaceous earth or volcanic ash used to coat a septum-type filter. Can also be used to refer to alum as an aid to sand filtration.

**Filter Cartridge:** A disposable element, usually of fibrous material, used as a filter septum to hold filter aid which is the filtering medium.

**Filter Media/Medium:** Any fine grain material, carefully graded as to size that entraps suspended particles as water passes through.

**Free Available Chlorine:** The amount of chlorine left after the water's chlorine demand has been met. The free available chlorine should be maintained at 1.0 to 1.5 ppm to destroy contaminants brought into the pool by swimmers or carried in by air or rain.

**Free Chlorine:** The hypochlorous acid and hypochlorite ions formed when chlorine sanitizers are dissolved in water.

**Hardness:** The quantity of dissolved minerals, primarily calcium and magnesium dissolved in water. High levels contribute to cloudy water and scale formation while low levels cause water to "attack" pool components.

**Hard Water:** Water with a high level of calcium and magnesium dissolved in it.

**Hydration:** The formation of a compound by combining water with some other substance. In cementitious materials, the chemical reaction between hydraulic cement and water.

**Hypochlorous Acid:** The active agent formed when chlorine sanitizers are dissolved in water.

**Impeller:** The rotating vanes of a centrifugal pump inside the volute.

**Iron:** A metal with chemical element symbol FE. This element can cause orange or brown-colored water or stains on pool and spa surfaces.

**Liquid Acid:** Chemical used to reduce pH and total alkalinity in pool water. Most common types are muriatic and sulfuric. They are extremely corrosive and dangerous chemicals to handle.

**Manganese:** Chemical element. It is not found as a free element in nature; it is often found in minerals in combination with iron. This element can cause orange or red-brown colored water or stains on pool and spa surfaces.

**Marcite:** A regional term that is used in place of the term plaster.

**Mottling:** The blotchy appearance across the surface of a cementitious finish, which can have varying shades of color, usually in a random pattern and are typically more pronounced in darker colored finishes. The normal variations in a cementitious material as a result of the ongoing hydration process. Typically lessen or disappear over time as finish cures.

**Muriatic Acid:** A diluted solution of hydrochloric acid.

**Organic Wastes:** The perspiration, urine, fecal matter, saliva and suntan oil that swimmers introduce into a pool. When these wastes accumulate, they must be chemically oxidized because most won't filter out.

**Pebble Finish:** A hand troweled, hand applied – exposed aggregate product that forms the decorative, natural stone aesthetic, interior finish shell of the pool.

**pH:** A value expressing relative acidity or alkalinity. Expressed as a number from 1-14, with “0” being the most acidic to “14”. Low pH values cause equipment and surface corrosion; high values cause scale and reduce effectiveness of sanitizers. Ideal range is 7.2 – 7.8 for pools and spas.

**Phenol Red:** An organic dye that is yellow at a pH of 6.8 and turns progressively deeper red in color as the pH increases to 8.4. The most commonly used test reagent for pH in pools.

**Pitting:** A slang term indicating a form of etching. The development of small cavities in the surface of the cementitious coating of the interior pool finish.

**Plaster:** A hard troweled, hand applied cementitious material consisting of white cement and crushed marble dust. Used as an aesthetic, decorative, maintainable inner shell finish for a swimming pool. The act of placing a cementitious mixture, plaster, quartz or pebble on the interior shell of a swimming pool.

**Potable:** Water that is safe and suitable for drinking.

**ppm:** Parts per million, the generally accepted measurement form in various aspects of pool care. A miniscule quantity of measurement as relates to water chemistry.

**Precipitate:** In swimming pools, it is the minerals and/or metals that come out of solution and settle onto the interior coating's surface that can adhere, resulting in unsightly stains and roughness. Caused by pH and total alkalinity levels being too high.

**psi:** Pounds per square inch. In swimming pools, a commonly used term for a unit of measurement of pressure or plumbing "head" pressure.

**Pump Strainer:** A device containing a removable strainer basket, also referred to as a "leaf basket", designed to protect pump impellers from debris in the water flow when installed in the pump suction line. Also called lint strainer or hair and lint catcher.

**Quartz Finish:** A combination of cement, crushed quartz aggregate, and water, with or without other admixtures that when mixed thoroughly, place properly. And finished accordingly, form a desired decorative aesthetic that is a maintainable and watertight finish applied over the inner shell of the swimming pool.

**Replaster:** A recoating of a plaster, quartz or pebble pool usually 10-20 years after the original coating. Also known as a "redo". The main concern is to achieve a proper bond or attachment of the new plaster coating to the underlying original substrate.

**Ring buoy:** Life preserver. A ring-shaped floating buoy capable of supporting a person struggling or drowning in the pool. Usually attached to 50-60 feet of light line and kept at poolside for rescue use.

**Scaling:** The hard-mineral deposit that forms on surfaces in contact with water when the calcium hardness of pH or total alkalinity levels are too high. (See also precipitate)

**Shadowing:** A curing state of plaster Cloud effect appearance, light mottling, not a stain. Usually disappears after regular maintenance over time.

**Shock Treatment:** The addition of pool chemicals, in much larger amounts than required for routine sanitizing in order to eliminate unusual pool water conditions: algae chloramines, colored water and chlorine demand.

**Shrinkage-Related Cracking:** See also Check Cracking

**Skimmer:** A device other than an overflow trough for continuous removal of surface water and floating debris from a pool. Usually returns water removed to the filter.

**Skimmer weir:** Part of a skimmer that adjusts automatically to small changes in water level to assure a continuous flow of water to the skimmer.

**Soda Ash:** Sodium carbonate ( $\text{Na}_2\text{CO}_3$ ) used to raise pH and increase total alkalinity in pool water. Also used to react with alum to produce floc (filter aid) on sand filters and to neutralize hydrochloric acid resulting from use of chlorine gas for chlorine.

**Spalling:** The lifting off or falling away of the upper surface finish of a cementitious coating, generally considered to be the complete failure of a blister or an upper-surface delamination.

**Stabilization:** Adding cyanuric acid to pool water, which extends the effective life of the chlorine-sanitizing agent (hypochlorous acid) by protecting it from the dissipating effects of sunlight. Also acts as a buffer against pH decrease.

**Super chlorination (shock treatment):** The practice of adding 8-10 times the normal chlorine dose to destroy algae or reach breakpoint for the reduction of chloramines. Especially important during periods of excessive heat or rainfall and heavy pool use.

**Swimmer Load:** The number of persons in the pool area at any given moment, or during a stated time period.

**Total Alkalinity (TA):** The total amount of carbonates, bicarbonates and hydroxides in the pool. Total alkalinity affects and controls pH. If total alkalinity is too high, pH will be hard to adjust. If it's too low, pH will be unstable, difficult to maintain within the desired range. The total alkalinity level should be kept between 80-120 ppm, depending on sanitizer.