ThermoSpas® Hot Tub Glossary

Activator (Potassium Monopersulfate) – Also known as non-chlorine shock, it is a strong oxidizer capable of eliminating contaminants from your spa. It is a non-chlorine chemical compound often used for shock treatments in spas and pools. It is very popular for use in mineral purification systems.

Algae – Over 20,000 species known! Algae may form on your pool surfaces or it may bloom in suspension. We typically know algae to be green, but it may also be yellow (mustard algae), black, blue-green or any shade in between. It may form separate spots, or seem to grow in sheets. Pink algae, is not algae at all, but a form of bacteria. Algae are living, breathing organisms that need warmth, sunlight and CO2 to thrive.

Bather Load – The number of individuals using a pool or spa in a 24 hour period. This is the primary source of bacterial and organic contamination.

Bromine Liquid Salts – In 2-Part Bromine, a compound called sodium bromide (Liquid Salts) is first introduced into the water. Sodium bromide is NOT a sanitizer by itself. To work as a sanitizer the sodium bromide needs an oxidizer, such as monopersulfate, to activate it. The addition of an oxidizer sets the bromide in motion, turning the bromide into the killing form of bromine. After destroying bacteria, algae and other organisms, it can become bromide once again. The oxidizer shocks the water and off-gases the physical waste. Adding additional oxidizer can start the process all over, converting bromide into a sanitizer. This cycle can occur repeatedly.

Bromine Tablets – Bromine tablets are a combination of 70% bromide and 30% chlorine. Tablets are inserted into a dispenser that floats in the water providing continuous coverage. As the tablet dissolves, it releases the bromide and chlorine. The two work together immediately to produce bromine, the active chemical used in sanitation.

Calcium – One of the principal elements making up the earth's crust; its compounds, when dissolved, make the water hard. The presence of calcium in water is a factor contributing to the formation of scale.

Copper – Copper in water is a common problem in many households. Copper is present due to the corrosion of plumbing materials from Acidic (low pH) or Aggressive water (low TDS). Common problems associated with copper due corrosion are leaks in the plumbing system or blue-green staining. High copper

content can also cause some health concerns by effecting the stomach and intestines. The EPA has set a maximum contaminant level of 1.3 ppm.

Disinfect – To kill living organisms on contact. The difference between a disinfectant and a sanitizer is the "kill time": a disinfectant kills 99.9% of living organisms instantly. Chlorine and bromine are the only two sanitizers classified as disinfectants.

Enzymes – Used in spa formulations designed to break down and digest oils similar to the way enzymes are used in oil spill clean-up efforts.

Fill Water – Used in filling or adding to the water level. Whether from the hose or from a well, your fill water brings its own chemical makeup and water balance (or lack thereof).

Filter – A device used to remove particles suspended in the water by pumping water through a porous substance or material.

Filter Cleaner – A deep cleaning filter soak that includes a releasing agent to relax the filter media and allow dirt and grime to be dissolved and cleaned.

Filter Media – A pleated, porous synthetic fabric in filter cartridges, used to trap foreign matter. Filter cartridges must be cleaned regularly with filter cleaning compounds.

Foam Away – Excessive foaming is typically caused by swim-wear used when bathing in a spa or pool. Using a capful of "Foam Away" instantly reduces foam and will allow detergents to be filtered out of your water.

Foaming – A term used to describe surface foam on your water, especially in spas/hot tubs. Foaming is caused by high TDS levels working in combination with soft water and oils. Certain low grade algaecides can foam when added to pool or spa. Use enzymes for foam control.

Jet Line Cleaner – This anti-bacterial cleaner is added to spa water prior to draining and refilling. Left in the spa for an extended period (3 – 24 hrs), this cleaner will break down accumulated biofilm in spa plumbing. This product can also be used in jetted bath tubs.

Mineral Purification System (ThermoClear Cartridge) – Mineral cartridges are placed in your filter core and release silver and copper ions into the spa water. These ions kill bacteria and viruses. Activator must be used to oxidize the

organic material the silver and copper ions have killed. Very low levels of chlorine (0.5 ppm) or Bromine (1 ppm) are recommended as a safety precaution.

Multi-Purpose Cleaner – An enzymatic cleanser used to clean scum lines and mineral deposits off the shell and cabinet surface. This cleanser is pH neutral and will not affect water chemistry. It should be used on a weekly basis and is also a good cleaner to prep your shell for a coating of Acrylic Gloss.

Natural and Clear – A natural enzyme used to devour oils and organic material (skin, hair etc..) left in the spa by bathers that cannot be burned off by oxidizers, sanitizers or disinfectants used in spa sanitation.

Oxidize – To destroy and burn off all the dirt and inorganic or dead organic matter in the water. A sanitizer can oxidize materials such as ammonia, nitrogen-containing contaminants and swimmer waste.

Ozone – is "active oxygen", nature's special molecule (an ozone molecule consists of three oxygen atoms). It is created in nature by the combination of oxygen in the air, and ultraviolet rays or by the electrical discharge during a lightning storm. Ozone is a natural purifier (meaning no harmful chemical by-products are created during purification), it has a clean, fresh scent noticed after a rainstorm. Ozone is the most powerful oxidizer that can be safely used in a swimming pool or spa and is the alternative water purifier to traditional pool/spa chemicals such as chlorine and bromine. Because ozone is a disinfectant it will allow you to reduce your sanitizer usage. It is always recommended that a 1 – 3 ppm sanitizer level be maintained with any ozone system.

pH – The scale of relative acidity. Measurements are expressed in numbers from 0 – 14, with 7.0 being neutral. Acceptable spa ranges are 7.2 – 7.8

pH Down – Used to decrease both the pH and Alkalinity levels of your spa water

pH Up – Used to Increase both the pH and Alkalinity levels of your spa water.

PPM – Abbreviation for 'parts per million', the unit of measurement used in chemical testing which indicates the parts by weight in relation to one million parts by weight of water.

Protection Plus – A high powered metal sequestering agent used to keep mineral and metal deposits from forming on the shell. This product also adds a clarifier to screen the water of fine particulate unable to be caught by your filter.

R-Value – The measure of resistance to the flow of heat through a given thickness of a material (as insulation) with higher numbers indicating better insulating properties. In spa covers, a higher R-Value will save energy costs.

Safety Cover – A spa cover which meets strict ASTM standards for strength, construction, and anchoring, which reduces the drowning risk to small children. (Our covers are built to the ASTM safety standard). Not all hot tub covers on the market meet this important rating.

Sanitize – Means to kill all bacteria, algae, disease-causing organisms, and any other uninvited guests. One important job of any sanitizer is to provide a sanitizer residual; a level of sanitizer that hangs around (resides) in the water for some period of time to destroy any living organisms as they are introduced into the hot tub.

Scale – Forms on surfaces in contact with water when the calcium hardness, pH or total alkalinity levels are too high. Scale may appear as gray, white or dark streaks. It may also appear as a hard crust around the tile.

Shock – This word is used two ways in the pool and spa industry. As a noun it loosely describes the products used in shocking, such as hypochlorites, potassium permonysulfate or hydrogen peroxide. As a verb it describes the act of bringing the sanitizer level up so high that breakpoint chlorination is reached. When breakpoint is reached, a "shock" or perhaps a "lightning bolt" is a better analogy, is sent through the water, tearing apart molecules and slashing through cell walls.

Skimmer – A surface skimmer is a plumbing fitting set at water level, containing a weir mechanism and a debris basket. The skimmer is part of the suction side circulation system.

Skimmer Basket – Beneath the lid, the basket strains debris, as the first line of defense in filtering the water.

Spa Cover Conditioner – This product is specially formulated for vinyl spa covers. It will not dry out vinyl as automobile cleaners might. "Spa Cover Conditioner" will deep clean your cover while providing a bright, durable shine that will inhibit harmful UV rays.

Spa Fragrance – Special perfumes designed to enhance the hot tub experience and overcome chemical odors. These are designed for spas, and will not alter water balance or clog filters.

Stain and Scale – A metal sequestering agent used to keep mineral and metal deposits from forming on spa equipment.

Test Strips – Easy-to-use dip strips for measuring the pH, total alkalinity and sanitizer levels of spa water. Strips are also available for testing water hardness and Total Dissolved Solid levels.

ThermoGloss – This product is an acrylic gloss that provides a tough coating to protect your shell from scratches and scale build up. Designed for hot water environments, this product will not break down and cause problems in spa water.

ThermOzone – The only automatic ozonator with an EPA approved, built-in de-gasser tank that eliminates all offensive and potentially dangerous gases. This makes it safe to use while you're in your hot tub, and it is the only one recommended for indoor hot tub installations. ThermOzone produces eight times more ozone per hour than other ozonators, and it minimizes the creation of excess "off-gas" by using a Mixing Degas Vessel (MDV) to safely mix ozone into the water. Ozone only disinfects water while it is in contact with it, and the MDV provides an area where the ozone contacts the water for a longer period of time, making it more effective. If any excess off-gas is produced, ThermOzone eliminates it with a charcoal/carbon canister, safely converting the off-gas back into oxygen.

Total Alkalinity – The ability of the pool/spa water to resist changes in pH. The "buffering" capacity of the water. Additions of Sodium Bicarbonate will increase the levels, expressed in ppm. Additions of Sodium Bisulfate decrease Alkalinity levels. Acceptable measurements range from 80 – 120.

Total Dissolved Solids (TDS) – Is a measurement of the total amount of minerals, residue, and other particles that cannot be oxidized from the water and remain. When water evaporates, dissolved salts, minerals, etc. are left behind. These levels of dissolved solids increase in the spa as water evaporates over time. Tubs that have a high TDS level means that the water is over saturated and cannot receive any more chemicals. TDS should never be higher than 3000 ppm. The water needs to be drained at this point, and the tub cleaned and refilled.

Water Hardness – A characteristic of natural water due to the presence of dissolved calcium and magnesium; water hardness is responsible for most scale formations. Hardness is usually expressed in parts per million. The ideal range for Water Hardness is 100-250 ppm, though 250- 400 is acceptable. Soft water in spa will cause instant foaming and staining of water and shell. Water with low hardness is highly corrosive, causing significant damage to any metal. Water will

dissolve other minerals rapidly until it gets to saturation point. Large, coarse soft-water scale will form as a result. Hardness levels can be brought up by using Liquid Calcium. Water that has hardness that is too high can cause excessive scale formation. Water may also become cloudy or slightly discolored hardness levels can only be reduced by using an in-home water treatment system or removing water from the tub, and adding distilled water.

Weir - The device in a skimmer that controls the amount of water coming into the skimmer, and keeps debris inside, otherwise known as a "flapper-gate."

Winterizing - The procedure of preparing spas for freezing weather, in cold climates when the spa will not be operated. May include draining and cleaning the shell, and opening connections to release water from plumbing and heaters. Most people continue to heat and operate their spas in winter; for them, winterizing is not necessary if appropriate measures are taken to prevent freeze-up.