



Hot Tub Glossary

Learn the proper hot tub terminology and sound more knowledgeable about your spa with our hot tub glossary. Enjoy!

A

Acid

Chemicals such as sodium bisulfate (dry acid), Muriatic acid or pH decrease. Used to balance water pH levels or to lower total alkalinity levels.

Acrylic

Many/most hot tub shells are made out of this durable synthetic material.

Air Buttons

[Topside spa controls](#) used to activate jets and other spa features.

Air Lock

Occurs when air pockets form around the pump or in plumbing. Typically happens when draining/refilling. Typically cured by slightly loosening the pump fittings and allowing the trapped air to escape.

Air Switches

Electro-mechanical devices used to control motors and other devices in the spa.

Algae

Microscopic aquatic plant life which typically grows on spa surfaces or floats in the water and discolors it. Algae is a sure sign of improper spa sanitization.

Algaecide

Any water treatment product designed to kill algae.

Alkalis/Alkaline/Alkalinity

The opposite of acids, Alkalis are substances with a pH greater than 7 that dissolve in water. Alkalinity refers to the amount of carbonates and bicarbonates in water, measured in parts per million (ppm) and total alkalinity is one of the components of balanced water.

B

Bacteria

Microscopic organisms continuously enter spa water via bathers, dust, etc. Without proper sanitization hot tubs are an ideal breeding ground for them, many of which can cause disease or infection.

Balanced Water

The desirable level of chemical composition in hot tub water. Water with the proper relationships of pH, total alkalinity and calcium hardness is said to be balanced.

Base

Alkaline chemicals that counteract acid to achieve a neutral pH level of 7.

Bather Load

The number of individuals using a pool or spa in a 24 hour period.

Biofilm

Microorganisms (ie. slime, film) which adhere inside the spa plumbing. Biofilm may contain bacteria, viruses, mold, parasites, etc.

Biguanides

A non-halogen sanitizer used for spa water.

Bromine

A non-metallic, water soluble liquid (at room temperature) often used in spa water maintenance.

Brominator

A floating device which holds bromine tablets and dispenses a metered amount of bromine sanitizer into the spa water.

BTU (British Thermal Unit)

A scale for measuring the capacity of a heating device, such as a gas spa heater.

Buffer

A chemical that resists pH change in spa water, such as sodium bicarbonate or pH Buffer/Alkalinity Increase.

C

Cabinet

The exterior surface of the spa. Some are made out of wood while many others are made of a synthetic material.

Calcium

An alkaline metallic element.

Calcium Carbonate

A crystalline deposit that can form on spa water surfaces, equipment or pipes if water is not properly balanced. Also known as "scale".

Calcium Chloride

A soluble white compound used to [raise the calcium hardness](#) of spa water.

Calcium Hardness

A measure of the amount of calcium dissolved in water. Water with low hardness can lead to corrosion of metal parts.

[Cartridge Filter](#)

Consisting of a cylinder of pleated fabric with end caps, filters are used to trap debris, dirt and general floaties before they reach the spa water.

Chelating Agent

A chemical additive that prevents metal staining and water discoloration.

Chloramines

Foul smelling compounds formed by the combination of chlorine molecules, nitrogen and ammonia. The water must be shocked to get rid of them.

[Chlorine](#)

When added to spa water, chlorine acts as an oxidizer, sanitizer, disinfectant, and all-around biocidal agent, killing algae and bacteria in the spa water.

[Circuit Board](#)

The electronic brains of a spa, containing relays, contactors, and connecting to all other electrical components.

[Circuit Breaker](#)

A switch that allows you to manually override an electrical circuit. Circuit breakers automatically break the circuit when it detects harmful fluctuations in the electrical current.

[Circulation Pump](#)

This is the pump that pulls water from the spa and pushes it through filters before returning it to the spa.

Circulation System

The plumbing, pumps and filter(s) that continuously moves water throughout the spa. Circulation is a critical component in maintaining spa water balance.

Clarifier

A compound used to remove dissolved solids, metals, dirt, oils, or other contaminants from spa and pool water.

Control Panel

Allows you to adjust your spa's settings such as temperature, jets and lighting.

Corrosion

Occurs in an overly acidic water environment where alkalinity is too low. Corrosion can etch, pit or erode (ie. rust) surfaces.

Cover

Most hot tub covers are made of an insulating material that is covered with vinyl. The cover helps retain heat, keeps debris out of the water and when properly locked(!), can keep children and animals from getting into your hot tub.

Cover Lifter

Eliminates the need to drag/pull your spa cover off of your spa before using it. It saves your back and helps prevent unnecessary damage to your spa's cover.

Cover Protectant

A special formulation for vinyl spa covers which prevents deterioration caused by sunlight and weather such as 303 Protectant.

D

Defoamer

A compound used to reduce or eliminate foaming in spa water.

Disinfect

To kill and inhibit growth of harmful microorganisms spa water through the use of a sanitizer.

Disinfectant

Any chemical or process that helps destroy harmful micro-organisms and other contaminants. Chlorine and Bromine are two of the most common.

Diverter Valve

An adjustable valve that controls the flow of water from the spa jets.

Dry Acid

A granular chemical, sodium bisulfate used to lower the pH and/or total alkalinity.

E**Effective Filtration Area**

The total area in square footage of the filter capable of filtering water.

Electrolysis

A process that separates chemically bonded elements and compounds by running an electric current through them.

Enzymes

Biodegradable proteins which break-down oils, films and digest scum.

Equilibrate

To bring to a chemical balance or equilibrium.

Ergonomic

Scientifically designed for greater user efficiency, comfort and safety.

F**Filter**

Remove impurities from the hot tub water by pumping it through a porous medium such as polyester fiber.

Filtration Rate

The rate at which spa water is pumped through a filter, typically measured in gallons per minute (GPM).

Flow Rate

The amount of water that flows past a specific point during a specific period of time, typically measured in gallons per minute (gpm).

Foaming

Surface foam caused by high levels of total dissolved solids in the water combined with soft water and body oils. Enzymes are used to control foam.

Foam Insulation

Typically sprayed on the underside of a spa cabinet to help retard the loss of heat escaping through the shell.

Free Chlorine

The amount of chlorine available to kill bacteria or algae. Also known as Available Chlorine.

G

GFCI

Grounded Fault Circuit Interrupters are required by the National Electrical Code in home electrical wiring for receptacle outlets installed for use with hot tubs.

Grounding

Providing or connecting an electric-conducting path to earth. Equipment is grounded for safety, so that in the event of an electrical short to ground, the circuit breaker will trip.

Gunite

A mixture of cement and sand, sprayed with machinery onto a contoured and reinforced surface to form a pool or spa.

H

Halogen

Any of the four elements fluorine, chlorine, bromine and iodine that are often used in spa water care.

Hard Water

Water that is high in dissolved minerals, specifically calcium, magnesium, or other salts that can corrode hot tub components and feel harsh to the skin.

Heater

The heater is what makes hot tub water 'hot'..

Heater Elements

The components inside the heater housing that create and transfer heat to the water.

Heat Exchanger

A device with plates or coiled tubes which transfers heat to water.

Heater Manifold

A housing for the heater elements through which water flows.

Hertz (Hz)

The measure of the frequency of alternating current expressed in cycles per second.

HP

Short for horsepower, a non-metric measurement unit of power, typically associated with a mechanical device or engine. 1 unit of horsepower is equal to 745.7 watts.

High Limit Switch

A safety switch in a heater assembly which shuts-off power to the heater element if the temperature becomes too great.

Hot Tub Folliculitis

A skin condition (ie. red, pimply ITCHY rash) often caused by un-sanitized spa water.

Humidity

Warm, moist air that can cause mold and mildew when present in excess amounts and combined with a lack of air circulation.

Hydro Massage

Massage using pressurized water. Ahhhhhh...

Hydrotherapy

Physical therapy using water to aid in healing.

Hydrotherapy Jets

Jet fittings in a spa which blend air with water to create a high-velocity, turbulent stream which is stimulating to the skin and body.

Hypobromous Acid

The strongest disinfecting form of bromine in water.

Hypochlorous Acid

The strongest disinfecting form of chlorine in water.

I

Impeller

Part of a pump which rotates to provide centrifugal force for propelling the water in a recirculation system such as a hot tub or pool.

Ion

An atom or molecule that possesses an electrical charge.

Ionizer

A device that generates copper, zinc and/or silver ions to kill bacteria and algae.

Insulation

The inner layer of the shell contains an insulating material to retain heat.

Iron

A metallic element that can be introduced to spa water through plumbing or well water. It can stain surfaces or turn water a clear green.

J

Jacuzzi

"Jacuzzi" is often used to refer to any tub with massaging jets, but Jacuzzi is a trademarked brand name and should only be used to refer to products made by Jacuzzi, Inc. Similar to the way "Kleenex" is used interchangeably for tissue.

Jet

Jets affect the direction, volume and velocity of water flow.

Jet Pump

Used to provide thrust to spa jets.

K

Kilowatt

A unit of power equal to 1000 watts.

Kilowatt Hour

A unit of work energy which equals the energy expended by 1 kilowatt in 1 hour.

L

Langelier Index

A system for determining water balance by assigning values to pH levels, total alkalinity, calcium hardness and water temperature.

M

Make-Up Water

Fresh source water used to fill or top-off a spa or pool.

Magnesium

A metallic element which can cause spa staining and scaling when present in high non-chelated concentrations.

Minerals

Natural substances such as calcium, copper, silver, iron and aluminum which can cause spa staining and scaling when present in high concentrations.

Micro-organisms

Microscopic animal life that can be harmless, beneficial or harmful. Harmful micro-organisms can be removed from spa water with disinfectants such as chlorine, bromine and silver algaecides.

Motor

Power supply for the spa pump.

Muriatic Acid

A form of diluted hydrochloric acid used for reducing pH, and also for dissolving scale from filter cartridges. Use with caution!

N

Nitrogen

When combined with chlorine, nitrogen creates undesirable chloramines in spa water, and is often introduced from sunscreen and perspiration.

No-Bypass Filtration

Ensures all spa water passes through the filter before it re-enters your spa.

Non-Chlorine Shock

A granular form of potassium monopersulfate used to oxidize micro-organisms, chloramines and other contaminants.

O

Organic Contaminants

Body oils, perspiration and sun screen residues which bathers introduce into the spa. Most organic wastes will not filter out and must be broken-down by shocking with an oxidizer.

Oxidizer

A shocking compound that removes or destroys built-up contaminants, chloramines and organic waste in spa water.

Oxidizing

The process of breaking down organic wastes by the addition of a shocking compound to the spa water.

Ozone

A colorless gas soluble in alkalis and cold water. Its strong oxidizing capabilities make it a powerful organic oxidizer.

Ozonator

An electrically-powered device which produces Ozone.

P

pH

The relative acidity or alkalinity of water, expressed in a numeric scale from 0-14, with low pH

ranging from 0-6 (acidic), high pH ranging from 8-14 (alkaline), and 7 representing a neutral and desirable pH.

[pH Decreaser](#)

An acidic chemical used to lower pH.

[pH Increaser](#)

A base compound such as sodium carbonate or soda ash used to raise pH.

Phenol Red

Chemical reagent used for testing pH in the range of 6.8 - 8.4. Found in liquid test kits.

Polyurethane Foam

An insulating plastic material used to reinforce the shell of a spa for added support and to retard heat loss.

Potassium Carbonate

Sometimes sold in liquid form as pH increaser.

Potassium Monopersulfate

An oxygen-based shocking compound, such as Oxy Shock.

PPM

Parts Per Million. A unit of measurement used to express the concentration of chemicals in water.

[PVC](#)

Short for polyvinyl chloride, PVC is a plastic used for plumbing pipes.

Precipitate

A solid which is forced out of solution in water to form flakes or haze (turbidity) in suspension.

[Pressure Switch](#)

A safety switch which shuts-off power to the heater element if water flow is not detected.

Pseudomonas

Pseudomonas bacteria can cause Hot Tub Folliculitis. The most common symptom is an itchy rash or small reddish bumps, sometimes confused with bug bites.

[Pump](#)

Part of the spa's circulation system, a pump is a mechanical device, powered by an electric motor, which makes water flow under pressure to the jets.

Pump Strainer Basket

A removal basket on the suction side of a pump used to trap large debris such as leaves and prevent them from restricting water flow to the pump.

Q

R

R-Value

The measure of resistance to the flow of heat through a given thickness of a material (i.e. insulation). Higher numbers indicating better insulating properties.

Reagents

Chemical indicator used to test water balance.

Relay

A device in a spa's electrical circuit which controls power to another device.

Return Inlet

The fitting through which water returns into a spa from the circulating pump.

S

Safety Cover

A spa cover which meets ASTM standards for strength, construction, and anchoring.

Sanitizer

A product used to kill bacteria or other micro-organisms in spa water. EPA recognized sanitizers approved for spas are chlorine, bromine, and biguanide.

Scale

Calcium crust or buildup caused by unbalanced water.

Scum Digester

An enzyme product which breaks down body oils, soap film and lotion residues in spa water.

Shell

The interior surface of the spa that holds both the water and the bathers.

Shock

Bringing the spa sanitizer level up high enough to reach breakpoint chlorination, eliminate chloramines and achieve water purification.

Seating Capacity

The total number of designated seats in the spa.

Skimmer

Helps remove large debris (ie. leaves) from the water's surface so they don't reach the filter and clog it.

Soda Ash

Common term for sodium carbonate such as pH Increase. Soda ash has a pH of 13.

Sodium Bicarbonate

Commonly used to increase the Total Alkalinity of spa water. Sodium bicarbonate has a pH of 8.3.

Sodium Bisulfate

Also known as dry acid, the chemical used to lower pH and total alkalinity of spa water (pH Decrease).

Sodium Dichlor

The type of chlorine which is most effective for use in spas. Sometimes used as a sanitizer, and is a very good shock for problem spas, particularly when cloudiness due to high bather load is a factor.

Sodium Hypochlorite

The form of chlorine in liquid household bleach. Not recommended for spas because it has limited effectiveness in hot water, adversely affects pH balance, and can damage spa surfaces if spilled or splashed.

Soft Water

Water that has a naturally or chemically-generated low calcium and/or magnesium content. Soft water can leave skin feeling silky.

Spa Pack

An integrated unit consisting of electronic or mechanical controls, which may include a water pump, GFCI and other devices.

Suction Outlet

The fitting, often near the skimmer, through which the water is drawn from the spa.

T

TDS

Total Dissolved Solids is a unit of measurement for anything that can dissolve in water and be

present in solution. High levels of TDS can over-saturate spa water and cause undesirable reactions and can ultimately result in the need to drain and refill the hot tub.

Test Kit

A set of chemical solutions and color references for testing pH, total alkalinity and sanitizer levels of spa water.

Test Strips

Paper strips used to measure spa water pH and other chemical balances.

Thermostat

Controls the operation of the heater by sensing water temperature.

Trichloro-S-Triazinetrione

A chemical compound used as an industrial disinfectant and bleaching agent.

Timer

A clock that automatically controls the pump and other devices in a spa.

Topside Controls

A set of button or knob switches for controlling a spa's pump, jets, heater, and other features.

Total Alkalinity (TA)

The measure in Parts per Million (PPM) of all the dissolved base/alkaline material in the water.

Total Chlorine

The sum of combined and free chlorine in the spa water.

Turbidity

A cloudy condition in water due to the presence of suspended particulates or precipitated material such as scale.

Turnover

The time period required to completely circulate an amount of water equal to the volume of a vessel, such as a pool or spa.

U

Ultra Violet (UV)

Just like your skin, Ultra Violet light is particularly damaging to vinyl spa covers. Use of a protectant, such as 303 Protectant, blocks UV rays to prolong cover life.

Urethane Foam

An spray-in insulating plastic material used to reinforce the shell of a spa for added support and to retard heat loss.

V

[Valves](#)

Devices placed on plumbing lines to direct, restrict or obstruct water flow such as the diverter valves used with spa jets.

Velocity

Water movement rate, as measured in gallons per minute or feet per second.

Venturi

A tube with a tapering constriction in the middle that causes an increase in the velocity of flow of a fluid and a corresponding decrease in fluid pressure. In spas, Venturi fittings with side drafts are sometimes used to introduce air into jet features, and to pull ozone from Ozonators into the spa water.

Volute

A pump housing containing an impeller and a diffuser.

W

Water Capacity

The total number of gallons of water your spa can contain.

Watt

A derived unit of electrical power. Amps x Volts = Watts.

[Weir](#)

A part of a hot tub or pool skimmer that automatically adjusts to water level.

X

Y

Yellow Algae

Also known as mustard algae. Typically found in shady areas and is very resistant to normal levels of chlorine.

Z

About CNY Hot Tubs

CNY Hot Tubs is a family owned and managed small business located in Lansing, NY. We have been serving the Central New York area since 1997 and have been making our customers happy via our online store since 1999.

We stock a huge selection of hot tub parts, supplies and chemicals for all makes and models - and specialize in [Emerald Spas](#), [Softub](#) and [Saratoga Spas](#). We are hot tub enthusiasts ourselves, realize how important your hot tub is to you, and want to make sure you are using the right products for your spa!