





The seven important aspects of spa maintenance

There are seven important aspects of spa maintenance that are essential in keeping your spa water safe, healthy and inviting, these are:

- Circulation and Filtration
- Oxidising

Testing

Cleaning

Water Balance

Draining and Refilling

Sanitising

Before covering each of the above important aspects we should look at what you need to do after first filling your spa with fresh water.

INITIAL FILL WITH FRESH WATER

Before leaving the factory, portable spas will have been tested for leaks. This involves filling the spa with water and running it for a while before emptying and packing it ready for shipping. Although the spa has been emptied, there will still be some water left in the pipework that will be there when the spa is delivered to you. It is possible that this residual of water could have grown harmful bacteria, including Legionella, so it is important that the spa is dosed with a high level of sanitiser immediately after it is first filled with fresh water and before the electric supply to the spa is switched on. The level of sanitiser dosed should be sufficient to achieve a level of 50mg/l, then circulated for a minimum of an hour (or 20mg/l and circulated for a minimum period of two hours) – see table opposite for guidance of quantities required. Once the sanitiser has been applied, leave the spa for 10 minutes then switch the electric supply on and run all pumps for a period of 15-20 minutes, opening all air

control valves. If your spa is fitted with them, operate all diverter valves to ensure that the water flows through all the spa jets and pipework. Finally, if your spa has an air blower fitted switch it on and let it run for a few minutes. After the one or two hour time period has passed you can reduce the sanitiser level to the normal operating levels, see pages 7 - 8.

Please note that the above also applies if you drain the spa and leave it empty for a period of time before refilling and re-commissioning it.

	Spa volumes		Stabilised Chlorine Granules to introduce a level of		Bromine Granules to introduce a level of	
	Litres	Gallons	20mg/l*	50mg/l*	20mg/l*	50mg/l*
ı	500	110	18g	45g	27g	67g
	1,000	220	36g	90g	54g	134g
	1,500	330	55g	135g	80g	200g

^{*} ppm = mg/l

Circulation & filtration

The equipment supplied with spas varies from make-to-make but all spas have at least one pump and a filtration system. It is the pump that creates the flow (circulation) of water to and from the spa and built into the circulation will be the filter. As the water circulates through the filter, particles are removed and collected within the filter media. The combination of removal of particles by the filter and good chemical water treatment is essential to keep your spa water clear, clean and healthy.

Please be guided by the instructions within the manufactures manual supplied with your spa as to the ideal circulation running times for your particular make of spa. It is likely that the circulation of your spa will be taken care of automatically by the spa management systems.

Most spas are supplied with a cartridge filter, which will contain a cartridge element that removes particles from the water. The cartridge element will also collect oils and greases and over time the collection and retention of debris will begin to impair the filter efficiency and reduce the speed at which the water flows around the circulation system. It is therefore necessary to chemically clean cartridge elements typically every 4 – 6 weeks using either AquaSPArkle Immerse or Cartridge Cleaner, see page 10 for further information.



Testing your spa water

Regularly testing your spa water is an essential part of spa maintenance, as without testing you will have no idea what the chlorine or bromine, pH, total alkalinity and calcium hardness levels are. For the testing of domestic spas, test strips or pooltesters are normally used. It is important that you test your spa water regularly, ideally every day.

BLUE HORIZONS TEST STRIPS

There is a choice of two different Blue Horizons strips:

- 3-Way Test Strips that enable you to test free chlorine or bromine, pH & total alkalinity
- 5-Way Test Strips that enable you to test free chlorine or bromine, total chlorine, pH, total alkalinity & calcium hardness

Although not as accurate as using a test kit, test strips are very quick and easy to use and take the 'chore' out of testing your spa water. Simply take a test strip from the pot, dip it into your spa, swirl it round a few

times, hold level (being careful not to shake off the excess water), wait for the prescribed length of time and then compare the colour of the pads with the colours printed on the test strip pot.



POOLTESTERS

Pooltesters are test kits that use reagent tablets to determine the chlorine, bromine or pH levels. Take the pooltester to the spa and turn it upside down, lower it into the spa water to about an elbows depth and then turn it the correct way up so that it fills up with water. Once full of water put the kit on a level surface and add a Phenol Red tablet to test the pH level and a DPD No.1 tablet to check the free chlorine/bromine level.



For more comprehensive water testing, including total dissolved solids and metals, take a spa water sample to your AquaSPArkle Dealer who will be pleased to assist you.







Balance your spa water

Establishing and maintaining the correct water balance is important for a number of reasons:

- · Chemical efficiency
- Bather comfort
- · Protection of pool and plantroom equipment
- · Water quality and appearance
- Makes it easier and less time consuming to look after the spa

Some people believe that keeping the right pH is all that is needed to achieve the correct water balance; this isn't the case and although pH is important there are other factors that also need to be considered. In the table below we have illustrated the properties that make up water balance and the ideal levels that should be maintained.



Ideal Spa Water Levels

Calcium Hardness	Total Alkalinity	рН	Total Dissolved Solids
100 - 200mg/l	80 - 150mg/l	7.2 - 7.6	Less than 1500mg/l

CALCIUM HARDNESS

Calcium hardness (or total hardness) is the measure of how hard or soft the water is. The level will vary depending on where your water supply comes from, for example in some parts of Scotland the water is very soft and in parts of Kent the water can be very hard. The hardness depends upon the amount of mineral salts (mainly calcium) that are dissolved in the water and the more salts there are the harder the water is.

Problems Associated with incorrect Calcium Hardness Levels

naidiless reveis				
Low calcium Hardness less than 100mg/l	High calcium Hardness more than 200mg/l			
 Corrosive water Etching of surfaces Staining Foam	 Scale formation Filter calcification Cloudy water			

If the calcium hardness of your spa water is less than 100mg/l then it should be increased using AquaSPArkle Spa Hardness Plus, details of dose rates can be found opposite:

AquaSPArkle Spa Hardness Plus Dose Rate Table

Spa volumes		To increase Calcium Hardness by		
Litres	Gallons	10mg/l	25mg/l	50mg/l
500	110	7 g	19g	38g
1,000	220	15g	38g	76g
1,500	330	23g	57 g	114g

If the calcium hardness of your spa water is greater than 200mg/l then AquaSPArkle Spa ScaleAway should be used to help prevent scale deposits within the filter, heater, pipework and on spa surfaces.

AquaSPArkle Spa ScaleAway Dose Rate Table

	Spa volumes		Dose	Rates
ľ	Litres	Gallons	Initial	Weekly
	500	110	12ml	7ml
	1,000	220	25ml	15ml
	1,500	330	38ml	23ml

Balance your spa water

TOTAL ALKALINITY

Total alkalinity is a measurement of the waters ability to resist pH change. If the total alkalinity is low then the pH can fluctuate making it difficult to control and maintain at the ideal level. If the total alkalinity is high then the pH can be difficult to change and will keep rising. A high total alkalinity can also lead to the formation of a bicarbonate scale on spa surfaces, within pipework and support equipment.

If the total alkalinity of your spa water is below 80mg/l it should be increased using AquaSPArkle Spa T.A. Plus, the table below indicates the dosage quantities required:

AquaSPArkle Spa TA Plus Dose Rate Table

Spa volumes		To increase Total Alkalinity by		
Litres	Gallons	10mg/l	25mg/l	50mg/l
500	110	9g	22g	45g
1,000	220	18g	45g	90g
1,500	330	27g	68g	135g

If the total alkalinity of your spa water is above 150mg/l then AquaSPArkle Spa pH Minus can be used to lower it. When applying Spa pH Minus to lower total alkalinity levels, the product should be predissolved and then 'slug' dosed (dumped) into one area of the spa. The dose rates are indicated below:

AquaSPArkle Spa pH Minus Dose Rate Table (for total alkalinity reduction)

Spa vo	olumes	To red	uce Total Alkali	nity by
Litres	Gallons	10mg/l	25mg/l	50mg/l
500	110	12g	30g	60g
1,000	220	24g	60g	120g
1,500	330	36g	90g	180g

PH

pH is a measure of how acidic or how alkaline (not to be confused with total alkalinity) the water is.



As you can see from the above diagram the pH scale is 0 to 14, with 0 being very acidic and 14 very alkaline. pH 7 is neutral and for spas the pH should be maintained between 7.2 and 7.6, this being slightly alkaline protects the spa and support equipment from aggressive, corrosive water and is comfortable for bathers.

Problems Associated with incorrect pH Levels

pH below 7.2	pH above 7.6
Corrosive waterEtching of surfaces	Scale formation Filter calcification
 Staining 	Cloudy water

StainingSkin & eve irritation

Damage to plantroom equipment

Drying to skinReduced effectiveness of chlorine

If the pH of your spa water is either low or high it should be corrected using AquaSPArkle Spa pH Plus or AquaSPArkle Spa pH Minus. The following table will help you calculate the dose rate to suit your spa:

AquaSPArkle Spa pH Plus Dose Rate Table (to increase pH)

Spa volumes		D	ose Rates
Litres	Gallons		
500	110	5 g	Re-check pH after
1,000	220	11g	a few hours &
1,500	330	17g	repeat dose

AquaSPArkle Spa pH Minus Dose Rate Table (to lower pH)

Spa volumes		D	ose Rates
Litres	Gallons		
500	110	5g	Re-check pH after
1,000	220	11g	24 hours &
1,500	330	17g	repeat dose

TOTAL DISSOLVED SOLIDS (T.D.S.)

T.D.S is, as the name suggests, the sum of everything that is dissolved in the water including minerals, chemicals and debris. The maximum recommended T.D.S level is 1,500mg/l. When the level rises above this it is time to empty and refill the spa.

High T.D.S. levels lead to:

- Corrosion
- Poor chemical efficiency
- Increased chemical consumption
- Dull looking water
- · Salty tasting water

Sanitise your spa water

The reason that sanitisers are used in spas is to ensure that the water is healthy by preventing and killing bacteria. This is achieved by continuously and consistently maintaining a level of sanitiser (disinfectant) in the water with either chlorine or bromine.

CHLORINE

Chlorine is a commonly used chemical to achieve satisfactory bacteriological and chemical purity in spas. It must be present in the 'free' form to kill bacteria and oxidise organic matter derived from bathers. Provided the water is balanced, see pages 5 - 6, chlorine levels of between 3.0 to 5.0mg/l are sufficient to maintain healthy, clean water. A well managed chlorine treated spa will have no odour and levels of chloramines (combined chlorine) of less than 0.5mg/l.

Combined chlorine is created as a result of a reaction between free chlorine and organic matter and is a mixture of Monochloramine, Dichloramine and Nitrogen Trichloride. The latter is mostly produced when the water is not being treated adequately and gives rise to the 'chlorine' odour.

AquaSPArkle makes it easy for you to maintain your sanitiser level by giving you a choice of products to suit your spa situation, preferred dosing method and budget.



AOUASPARKLE SPA STABILISED CHLORINE GRANULES

A traditional, granular chlorine donor that is popular with many spa owners as it gives dose rate flexibility. These granules are rapid dissolving making predissolving and application easy. The granules have a pH value of about 6.0 – 7.0, which is fairly close to the ideal spa water pH level and so will have little effect on the pH level of your spa water.

AguaSPArkle Spa Stabilised Chlorine Granules Dose Rate Table

Spa volumes		Stabilised Chlorine Granules to increase level by		
Litres	Gallons	1mg/l	2mg/l	3mg/l
500	110	1g	2g	3g
1,000	220	2g	4g	6g
1,500	330	3 g	6g	9g

AOUASPARKLE SPA MULTIFUNCTIONAL 20G CHLORINE TABLETS

AguaSPArkle Multifunctional Chlorine Tablets should be dosed via a floating dispenser. When set up correctly your floating dispenser will dispense the correct amount of chlorine into the spa to maintain the ideal level between 3.0 to 5.0mg/l and all you need to do is top up the floating dispenser with new tablets as and when required. This makes maintaining the sanitiser level in your spa very straightforward. When using a floating dispenser remember to remove it from the spa and place it on a non-bleachable surface while people are bathing.

Please note Spa Multifunctional Chlorine Tablets are designed to maintain chlorine levels (as they are slow dissolving), so before using them the correct chlorine level should be established using AquaSPArkle Spa Stabilised Chlorine Granules.

Sanitise your spa water

BROMINE

Bromine is similar to chlorine in its effectiveness as a sanitiser but there are some important differences that make it an ideal product for using in a spa:

- Bromine tablets should be dosed into the spa via a floating dispenser.
- Bromine, like chlorine, combines with organic compounds to form bromamines, but unlike chloramines, bromamines cause little or no eye, skin and nasal irritation. Also there is not the pungent smell sometimes associated with certain types of chloramines.
- Bromine retains better levels of efficiency over a wider pH band than chlorine, see chart below, which makes it ideal for spas as the pH can fluctuate a fair amount.

AQUASPARKLE SPA BROMINE GRANULES

AquaSPArkle Spa Bromine Granules are a highly effective sanitiser formulated to kill and prevent bacteria and algae growth in a spa. Being a granular product it is easy to vary the dose rate to suit requirements. These granules have a fairly neutral pH so won't upset the water balance.

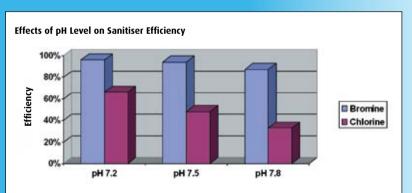
AquaSPArkle Spa Bromine Granules Dose Rate Table

Spa v	olumes	Bromine Gr	anules to incre	ase level by
Litres	Gallons	1mg/l	3mg/l	5mg/l
500	110	1g	4g	6g
1,000	220	3g	9g	13g
1,500	330	4g	13g	19g

AQUASPARKLE SPA BROMINE TABLETS

AquaSPArkle Spa Bromine Tablets should be dosed via a floating dispenser. When set up correctly your floating dispenser will dispense the correct amount of bromine into the spa to maintain the ideal level between 3.0 to 5.0mg/l and all you need to do is top up with new tablets as and when required. This makes maintaining the sanitiser level in your spa very straightforward. When using a floating dispenser remember to remove it from the spa and place it on a non-bleachable surface while people are bathing.

Please note Spa Bromine Tablets are designed to maintain bromine levels (as they are slow dissolving), so before using them the correct bromine level should be established using Spa Bromine Granules.





NB. For non halogen based systems ask separately for Aquablanc details.



Oxidise your spa water

Regularly oxidising spa water, ideally weekly, will pay dividends in the prevention of water problems. Bather wastes such as perspiration, urine and cosmetics can build up in spa water providing nutrients for bacteria and algae, a weekly oxidising treatment or shock dose will destroy these wastes and help maintain comfortable bathing conditions.

AQUASPARKLE SPA FUSION

The Ultimate product for regular oxidisation, Spa Fusion is a blended product that not only destroys bather wastes and eliminates chloramines but also clarifies the spa water to help achieve crystal clear water that looks great and is comfortable for bathers. Supplied in pre-measured sachets, Spa Fusion is the easiest oxidiser to apply as you simply cut the corner of the sachet with scissors and broadcast the contents over the water surface. No pre-dissolving is required. One sachet is sufficient to treat spas up to 1,500 litres.

AQUASPARKLE SPA NON CHLORINE SHOCK GRANULES

A granular product that is ideal for the regular oxidation of spa water as it will destroy organic waste and chloramines without increasing the chlorine level. These granules can be used for chlorine or bromine treated spas.



AquaSPArkle Spa Non Chlorine Shock Dose Rate Table

Spa volumes		Weekly Dose
Litres	Gallons	
500	110	5g
1,000	220	11g
1,500	330	17g





Cleaning

Floating debris such as suntan lotion, cosmetics, grass and insects will collect on the water surface and spa sides providing a source of food for bacteria and algae. A weekly clean around the waterline using AquaSPArkle Spa Surface Cleaner will easily remove unsightly waterline deposits.

AOUASPARKLE SPA SURFACE CLEANER

Specially formulated for use in spas this cleaner is easy to apply using a brush, sponge or cloth. Before applying Surface Cleaner ensure the area to be cleaned is wet then dispense a little on to the brush, sponge or cloth and gently apply it to the waterline, leave for a couple of minutes and then rinse area with plenty of water. Rubber gloves must be worn when using this product. After draining and before refilling the spa, Surface Cleaner should be used to clean all internal spa surfaces.





The regular chemical cleaning of filter media (usually a cartridge element) will keep the filtration system working efficiently, help promote sparkling spa water that is easier to maintain and reduce chemical consumption.

AQUASPARKLE IMMERSE

Filter media (usually a cartridge element) should be chemically cleaned regularly. Immerse has been designed to remove the grease and oils. This convenient 100g sachet is the ideal product to clean filter cartridges. Add one Immerse sachet into a clean plastic bucket containing clean water and stir well. Hose the cartridge to remove any loose debris, and then soak it in the cleaning solution for at least 8 hours. Afte soaking the cartridge rinse it thoroughly with fresh water and if possible allow it to dry before returning it to the soa

AQUASPARKLE SPA CARTRIDGE CLEANER

his highly effective traditional cartridge cleaner is used in a similar way to Immerse (see opposite or product label for full letails). It can also be used to clean spa sand filters. Periodically, usually prior to draining and refilling your spa, it is advisable to purge the spa pipework of grease and grime that can build up over time. These pipework deposits can be an ideal breeding ground for bacteria if not chemically treated and removed.

AQUASPARKLE HOT TUB FLUSH

Hot Tub Flush has been especially formulated to remove build-up of soap & oil deposits in spa plumbing. This product should be used just prior to draining out your spa. Dose directly into the spa skimmer basket with the pumps running. Leave for a minimum of 12 hours then drain down and refill spa with fresh water.



Speciality treatments for your spa water

In addition to the water treatments that have already been covered there are a couple of other products that may be needed from time to time, or you can include them within your routine spa management to prevent problems.

CLARIFYING

Spa water can become cloudy for a number of reasons.

- · Incorrect water balance
- · Poor or insufficient filtration (filter needs cleaning)
- · Low levels of sanitiser
- · A build-up of bather wastes

AguaSPArkle Spa Sparkle will quickly restore water clarity, but before using it you should ensure that:

- 1. The water is correctly balanced see section on Balancing Your Spa Water
- 2. The circulation and filtration system are operating correctly and the filter is clean.
- 3. The sanitiser level is being maintained within the ideal range - see the Sanitise section

Once you are satisfied that the above conditions have been met then AquaSPArkle Spa Sparkle can help speed up the clarifying process.

AOUASPARKLE SPA SPARKLE

A clarifier in liquid form that can be used with all types of filtration systems. Spa Sparkle is added directly to the spa water with the pump running. Once applied it collects small particles and binds them together making larger particles that are much easier for the filter to remove. Regular small doses of this product are all that are required to keep spa water looking crystal clear.

AquaSPArkle Spa Sparkle Dose Rate Table

Spa volumes		Dose Rates	
Litres	Gallons	Initial	Weekly
500	110	25ml	12ml
1,000	220	50ml	25ml
1,500	330	75ml	38ml

DEALING WITH FOAM

From time-to-time it is likely that foam will form on the water surface this is usually caused by remnants of detergents left in bathing costumes after they have been washed. If possible it is always a good idea to encourage spa bathers to shower, with their costumes on, before using the spa as this will not only help in removing detergents but will also remove cosmetics and lotions from the body. If foam does appear on the water surface it can easily be destroyed by using AguaSPArkle Spa FoamAway.

AQUASPARKLE SPA FOAMAWAY

Used to prevent and destroy unsightly foam on the surface of spa water this fast acting product quickly breaks the foam down. It comes in a liquid form that can be added directly to the spa water.

AguaSPArkle Spa FoamAway Dose Rate Table

Spa volumes		Dose Rates		
Litres	Gallons	Initial	Weekly	
500	110	50ml	25ml	
1,000	220	100ml	50ml	
1,500	330	150ml	75ml	

AOUASPARKLE SPA PERFECT

AquaSPArkle Spa Perfect uses natural enzymes to prevent scum build up around the waterline and help reduce chemical odours. Spa Perfect also helps to prevent cartridge filters getting cloqued with grease and grime. It is compatible with all sanitisers currently in use and is 100% biodegradable. It comes in a liquid form that can be added directly to the spa water.



AguaSPArkle Spa Perfect Dose Rate Table

Spa volumes		Dose Rates		
Litres	Gallons	Waste Removal	Routine Dose	
500	110	80ml	40ml	
1,000	220	160ml	80ml	
1,500	330	240ml	120ml	





Draining & refilling

Although this is the last subject being covered within this guide it is an important part of any spa management programme.

Over time spa water can become 'stale' as it absorbs minerals, chemicals and other soluble materials that cause the total dissolved solids level (T.D.S.) to increase, see page 6. When the T.D.S. level reaches 1,500mg/l it is time to drain the water out of the spa and refill it with fresh new water. As a broad guide a spa will need draining and refilling every 3 – 4 months.

After draining and before refilling it is a good idea to clean all the spas internal surfaces with AquaSPArkle Spa Surface Cleaner and clean the cartridge element with AquaSPArkle Immerse or Spa Cartridge Cleaner

Remember, if the spa is going to be left empty for a period of time before being refilled it should be treated with a high dose of sanitiser before being switched back on, see page 2.

Enjoy your spa.

Safety

GENERAL SPA SAFETY

- Do not allow water temperatures to exceed 40°C (lower for children)
- · Never leave children unattended in the spa
- · Do not overload the spa
- Never use inappropriate electrical equipment in the spa or close to the spas edge
- · Never allow diving or jumping into the spa
- · Don't allow horseplay in or around the spa
- · Never allow glass objects in the spa
- · Do not drink alcoholic beverages before or during spa use
- · Always remove cover completely before using the spa

GENERAL CHEMICAL SAFETY

- · Always read the instruction label on chemical products
- $\boldsymbol{\cdot}$ Always adhere to the instructions printed on the product label
- Always handle chemicals in a well ventilated area, preferably outdoors
- · Always keep chemicals out of the reach of children
- · Always wash hands after handling chemicals
- · Always store chemicals in a cool, dry place
- · Always put the lids back on chemical containers
- · When pre-dissolving products always use a clean container
- when pre dissolving products always use a clean contains
- $\boldsymbol{\cdot}$ Never use chemicals that don't have an instruction label
- · Never mix chemicals
- · Never dose chemicals when there are bathers in the spa

Chemical hazards











Product Description (NH = Non Hazardous)

Spa Hardness Plus	~				
Spa T.A. Plus (NH)					
Spa pH Plus	~				
Spa pH Minus	/				
Spa ScaleAway	/				
AquaSPArkle Spa Sanitisers					
Stabilised Chlorine Granules			~		V
Multifunctional Chlorine Tablets			~	~	V
Bromine Granules			~		V
Spa Bromine Tablet		/	V		
AquaSPArkle Spa Oxidisers					
Spa Fusion Aqua Sachet			~		/
Spa Non Chlorine Shock		~		/	
AquaSPArkle Spa Specialitie	es				
Spa Surface Cleaner	~				
Immerse Aqua Sachet		/	~		
Spa Cartridge Cleaner		~			
Spa Sparkle (NH)					
Spa FoamAway (NH)					
Spa FoamAway (NH) Spa ScaleAway	V				
. , , ,	V V				
Spa Sparkle (NH)					

Problem solving chart

SYMPTOM Poor chemical efficiency/ Increased chemical consumption	CAUSE High TDS	REMEDY Consider if time to drain/refill
Too much chlorine	Overdose	Allow time to naturally dissipate or buy a chlorine reducer
pH hard to control	Alkalinity low	Seek advice on how to raise total alkalinity
Cannot maintain chlorine levels	Chlorine demand of water too high at start up, after holidays or due to excess contamination or neglect	Shock dose with double dose chlorine Repeat after 24 hours if necessary
Foaming water	Oils/detergents present	Use FoamAway
Cloudy water	Poor chemical controls or Inadequate filtration	Clean cartridges or consider if time to drain and refill. Retest water and add chemicals, if necessary
Rough Spa sides/edges	Scale formation	Ensure pH levels are correct and if scale persists use spa ScaleAway to stop calcium precipitating out of water
No colour change on test strip dip test	Too high chlorine leading to bleaching of indicator pads (over 15ppm chlorine)	Check expiry date on test strips. Wait for chlorine level to drop and re-test
Test results vary	Air bubbles can increase pH and reduce alkalinity temporarily	Test when system turned 'off' for true results
Waterline grease contamination	Detergents/oils/ greases present	Use Spa Perfect to eliminate contamination



Unit 2, The Park, Stoke Orchard, Bishops Cleeve, Gloucestershire. GL52 7RS

Technical Helpline: 0871 222 9084

Technical Support

This guide is quite comprehensive but if you require any further technical support, please contact us on number opposite-. Your AquaSPArkle Supplier:

