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**SPA CARE  
MADE SIMPLE**



**A PRACTICAL GUIDE TO MAINTAINING YOUR DOMESTIC SPA**  
TO BE READ IN CONJUNCTION WITH YOUR SPA MANUAL

# CONTENTS

FIND OUT THE WATER VOLUME . . . . .	2
FILL WATER . . . . .	2
REFILLING YOUR SPA . . . . .	3
TESTING YOUR SPA WATER . . . . .	4
WHICH SANITISER SHOULD I USE? . . . . .	7
WATER BALANCE . . . . .	8
TEMPERATURE . . . . .	8
RECOMMENDED ADDITIONS OF WATER TREATMENT PRODUCTS .	9
DOSAGE RATES FOR YOUR SPA . . . . .	10
SPECIALITY WATER TREATMENT PRODUCTS . . . . .	11
SOLVING WATER QUALITY PROBLEMS . . . . .	13



This booklet is intended as an independent guide to keeping your spa water in pristine condition. Maintaining healthy spa water is vital. Adjusting the water chemistry is a simple task that should not take more than a few minutes. There are no shortcuts. By maintaining good water quality you will prevent damage to your spa equipment. Simply follow the steps outlined in this booklet to ensure that using your spa is both a safe and pleasurable experience.

# FIND OUT THE WATER VOLUME OF YOUR SPA

Your spa supplier will be able to give you this information. Write it down in the space provided in the DOSAGE RATES FOR YOUR SPA section of this guide. (Page 10).

One gallon equals approximately four and a half litres. This booklet offers dosage rates in metric rather than imperial.

This information will enable you to determine the amount of each Water Treatment product required to accurately adjust your spa water chemistry.

## FILL WATER

If filling your spa with a garden hose, flush any water that has been lying in the hose to waste before filling the spa.

Before filling your spa it is a good idea to know the chemical composition of the fill water to be added. The 3 important parameters that you need to know about are **pH, Total Alkalinity and Calcium Hardness.**

Water varies greatly from area to area. Your spa supplier should be able to supply you with analysis of your tap water. Alternatively, contact your local Water Authority. The results will indicate if you are in a hard or soft water area. You will need to know if your tap water is hard or soft. **pH** and **Total Alkalinity** of your tap water is also important information. If you have difficulty in obtaining this information use the Test Kit provided with your spa to test your tap water.

If the result shows that the calcium hardness is below 100ppm (parts per million) you will need to increase the hardness every time that your spa is drained and re-filled. Your spa supplier should be able to supply you with the necessary spa water treatment product. A calcium hardness of 200ppm is ideal for spa water.

If the analysis shows that you have very hard water do not fill your spa with water that has been treated with a water softener, this will cause damage to the spa equipment. A spa with calcium hardness in excess of 300ppm needs to be regularly treated with Spa Stain and Scale Inhibitor, failure to do so will result in scale forming on your spa heater.

If the fill water analysis indicates that the pH is high (above 7.6) or the Total Alkalinity is high (above 160ppm) you will need to add pH reducer to your spa water.

To calculate the quantity of chemical that needs to be added you will need to know the following information:

**The quantity of water your spa holds** (preferably in litres)

**Both the pH and Total Alkalinity of your spa water**

**The desired pH and Total Alkalinity of your spa water** (see page 4)

As soon as you have obtained this information you will be able to accurately adjust the Water Balance of your newly filled spa. To determine which Water Treatment Product you require and how much you need to add you will need to refer to the DOSAGE RATES FOR YOUR SPA section of this guide (see page 10).

Your spa should be drained and re-filled at least once every 12 weeks. More often if the spa is heavily used.

## REFILLING YOUR SPA

As a general guide your spa should be drained and re-filled at least once every 12 weeks. The 12-week maximum is applicable to spas that are used by an average of two people per day. If the spa is used by an average of 4 people per day the spa should be drained every 6 weeks. When emptying your spa, always clean the filter cartridge before refilling. Very heavily used spas should be emptied more frequently. Flush out the stagnant water in the hose before filling your spa.





## TESTING YOUR SPA WATER

A well maintained spa will give you many hours of relaxation and enjoyment. To enable you to get the most from your spa you need to spend a short time testing the water chemistry and, if required, make the necessary adjustments. Your spa will need to be checked regularly for both Sanitiser and Water Balance. Ideally you should check your spa daily for pH and Sanitiser levels. Always check your spa before it is used, never use the spa if the sanitiser level is below its recommended level.

You should check for Total Alkalinity at least once a week and adjust if necessary. Calcium Hardness should also be checked once a month. Always keep a record of your test results. The back page of this guide has been designed as a record sheet.



### RECOMMENDED LEVELS FOR YOUR DOMESTIC SPA

	MINIMUM	OPTIMUM	MAXIMUM
FREE CHLORINE	2 PPM	3 PPM	5 PPM
COMBINED CHLORINE	0 PPM	0 PPM	1 PPM
BROMINE PPM	3 PPM	4 PPM	6 PPM
pH	7.2	7.4	7.6
TOTAL ALKALINITY	100 PPM	140 PPM	160 PPM
CALCIUM HARDNESS	100 PPM	200 PPM	400 PPM
TOTAL DISSOLVED SOLIDS	250 PPM	500 PPM	1000 PPM

**Chlorine or Bromine?** Either can be used to sanitise your spa water. Your spa supplier will be happy to advise you on the most suitable sanitiser for your particular spa. Further information regarding the relative merits of both chlorine and bromine are contained within this guide.

We do not recommend the use of liquid chlorine (sodium hypochlorite) for use in your spa.

Some spa manufacturers refer to ppm (parts per million) when referring to the quantity of chemicals in spa water, other manufacturers refer to mg/l (milligrams per litre). In spa water they mean the same thing (eg. 100ppm is identical to 100mg/l).

The two most widely used methods of testing are Test Strips and Test Kits containing tablet reagents:

**Test Strips** offer the simplest means of testing spa water and are becoming increasingly popular. The Test Strip can be submerged in the spa water directly, a test result can be obtained within 30 seconds. The most commonly used Spa Test Strips incorporate Free Chlorine/Bromine, pH and Total Alkalinity. Test Strips that also incorporate Calcium Hardness and Chlorine Stabiliser levels (cyanuric acid) are also available.

**Test Kits** that use tablets (DPD No1 and Phenol Red) are slightly more time consuming to use but offer an accurate means of testing your spa. Keep a note of your test results. The back page of this guide has been designed to allow you to keep accurate test results.





Your spa should be tested for both sanitiser (chlorine or bromine) and water balance every day. In addition to this the spa should always be tested before being used. The water should be chemically adjusted according to the results of the test. To ensure that the chemicals are thoroughly mixed with your spa water, always turn on the booster pump after adding any chemicals and before using the spa. Your spa water must be both sanitised and kept in balance even if it is not being used.

In addition to keeping your spa sanitised at all times, you should treat your spa with a specialised shock treatment on a weekly basis. **Spa Energize** contains a blend of oxidisers and a clarifier to revitalise your spa water. Use **Spa Energize** weekly and more frequently if your spa has been heavily used.





## WHICH SANITISER SHOULD I USE?

Ask your spa supplier for their recommendation. Some spa manufacturers endorse bromine, others prefer chlorine. Whatever system you use, it is essential that you maintain the recommended level in your spa at all times. Neglecting the spa sanitiser level when the spa is not being used can result in unsafe water and the build-up of Biofilm in the spa pipework.

**Bromine** is a popular choice. It is a relatively heavy and stable sanitiser that is well suited to hot water. It is effective at killing bacteria over a wide pH range. If bromine tablets are opted for, it is essential that they be dosed via a floating dispenser. Bromine Tablets are not suitable for placing in the spa skimmer.

If **Chlorine** is preferred, we would recommend that Stabilised Chlorine Granules be used. This product can be added directly into the spa water. We do not recommend the use of Shock Granules in spas. As an alternative to Stabilised Chlorine Granules, slow dissolving Chlorine Tablets can be used to sanitise your spa. If you choose to use Chlorine Tablets, they will need to be placed in a floating dispenser.

Whether you opt for Chlorine or Bromine, you should treat your spa water with **Energize** on a weekly basis.

**Always shower before using your spa.** By doing so you will reduce the amount of sanitiser needed to maintain good water quality.

Most modern spas now incorporate an **Ozone** generator to help maintain good water quality. Ozone should not be regarded as a replacement for a conventional sanitiser. It should be used in conjunction with either chlorine or bromine.





# WATER BALANCE

The pH and Total Alkalinity of your spa water is in a state of constant change. (The Total Alkalinity will probably drop over the first few days after re-filling.) Maintaining balanced water is essential. If water balance is neglected it will result in poor water conditions for relaxing in. The best way to add water treatment products is to add them “little and often” rather than slug dosing. When pouring a solution into your spa, make sure that the booster pump is on. To ensure that your spa water is “balanced” you need to control the following three chemical parameters:

## CALCIUM HARDNESS

If your tap water is soft, you will need to increase the hardness to approximately 200ppm each time that the spa is drained and refilled. Failure to do so will result in costly damage to your spa equipment. The addition of calcium chloride increases the calcium hardness of your spa water. The amount that you need to add is shown in the Water Treatment Table shown on page 10.

## TOTAL ALKALINITY

Total Alkalinity is the measure of alkaline salts in your spa water. The Total Alkalinity of hot, bubbling water can change dramatically within a couple of hours. It is not uncommon for the Alkalinity of a newly filled spa to drop by 50ppm within a couple of days. By controlling the Total Alkalinity of your spa you will prevent the pH of your spa water from fluctuating. Always ensure that the Alkalinity of your spa water is within the acceptable range before adjusting the pH. Trying to maintain a stable pH in your spa will prove difficult if the Total Alkalinity is either excessively high or low.

## pH

The pH of your spa water is the measure of how acid or alkaline the water is. pH is measured on a scale of 0 to 14. A pH of 7.0 is neutral. A test reading of below 7.0 indicates acidic water, a pH rising above 7.0 indicates an increasing degree of alkalinity. The optimum pH for spa water is between 7.2 and 7.6. Operating your spa outside this range is likely to present you with various problems; A low pH will result in skin irritation and corrosion of you spa heater. A high pH will prevent the sanitiser from working effectively and cause the spa heater to scale up. The pH of your spa should be checked every day. It should also always be checked (and adjusted if necessary) 15 minutes before the spa is used.

## TEMPERATURE

Your spa needs to be run at a temperature that you find comfortable. Try not to run your spa at too high a temperature. High temperature can cause Water Balance and other problems. 37°C is typical for a spa. Certainly your spa should never be run at a temperature above 40°C (104°F).

## RECOMMENDED ADDITIONS OF SPA WATER TREATMENT PRODUCTS

The water treatment products that you will need to add to your spa are highly concentrated. Never mix chemicals together. Some chemicals, when mixed, can cause poisonous gases or even explosions.

Before adding any spa treatment products to your spa always read the instructions on the back of the container.

Stabilised chlorine granules can be sprinkled directly into your spa. All other granular products shown in the table opposite need to be pre-dissolved in a plastic bucket filled with water from your spa. Always add chemicals to water, not water to chemicals. Always rinse the bucket after use.

Only when the contents have fully dissolved should they be added to your spa.

Never add more than one water treatment product to your spa at the same time.

When adding any Water Treatment Product to your spa ensure that your spa water is being circulated.





## DOSAGE RATES FOR YOUR SPA

ALL DOSAGE RATES ARE PER 1000 LITRES OF SPA WATER

**MY SPA CONTAINS ..... LITRES OF WATER**

TO ADJUST SPA WATER	PRODUCT TO BE ADDED	QUANTITY PER 1000 LITRES
INCREASE FREE CHLORINE BY 3PPM	STABILISED CHLORINE GRANULES	6g
INCREASE HARDNESS BY 10PPM	CALCIUM CHLORIDE (HARDNESS PLUS)	15g
INCREASE TOTAL ALKALINITY BY 10PPM	SODIUM BICARBONATE (T.A. PLUS)	16g
REDUCE TOTAL ALKALINITY BY 10PPM	SODIUM BISULPHATE (pH MINUS)	20g
INCREASE pH FROM 7.0 TO 7.4	SODIUM CARBONATE (pH PLUS)	25g
REDUCE pH FROM 7.8 TO 7.4	SODIUM BISULPHATE (pH MINUS)	25g

As a general guide, a heaped teaspoon holds approximately 7g of granular product. After adding the appropriate water treatment product to your spa wait 15 minutes. Re-test your spa water and adjust if necessary.

# SPECIALITY WATER TREATMENT PRODUCTS FOR YOUR SPA

So far this guide has dealt with the importance of disinfection and water balance of your spa. To ensure that your spa water is in pristine condition there are several other aspects of spa water treatment that you need to consider.

## SHOCK TREATMENT

Occasionally your spa water will need to be shock treated. This should be done weekly, or more often if your spa has been heavily used. The traditional recommendation for shock treating your spa is to “Superchlorinate” your spa water to 10ppm of chlorine. Recent advances in spa products have seen the introduction of a blended shock treatment formulated to shock treat your spa without massively increasing the chlorine level. **Spa Energize** is supplied in sachets. The weekly addition of **Energize** will re-vitalise and clarify your spa water.

## STAIN AND SCALE PREVENTION

The water that you use to fill your spa will contain both limescale and metal salts. To prevent both staining and scaling of your spa it is a good idea to add a Spa Stain and Scale Inhibitor whenever you re-fill your spa. This is particularly important if the water that you use to fill your spa is classed as “hard water”.

## CLEANING YOUR SPA CARTRIDGE

It is essential that you clean your spa filter cartridge at least once every two weeks. More often if the spa is heavily used. Remove your spa cartridge and place in a solution of Spa Cartridge Cleaner overnight. Rinse the cartridge thoroughly and allow it to dry. When the cartridge is completely dry, clean with a soft brush before replacing.

It is worth considering purchasing a spare spa cartridge. This will enable you to clean your Spa cartridge without interrupting the spa filtration cycle.

## REDUCING THE FOAMING

Your spa water is likely to foam when the air blower is used. Using a spa anti-foaming agent will reduce foaming. Excessive foaming is often a sign that your spa water contains a high level of body oil etc. If your spa continues to foam after adding an Anti-Foaming agent, it is good practice to drain and re-fill your spa.



## IMPROVING THE CLARITY OF YOUR SPA WATER

Your spa water is likely to become cloudy from time to time. Increasing the level of sanitiser and adjusting water balance can usually solve this problem. The regular use of a Spa Clarifier will improve the efficiency of your spa's cartridge filter and improve water clarity. If the clarity of your spa water fails to improve after adding a liquid clarifier, treat your spa with **Spa Energize**.

## CLEANING YOUR SPA

A tide mark can sometimes build up on the water level of your spa. To avoid spa cleaners from running into the spa water lower the spa water level by several inches before applying the solution. Use a waterline cleaner that has been specifically designed for your spa. Both liquid and gel formulations are available; the gel cleaners have the advantage of being less likely to run into the spa water. The use of a household cleaner will cause your spa water to foam.

## SPA FRAGRANCES

Specially formulated fragrances are available for your spa. A wide variety of fragrances are available, Jasmine and Monoi are popular choices. As an alternative to liquid fragrances, "spa beads" may also be used.



# SOLVING WATER QUALITY PROBLEMS IN YOUR SPA

## CHLORINE OR BROMINE ODOUR

The two most likely causes of odour are chlorine overdose and high levels of combined chlorine. Whilst the remedy for both problems is identical (empty your spa and re-fill), it is important to identify the cause of the odour to prevent it happening again.

### (A) CHLORINE OVERDOSE

The sanitiser that you use to disinfect your spa is highly concentrated. Take care not to overdose your spa water. The test kit that you use to test your spa sanitiser is only accurate up to approximately 10ppm of sanitiser. *If your spa has an excessive chlorine or bromine level your test kit is likely to show a reading of zero!* This misleading test reading is known as “bleaching out.” If your test kit reads zero but your spa has a strong odour of disinfectant, you need to carry out a “dilution test” to determine if your spa has too much or not enough sanitiser:

#### Carrying out a dilution test on your spa water

- (1) Take a clean 1litre jug and add 100ml of water taken from your spa
- (2) Fill the rest of the jug with tap water
- (3) Test the water in the jug as you would test your spa water
- (4) If you obtain a reading on your test kit that indicates that there is chlorine present, your spa water has an excessive level of sanitiser
- (5) Drain a substantial proportion of your spa water and refill with fresh water
- (6) Test for the level of chlorine and adjust accordingly

### (B) COMBINED CHLORINE

When using your spa you introduce organic matter (perspiration etc.) to the water. A sanitiser (chlorine or bromine) is used to combat the effects of the micro-organisms in your spa. Your spa sanitiser reacts with these impurities to form combined chlorine (or combined bromine if you are treating your spa with bromine). Your Spa Test Kit should be able to give you readings for both free chlorine and combined chlorine. If the combined chlorine residual in your spa exceeds 1ppm your spa water will take on a “chlorine odour”. The best method of reducing combined chlorine in your spa is to treat the water regularly with **Spa Energize**. If the problem persists you should drain your spa and re-fill with fresh water.

## FOAMING

Your spa water is likely to foam from time to time, particularly when the air blower is used.

Excessive foaming is usually the result of a build up of body oils or soap in your spa. Never use household detergents to clean your spa surrounds. Encourage spa users to shower before using your spa.

Cleaning your spa filter cartridge regularly will minimise foaming.

The use of a Spa Anti- Foaming agent will reduce the problem. If the foam persists it is a sign that your spa water needs to be changed.

## CLOUDY WATER

Your spa water can become cloudy for several reasons. To remedy the problem you need to carry out the following procedures

- (1) The most likely cause of cloudy water is a low level of sanitiser, next likely is high pH or high Total Alkalinity. Carry out a water test on your spa. If the sanitiser is low, or the pH or Total Alkalinity is high they need to be corrected (refer to the Recommended Levels and Dosage Rates sections of this guide). The addition of **Spa Energize** should also restore the clarity of your spa water.
- (2) Check that your spa filter cartridge is clean. If not, it needs to be cleaned with a cleaning agent that has been designed specifically for spa cartridges.
- (3) Add a Spa Clarifier to improve the efficiency of your spa filter.



The contents of this guide are offered in good faith. They are based on information available at the time of publication. Plastica UK Ltd cannot be held responsible for errors caused by the use of information provided by this document.

**TEST RESULTS**

DATE

WATER TEMP

CHLORINE OR BROMINE LEVEL

pH

TOTAL ALKALINITY

CALCIUM HARDNESS

APPEARANCE  
GOOD/  
AVERAGE/  
CLOUDY

ENERGIZE ADDED

FILTER CARTRIDGE CLEANED  
Y/N

SPA DRAINED/ REFILLED  
Y/N

TREATMENT CARRIED OUT

EXTRA COMMENTS

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