WATER BALANCE

POOLS & SPAS

Balanced water causes no damage to pool surfaces and equipment.
Unbalanced water can cause:

1. Corrosion or etching of pool & equipment surface or
2. Scale formation on all surfaces.

There are three significant water balance parameters.

1. pH – which is a measure of the ACIDITY or ALKALINITY of water. It is a scale of 1-14. 1-7 water is acidic, 7 water is neutral, 7-14 water is alkaline or 'basic'. pH should be kept in the 7.2-7.8 range.

2. Calcium Hardness – pools containing too much calcium may scale surfaces but pool water deprived of calcium, becomes aggressive and etches surfaces. Calcium Hardness should be kept in the 200-400 range.

3. Total Alkalinity – this is the ability of water to resist changes in pH i.e. it 'buffers' water from wild pH swings. Sodium Bicarbonate is generally used as a buffering agent. Total Alkalinity should be kept in the 80-150 range.

Spa water chemistry differs from Pools in two ways:

1. Temperature
   - greater tendency to form scale
   - evaporation increases solids
   - some pathogenic bacteria thrive
   - more body organics – oils, perspirates
   - faster chemical reactions

2. Volume
   - high filtration rates (25min)
   - high bather loads
   - chemical dosage sensitivity
   - lower sanitiser reserves
   - pH fluctuations

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SANITISING SPAS

1. Chlorine

   - Calcium Hypochlorite pH 11.0 ☐
   - Trichlor Tablets pH 2.8 ☐
   - Bleach pH 14 ☐
   - Sodium Dichlor (Spa Chlor) pH 6.7 ☐

   Spa Chlor is the most favoured chlorine sanitiser for spas because of it's near neutral pH. The problem with chlorine in spas in the formation of CHLORAMINE, which give a strong odour and eye and throat irritation.

2. Bromine - has three advantages over chlorine:

   - It is effective over a wider pH range
   - BROMOMINE formation is not negative as they are good sanitisers and have no odour/irritation.
   - It can be used in floater or feeder systems.

   The disadvantage of bromine is its low pH (4.8) but good water balance will counteract this.

3. H_2OK/O_2 SHOCK system – provides a safe, simple convenient treatment that successfully fights bacteria and algae that thrive in hot water. It is NON TOXIC and NON ALLERGENIC.

4. Ozone – requires an expensive generator.

SHOCK DOSING

Regular shock dosing should be applied to all the above sanitising systems. The two most commonly used products are:

- Spa Chlor – a chlorine source
- O_2 shock – an oxygen source

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