PoolSystems

pool • spa • lifestyle™

clearchem

CATALOGUE

EST. 2020

QUALITY
SERVICE
GUARANTEED

clearchem

granular pool chlorine

Active Constituent

- 700g/kg present as Calcium Hypochlorite

Features & Benefits

- Low residue, high quality granular non-stabilised pool sanitiser
- High strength and therefore low dosage
- Fast acting
- Added calcium protects the surface of pebble and concrete pools
- Nil effect on isocyanurate levels
- Exact dosage easily obtained by hand dosing
- Can be used for daily chlorination or shock treatment

Application

- Mix in a bucket first then broadcast over entire pool surface

Dosage

- Stabilised Pools: daily dose of 35gms per 10,000 litres
- Unstabilised Pools: daily dose of 70gms per 10,000 litres
- Dosage rate are only a guide

Available Sizes

• 10kg Rigid Pack	WP-CC-GC-10K
• 40kg Drum	WP-CC-GC-40K

SANITISERS

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premium granular chlorine

Active Constituent

- 810g/kg Trichloroisocyanuric Acid
- 100g/kg Sodium Tetraborate Pentahydrate

Features & Benefits

- High strength sanitiser
- Enhances water quality and softens water
- Easy application via skimmer box
- Low pH promotes sanitiser efficiency
- Cyanuric acid increases longevity of available sanitiser

Application

- Product should be applied directly to the skimmer whilst pump is running

Dosage

- Initial start-up dose is 100 - 170gms per 10,000 litres
- Then apply a daily dose of 20 gms per 10,000 litres
- Dosage rates indicated are only a guide

Available Sizes

- 1kg Rigid Pack WP-CC-PC-1K
- 2kg Rigid Pack WP-CC-PC-2K
- 10kg Rigid Pack WP-CC-PC-10K
- 25kg Rigid Pack WP-CC-PC-25K

SANITISERS

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stabilised pool chlorine

Active Constituent

- 560g/kg Sodium Dichloroisocyanurate

Features & Benefits

- Contains Isocyanurate Acid
- Superior quality formulation
- Instantly soluble
- Leaves no residue ensuring crystal clear water
- Minimal effect on pH of pool water
- Can be used for daily chlorination or shock treatment
- Compatible with all sanitation systems including ionisers and salt pools
- Classified as Non-Dangerous goods for transport and storage purposes

Application

- Dissolve granules in water prior to use and add directly to water

Dosage

- Initial start-up dose is 100 - 170gms per 10,000 litres
- Then apply a daily dose of 25 - 30 gms per 10,000 litres
- Dosage rate are only a guide

Available Sizes

- 2kg Rigid Pack WP-CC-SC-2K
- 4kg Rigid Pack WP-CC-SC-4K
- 10kg Rigid Pack WP-CC-SC-10K
- 25kg Rigid Pack WP-CC-SC-25K

SANITISERS

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stabilised chlorine tabs

Active Constituent

- 900g/Kg available chlorine (Cl) present as trichloroisocyanuric acid

Features & Benefits

- 200gm tablet
- High strength formulation for ultra efficient sanitation
- Contains isocyanurate acid
- Keeps pH low for more efficient chlorine action
- Slow dissolving and long lasting
- Ideal for vacation maintenance or boosting salt chlorination.
- No requirement for daily dosing
- No residue so ensures water clarity
- Reduces demand for both cyanuric and hydrochloric acid

Application

- Place tablet in a floati

Dosage

- One tablet per 20,000 litres
- Dosage rates indicated are only a guide

Available Sizes

- 2kg Rigid Pack WP-CC-ST-2K
- 10kg Rigid Pack WP-CC-ST-10K
- 25kg Rigid Pack WP-CC-ST-25K

SANITISERS

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alkalinity increaser

Active Constituent

- 1000g/kg Sodium Hydrogen Carbonate

Features & Benefits

- Sodium Bicarb & Tetraborate blend (unique to Clearchem)
- Raises Total Alkalinity & pH
- Contains additional buffering capabilities
- Contributes to softening of water
- Enhances swimmer comfort
- Classified as Non-Dangerous goods for transport and storage purposes

Application

- Pour directly into water prior to use or mix in a bucket of water as per label instructions

Dosage

- 200gm will raise Total Alkalinity by 10ppm per 10,000 Litres
- Dosage Rates indicated are only a guide

Available Sizes

- 2kg Flexi Pack WP-CC-AI-2K
- 4kg Flexi Pack WP-CC-AI-4K
- 8kg Flexi Pack WP-CC-AI-8K
- 25kg Bag WP-CC-AI-25K

BALANCERS

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calcium increaser

Active Constituent

- 996g/kg Calcium Chloride

Features & Benefits

- Increases level of calcium in pool water
- Raises total hardness in water
- Promotes improved water balance
- Assists in protecting pool equipment and helps prevent corrosion
- Assists in protecting pool surfaces thus safeguarding their condition
- Prevents weakness in vinyl liners
- Classified as Non-Dangerous goods for transport and storage purposes

Application

- Product should be pre-dissolved in a bucket of water adding 2kg to 5 litres of water
- If more than 6kg is needed per 50,000 Litres of pool water dose separately and apply at least 12hrs apart

Dosage

- 100g will raise the Calcium Hardness by 10ppm per 10,000 Litres
- Dosage rates indicated are only a guide

Available Sizes

- 2kg Flexi Pack WP-CC-CI-2K
- 4kg Flexi Pack WP-CC-CI-4K
- 25kg Bag WP-CC-CI-25K

BALANCERS

clearchem

pH reducer

Active Constituent

- 1000g/kg Sodium Bisulphate Powder

Features & Benefits

- Decreases pH & Total Alkalinity of pool water
- Safer to use than liquid pool acid
- Spills are easier to clean than liquid pool acid
- Classified as Non-Dangerous goods for transport and storage purposes

Application

- Product should be pre-dissolved in a bucket of water

Dosage

- To decrease TA by 10ppm in 25,000 Litres add 375 grams
- To decrease TA by 10ppm in 50,000 Litres add 750 grams
- Dosage rates indicated are only a guide

Available Sizes

- 5kg Rigid Packs WP-CC-PR-5K
- 25kg Bag WP-CC-PR-25K

BALANCERS

clearchem

sunscreen

Active Constituent

- 996g/kg Cyanuric Acid

Features & Benefits

- Protects chlorine from ultra-violet light
- Allows chlorine to work more efficiently
- Reduces chlorine demand
- Classified as Non-Dangerous goods for transport and storage purposes

Application

- May be added slowly via the skimmer box with the pump running
  - o Run pump for a minimum of 8 hours
- May be added directly to the pool.
  - o Mix in a bucket of water first and then broadcast over entire pool surface
- Pool may go cloudy for a short period but will clear within 8 hours
- Cyanuric acid may take up to 24 - 36 hours to dissolve completely
- Level of cyanuric acid should be tested every 6 - 8 weeks depending on rainfall

Dosage

- Add 100gm per 10,000 Litres to raise Cyanurate level by approximately 10ppm
- Dosage rates indicated are only a guide

Available Sizes

- 1kg Flexi Pack WP-CC-SU-1K
- 2kg Flexi Pack WP-CC-SU-2K
- 25kg Bag WP-CC-SU-25K

BALANCERS

clearchem

pro-lite

Active Constituent

- 504g/kg Dichloroisocyanuric Acid
- 100g/kg Sodium Tetraborate Pentahydrate

Features & Benefits

- Fast dissolving, no residue
- Enhances water quality and softens water
- Minimal effect on pH of pool water
- Cyanuric acid increases longevity of available sanitiser
- Convenient single dose pack sizes for boosting salt pools
- Classified as Non-Dangerous goods for transport and storage purposes

Application

- Dissolve granules in water prior to use or add directly to water

Dosage

- Initial start-up dose is 100 - 170gms per 10,000 litres
- Then apply a daily dose of 25 - 35 gms per 10,000 litres
- Dosage rate are only a guide

Available Sizes

- 500gm Sachet WP-CC-PL-500G

CHLORINE SHOCK TREAMENTS

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POOL TIPS

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POOL TIPS CONTENTS

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pH

Suggested range: 7.2 to 7.8

A scale of measurement, pH was invented to measure the acidity of water in the brewing of beer in the early 1900's. "pH" stands for "potens hydrogen," Latin for "hydrogen potential" as acidity is caused by a predominance of the hydrogen ion.

pH is measured on a scale from 0-14, with a pH of 7 being neutral. Below 7, the water is acidic and above the water is basic (or alkaline).

The pH scale is logarithmic, meaning that every unit means "10 times." Therefore, a pH of 6 is 10 times more acidic than a pH of 7 and a pH of 3 is 10,000 times more acidic than a pH of 7.

Note that the pH range recommended for pool/spa waters is slightly alkaline, which assists bather comfort, as the pH of the human eye is about 7.5.

POOL PROBLEMS

LOW pH

Corrosive Water
- pitting concrete
- metals dissolve
- staining of walls

Non-Balance Problems
- chlorine loss
- vinyl wrinkles
- skin/eye irritation

HIGH pH

Scaling Water
- scaling Water
- reduced circulation
- cloudy pool
- increased algae growth

Non-Balance Problems
- chlorine inefficiency
- skin/eye irritation

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TOTAL ALKALINITY

Suggested range: 80-120 ppm

Total alkalinity is the measure of the ability of water to resist changes in pH. That is the ability to "buffer" water from wide pH swings.

Essentially the amount of sodium bicarbonate dissolved in pool water, total alkalinity serves two purposes: it is the governor of pH and it is the third and last factor that affects water balance.

A buffer is a chemical system that resists change upon the addition of acids or bases.

In water that contains no buffering ability, pH can wander dramatically. This is called pH bounce - a rapid fluctuation of pH levels with the addition of small amounts of acid, base (alkali), or other pH-altering agents (e.g., alum, sodium hypochlorite).

The result is a highly unbalanced water condition resulting in damage to copper heat exchangers, light rings, stainless steel ladders, and concrete pool surfaces.

POOL PROBLEMS

LOW TOTAL ALKALINITY

Corrosive Water
- pitting of concrete
- metals dissolve
- staining of walls

Non-Balance Problems
- pH bounce

HIGH TOTAL ALKALINITY

Scaling Water
- clogged filters
- reduced circulation
- cloudy pool

Non-Balance Problems
- pH drifts upward

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CALCIUM HARDNESS

Suggested range: 200-400 ppm

Water that contains high levels of calcium and magnesium salts is called hard water.

These salts react with soap and make it "hard" to form suds. They actually combine with soap to form a grey insoluble curd-like substance and cause problems in laundry use.

Water that contains little or no calcium/magnesium is called "soft." With the advent of detergents, this problem has all but disappeared; however, for bath water and some industrial applications, water is "softened" before use, employing water softeners that remove all of these materials.

POOL PROBLEMS

LOW CALCIUM HARDNESS

Corrosive Water

- etching of plaster
- pitting of concrete
- dissolving of grout
- pitting of pool decks

HIGH CALCIUM HARDNESS

Scaling Water

- clogged filters
- reduced circulation
- cloudy pool
- heater inefficiency

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WATER BALANCE ADJUSTMENTS

Below is a list of chemicals that adjust the three water balance parameters:

	Total Alkalinity	Calcium Hardness	pH
To INCREASE	Sodium Bicarbonate	Calcium Chloride	Sodium Carbonate
To DECREASE	Hydrochloric Acid	Dilution	Hydrochloric Acid

Sequence to adjust

1st - Fix Total Alkalinity
2nd - Fix Calcium Hardness
3rd - Fix pH

If dilution required to lower Calcium Hardness, then fix Total Alkalinity and pH after completing dilution.

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A FEW EXAMPLES OF PROBLEMS WITH WATER BALANCE

SYMPTOM: Tendency for the pH to remain low (below 7.2).

LIKELY CAUSE:

- This is usually due either to low pH of mains water (especially in soft water areas) or to the use of an acidic chlorine, such as trichlor

To Remedy:

- Correct the pH.
- To raise the pH, add soda ash (sodium carbonate) at a rate of 1kg per 100,000 litres per day until correct reading is obtained.
  - o Consider changing to a high pH chlorine source to help achieve a natural balance between the low pH of the water and the high pH of the chlorine used.
    - Dichlor is roughly pH neutral
    - Calcium Hypochlorite and Sodium Hypochlorite are high pH chlorine sources.

SYMPTOM: Tendency for the pH to be permanently high (above 7.6).

LIKELY CAUSE:

- This is due to either
  - o High pH of mains water (especially in hard water areas)
  - o The use of alkaline chlorine sources such as calcium or sodium hypochlorite,
  - o Hardness salts being leached from new concrete or mosaic pools.

To Remedy:

- The remedy is the same irrespective of which factor is at work here
  - o Correct the pH.
- To lower the pH, add dry acid at a rate of 1kg per 100,000 litres per day until correct reading is obtained.
  - o For (1) and (2), consider changing to a low pH chlorine source to help achieve a natural balance between the high pH of the water and the low pH of the chlorine source.
- Trichlor is the obvious chlorine to choose.
  - o For (3), the difficulties with new concrete pools should clear up of their own accord given sufficient time.

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A FEW EXAMPLES OF PROBLEMS WITH WATER BALANCE

SYMPTOM: pH values are erratic and fluctuate.

LIKELY CAUSE:

- The reason will be that the total alkalinity will be too low to buffer the pH

To Remedy:

- Add sodium bicarbonate to ensure the total alkalinity remains above 100ppm.
  - The dose rate is 3kg per 100,000 litres of pool water.

SYMPTOM: pH is locked.

LIKELY CAUSE:

- The water is over buffered due to high alkalinity. This is a not uncommon problem in hard water areas where the mains feed water has a high total alkalinity.

To Remedy:

- Add dry acid to lower the total alkalinity to below 200ppm.
  - The dose rate is 2kg per 100,000 litres of pool water. It is important to add the acid a little at a time and pre-dissolved at a dilution no stronger than 8:1.

SYMPTOM: Tendency for the alkalinity to be too low.

LIKELY CAUSE:

- The local feed water is low in bicarbonates so that whenever the pool is topped up from the mains, it dilutes the bicarbonates in the pool. This is a particular problem in soft water areas.

To Remedy:

- Add sodium bicarbonate to raise the total alkalinity to around 100ppm.
  - The dose rate is 3kg per 100,000 litres of pool water (this should raise the level by 20ppm per dose).

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WATER BALANCE COMBINATIONS TO WATCH FOR

HIGH pH plus HIGH CALCIUM

- A recipe for scaling and cloudy water, forms scale film on pool surfaces and pipes, and can even form sharp crystallized nodules of calcium.

HIGH pH plus LOW CHLORINE

- Perfect conditions for cloudy water and algae. Algae prefers a high pH level and is just waiting for a low chlorine opportunity to bloom.

LOW pH plus LOW ALKALINITY

- Will cause etching and corrosion to steel, copper, rubber, vinyl and plaster surfaces. Low pH is great for chlorine potency and algae prevention, but once it drops below neutral 7.0 acidic water begins to corrode pool surfaces and equipment.

LOW pH plus HIGH ALKALINITY

- Same as above, only it becomes hard to raise pH, due to buffering effect of a high alkalinity. Add enough Dry Acid to lower alkalinity (and pH). Requires several doses over many days, raising pH after each treatment.

LOW CHLORINE plus LOW STABILISER

- Hazy – cloudy – green water is the usual progression. Add a Shock Treatment to bring the level up quickly. Then replenish tablets, salt, stabiliser etc (whichever appropriate)

HIGH CHLORINE plus HIGH STABILISER

- This can damage soft and shiny surfaces over years of very high chlorine levels (5-10 ppm). High stabiliser levels over 100 ppm can cause problems in chlorine potency and chlorine testing becomes unreliable.

HIGH COMBINED CHLORINE

- Chloramines are Free Chlorine molecules joined with ammonia or nitrogen. They are no longer an active sanitiser and they cause red eyes and smelly pools. When chloramine level exceeds 0.3 ppm use a Non-Chlorine Shock treatment

LOW CALCIUM HARDNESS

- Creates a corrosive water condition, causing etching, and leaching of calcium from plaster or tile grout. Low hardness is also bad for vinyl liners when the water is too soft. It hinders overall water balance and chemical effectiveness, too.

HIGH PHOSPHATES

- Phosphates enter the pool from many sources. Phosphates and nitrates prevent other chemicals from working at their most effective level and they are also favourite foods for algae. Add StarverM or StarverX (whichever appropriate)

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UNSUITABLE POOL CHEMICAL COMBINATIONS

Many common pool chemicals are incompatible with each other and should never be mixed

SUPERCHLORINATION/CHLORINE SHOCK TREATMENT plus ALGAECIDE

- Superchlorination will disrupt the polymer chains or chemical compounds used in many pool algaecides, and, in some cases, it will completely destroy the algaecide. Wait 24 - 48 hours after superchlorinating to add algaecide or superchlorinate 24-48 hours after adding algaecide. Particularly important with a calcium based chlorine and a copper based algaecide such as Lo-Chlor Pool Algaecide or Tropical/Tropi clear Pool Algaecide.

SUPERCHLORINATION/CHLORINE SHOCK TREATMENT plus SEQUESTERING AGENT

- Superchlorination will also disrupt chelating or sequestering agents (which are used to keep metals etc in solution), if added at the same time. Add sequestering or chelating chemicals (such as Aquaguard CSM) a day before, or several days after, shocking a pool. Also, avoid adding shock treatments to pool water containing high concentrations of metals (described below).

HARDNESS INCREASERS plus ALKALINITY INCREASERS

- Concurrent use of hardness increasers (such as calcium chloride) and alkalinity increasers (such as sodium bicarbonate), can make pool water cloudy and cause scale to form on pool surfaces and equipment. This effect can be seen with concurrent use of Hardness Increaser and Soda Ash (Sodium Carbonate) as well. Leave a gap between adding products.

FLOC/CLARIFIER plus SEQUESTERING AGENT

- Adding a Floc or Clarifier alongside a sequestering agent (such as Aquaguard CSM) can also result in cloudy pool water. Leave a gap between adding products.

SUPERCHLORINATION/CHLORINE SHOCK TREATMENT plus HIGH METALS

- You should also never add any form of Shock Treatment when there are metals in the water. A drastic increase in chlorine or sustained amounts of chlorine in the water will cause staining if metals like copper or iron are present in the water. If, for example, a copper heat exchange is eroding from low pH, and you shock poorly balanced pool water, you will end up with black streaks and stains as high metal levels can drop-out of solution in such cases. Keep pH, Alkalinity and Calcium Hardness within range, and add a regular treatment of a sequestering agent like Aquaguard CSM to keep metals in solution

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UNSUITABLE POOL CHEMICAL COMBINATIONS

SUPERCHLORINATION/CHLORINE SHOCK TREATMENT plus ENZYME PRODUCTS

- When using an enzyme product, avoid adding any form of Shock Treatment before or after the enzymes. A Shock Treatment can destroy the enzymes you just put into the pool. Leave a gap between adding products.

TRICHLOR plus CALCIUM HYPERCHLORITE

- Never mix a Trichlor tablet with a Calcium Hypochlorite product. Putting these pool chemicals together in the water can result in a dangerous chemical fire or explosion.

CHLORINE plus HYDROCHLORIC ACID

- Perhaps most important of all, never add Chlorine and Hydrochloric Acid together in the pool. This creates a dangerous toxic gas that can have serious health effects if inhaled. Leave a gap between adding chlorine (such as sodium hypochlorite) and Hydrochloric Acid to pool water.

GENERAL EXAMPLES OF CHEMICALS THAT SHOULD NOT BE ALLOWED TO CONTACT EACH OTHER

- A drop of algaecide, clarifier, antifreeze, or other liquids mixed with chlorine, can erupt into a raging fire.
- Mixing chlorine and acid (pH down) creates a deadly gas.
- Mixing different chlorine types can explode when moisture is added.
- Chemical residue from a bucket or scoop mixing with another chemical can react.
- Dirt, dust, leaves and any liquid can cause a volatile reaction when mixed with pool chlorine.
- Chlorine mixed with any other chemical or foreign substance can emit toxic gases, erupt in flames, explode, or all of the above
- Mixing of organic chlorinating agents (such as trichlor) and inorganic chlorinating agents (such as sodium hypochlorite) can lead to fires, explosions and chlorine gas release.

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A FEW EXAMPLES OF PROBLEMS WITH CHEMICAL OVERDOSING

SOME CHEMICALS TO BE PARTICULARLY CAREFUL WITH FOR OVERDOSING

CLARIFIERS

- This is probably the easiest pool chemical with which to overdose pool water.
- If you overdose a pool with a clarifier, instead of behaving as a coagulant, the electron charge can reverse, causing some formulas to behave as a dispersant.
- Clarifiers attract colloidal matter in a pool (the stuff that makes it cloudy) and clump them together giving them more mass. The bigger the particle, the easier it is for a pool filter to catch.
- Too much clarifier in the pool can act as a dispersant instead of a coagulant and separate the particles even more rather than clump them together.
- Be particularly careful not to overdose pool clarifiers and closely follow dosage instructions.
- With Miraclear Liquid Clarifier add 500ml per 50/60,000 litres.

ALGAECIDES

- Algaecides are another chemical that is easily overdosed because it's easy to think that, if there is a lot of algae, then the more algaecide you put in the better. That is not the case, and more is definitely not better.
- Think of an algaecide almost like a soap. If you put too much soap in the washing machine, dishwasher or a bath you can work up a froth of foam that can really create a big mess.
- Excessive foam from a Quat algaecide like Algae Knock Out (which has a foaming action anyway by virtue of constituent), as well as having a bad smell, will also make swimming uncomfortable and in some cases impossible.
- Also, be very careful with a copper algaecide such as Lo-Chlor Pool Algaecide or Tropical/Tropiclear Pool Algaecide as an overdose of a copper algaecide can create staining in a pool and other problems, such as turning blonde hair to green hair.

SUPERCHLORINATION/CHLORINE SHOCK TREATMENT

- As with all pool chemicals the amount of superchlorination you need to use for a pool is largely dependent on how many litres of water the pool holds.
- Plaster and fiberglass pools can take almost as much as you can add, but painted pools or liners can be affected by very high chlorine levels.
- Repeated, or too regular, use of superchlorination will affect the quality/reliability of the liner.
- Shocking a vinyl pool heavily a few times per year won't hurt, but it shouldn't be done "say" weekly.
- Using a Non Chlorine Shock for chloramine control, however, won't harm a liner at all.

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A FEW EXAMPLES OF PROBLEMS WITH CHEMICAL OVERDOSING

CYANURIC ACID

- Cyanuric acid also known as Stabiliser helps you get more life out of chlorine by preventing chlorine from dissipating from the sun.
- Too much Cyanuric Acid, however, can lead to ineffective sanitation, and at levels over 100 ppm, the dreaded 'chlorine-lock', where you cannot get a chlorine reading.
- If you accidentally add too much CYA by mistake, drain a portion (or all) of the pool and refill or add the Lo-Chlor CYA Reducer which alleviates the necessity to empty the pool and refill.

pH

- Invariably one must adjust alkalinity or pH in one direction or the other after you test the pool water.
- Following a dosage chart on pH and Alkalinity is extremely important because if either of these gets too far out of tune it can be hard to put them back in tune.
- This can lead to corrosive damage to pool equipment and pool surfaces, as well as the handrails or ladders, if the pH is it too low.
- Too high a pH level can result in scaling and potentially chlorine lock. If you overdose on alkalinity increaser you can lock-in your pH, making it hard to change. It becomes a vicious cycle of adjustments.

NEVER OVERDOSE
MORE IS NOT BETTER

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A FEW EXAMPLES OF PROBLEMS WITH ALGAE

WHAT CAUSES ALGAE PROBLEMS?

- Every pool owner has, at one time or another, done battle with the occasional algae bloom. Algae spores constantly enter the pool, brought in by wind, rain or even contaminated swimsuits or equipment.
- When conditions are right, an algae bloom can occur seemingly overnight. These conditions include out of balance water, warm temperatures, sunlight and presence of nitrates and/or carbon dioxide. Of course, a lack of proper circulation, filtration and sanitation may be the primary cause of the algae. The best process is one of elimination.
- Algae are living aquatic creatures that multiply rapidly on warm, sunny days. Containing chlorophyll, algae utilize photosynthesis to grow. That is, they take in carbon dioxide and expend oxygen as a by-product.

WHAT PROBLEMS CAN ALGAE CAUSE?

- The first noticeable problem is that no one seems to want to go swimming.
- The second problem is that it requires work and effort and money to rid the water completely of algae.
- It is therefore best to use preventative chemicals and techniques, described later. Algae can cloud and colour the water and, although, algae itself is not harmful to swimmers, pools with algae may also be harbours to pathogens like E-coli bacteria.
- In addition to clogging up sanitation pathways in the water, algae also clog up the pores in a filter, decreasing filter effectiveness and requiring more backwashing or possible medium replacement.
- Algae create a chlorine demand in the water for itself, actually consuming chlorine that should be working on other contaminants. Algae are like weeds in your garden. Unsightly, unwanted space takers that create more work for the gardener and sap up nutrients and resources from the flora we wish t o grow.

WHAT TYPES OF ALGAE ARE THERE?

- There are over 21,000 known varieties of algae
- In the pool business we avoid all of the complication by referring to algae by the colour they exhibit.

  GREEN ALGAE:
  - An extremely common variety, green algae will usually rear its ugly head immediately following a hazy condition in the water from a lack of proper filtration and/or sanitation.
  - It is frequently found free floating in the water, although it also will cling to the walls. It reduces water clarity and is thereby distinguished from severe copper precipitation, which will impart a clear, green colour to the water.
  - Varieties of green algae also appear as “spots” on surfaces, particularly rough areas, or places where circulation is low. They also show up as “sheets”, where large wall sections, or even the entire pool, are coated in green slime.

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A FEW EXAMPLES OF PROBLEMS WITH ALGAE

YELLOW ALGAE

- A wall clinging variety, also called mustard algae, is usually found on the shady side of the pool.
- It is sheet forming and can be difficult to eradicate completely. Once begun, a pool owner could spend the entire season fighting yellow algae. Re-infection is common.
- This variety is resistant to normal chlorine levels and must be dealt with firmly.

BLACK ALGAE

- Perhaps the most aggravating strain of algae
- The difficulty in eradication is due to the strong roots and protective layers over top of the black algae plant.
- Black algae will appear as dark black or blue/green spots, usually the size of a pencil eraser tip. Their roots extend into the plaster or tile grout, and unless the roots are destroyed completely, a new head will grow back in the same place.
- The heads also contain protective layers to keep cell destroying chemicals from entering the organism. Like yellow algae, black strains can bloom even in the presence of normal sanitising levels and proper filtration.

PINK ALGAE

- Not really a strain of algae at all, but a form of bacteria.
- It appears as spots or streaks in corners and crevices.
- It is slow to spread and rare that it will bloom over an entire pool.

HOW IS ALGAE PREVENTED?

- Proper chemical balance and sanitiser residuals will prevent many opportunities for algae to bloom.
- High pH and low chlorine (or other sanitiser) can give algae a great start to multiply.
- Removing phosphates (the main food for algae) from the water. Use Lo-Chlor StarverM on an ongoing basis to prevent a build-up of phosphates.
- General cleanliness of the pool is also important. Organic material and bacteria can contribute to algae growth.
- Regular brushing of seemingly clean pools prevents dirt from harbouring in the pores of the plaster, which is a good start for an algae colony.
- The use of Curative and Long Life Preventative Algaecides such as Lo-Chlor Pool Algaecide is recommended to provide a back up to normal sanitation and filtration processes

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ALGAECIDES

QUATERNARY AMMONIUM COMPOUNDS

- Quats, as they are called, will have a figure on the bottle, showing the active ingredient which varies from low to high strength and there are also different qualities.
- Quats tend to produce a small amount of surface foaming.
- There are some higher strength and quality Quats such as Lo-Chlor Algae Knockout that may be used as a very effective cure particularly in pebble pools

POLYMERS

- Polymers are long, complicated chemical chains
- They are available in percentage strength of 30-60%, are non-foaming, and work well as general, all around algae treatments.
- Poly-Quats are a blended compound of polymer and Quats.

COPPER BASED

- Copper is a proven algaecide
- It is the best Long Life Algaecide available
- Most copper based algaecides are chelated, which means that agents have been added to prevent them precipitating out of solution
- Lo-Chlor Pool Algaecide is the ideal all year round algaecide to both kill and protect against algae for up to 3 months.

HOW DO YOU KILL ALGAE?

- First off, balance your water, paying particular attention to pH.
- Secondly, check your filter system and clean if necessary.
- Run pump for optimum circulation and allow it to run until the pool clears.
- Turn on automatic cleaners to help stir things up.
- Backwash as necessary.

FOR SUSPENDED GREEN ALGAE

- Shock dose the pool
- Brush the walls and floors
- Backwash the filter when the pressure gauge indicates it is necessary
- Add Lo-Chlor Tropical/Tropiclear Algaecide
- Brush the pool again.
- Use a flocculent if the pool is extremely cloudy
- When it all settles, vacuum the pool (to waste, if possible).
- Check and re-balance the pool water if necessary.

ALGAE PROBLEMS

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SOME MORE ALGAE PROBLEMS

FOR ALGAE WHICH IS NOT SUSPENDED, BUT ONLY CLINGING TO THE WALLS

- Shock dose the pool
- After adding a shock dose, brush, then add Tropical/Tropiclear Algaecide.
- Brush again, vacuum to waste or vacuum and then backwash the filter.
- Use of a steel bristled brush is recommended for algae on plaster pools (use nylon brushes on vinyl).
- Keep Filtering

FOR BLACK ALGAE

- Shock dose the pool
- After adding a shock dose, brush, then add Tropical/Tropiclear Algaecide or Algae Knock Out
- The brushing part is very important.
- You must tear through the protective layers so the chemicals can destroy the plant from the inside out.
- Don't forget to vacuum them up later, and backwash them out of the filter
- Also effective on the black algae (in specific pool surfaces only) is sprinkling Lo-Chlor Black Spot 900 over the spots on the floor of the pool.

FOR GOOD ALGAE PREVENTION, WE NEED A COMBINATION OF

- Good filtration,
- Good sanitation and circulation.
- A Long Life Algaecide.
- A Phosphate Remover

TO SAVE MONEY AND AGGRAVATION LATER ON FIGHTING ALGAE BLOOMS, IT'S CHEAPER AND EASIER TO PAY A LITTLE MORE INITIALLY FOR

- Preventative chemicals
- Better equipment

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A FEW EXAMPLES OF PROBLEMS WITH WATER CLARITY

SYMPTOM: Cloudy/Milky Water.

There are 4 possible causes - your testing equipment will give you the best idea as to which is the most likely.

FIRST POSSIBLE CAUSE:

Fine suspended particles floating in the water can lead to a milky white discolouration. This will probably be due to a precipitation of dissolved hardness salts as result of high pH or high total alkalinity, or both. (Precipitation is a process where dissolved minerals become transformed into very small solid particles).

To Remedy:

- Lower the pH or alkalinity using dry acid.
  - To correct pH, add dry acid at a rate of 1kg per 100,000 litres per day until correct reading is obtained.
- To correct alkalinity, the dose should be doubled.
  - It is important to add the acid a little at a time and pre-dissolved at a dilution no stronger than 8:1.
- Add one of Lo-Chlor's clarifiers to add sparkle to the water.

SECOND POSSIBLE CAUSE:

Build up of dirt and bather pollution due to insufficient chlorine or poor filtration

To Remedy:

- Backwash filter, then superchlorinate by adding an unstabilised chlorine such as sodium hypochlorite or calcium hypochlorite to raise the free chlorine to 10ppm.
- Add one of Lo-Chlor's clarifiers to add sparkle to the water.

THIRD POSSIBLE CAUSE:

The effectiveness of the chlorine has been reduced in pools using stabilised chlorine because the water is over-stabilised (i.e. the levels of stabiliser (cyanuric acid) are too high). This prolongs the time it takes to kill organisms (bugs) which can proliferate and lead to haziness in the water.

To Remedy:

- Replace some of the pool water by draining to waste (or carrying out an extra large backwash), then top up with fresh water.
- This will lower levels of stabiliser.
- Superchlorinate to 10ppm using the products recommended above.
- Add one of Lo-Chlor's clarifiers to add sparkle to the water.

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A FEW EXAMPLES OF PROBLEMS WITH WATER CLARITY

FOURTH POSSIBLE CAUSE:
The filter is blocked or is ineffective

To Remedy:
- Check sand and replace if necessary.
- Sand particles can become coated with calcium in some circumstances, especially in hard water areas.
- If the filter is not blocked and seems all in order in all other respects, treat with one of Lo-Chlor's filter cleaners to rejuvenate the sand.
- Add one of Lo-Chlor's clarifiers to add sparkle to the water.

SYMPTOM: Cloudy/Green Water.

PROBABLE CAUSE:
At some stage, chlorine levels have fallen, or chlorine has become ineffective, allowing algae to colonise the water.

To Remedy:
- Shock dose with an unstabilised chlorine such as calcium hypochlorite or sodium hypochlorite and use an algaecide.
  - For greenish discolourations (where the water is no more than tinted green), superchlorinate to 10ppm.
  - For more serious problems, where the water is pea-soup green and the bottom is invisible, shock dose up to around 25ppm. This will help kill the algae.
- Brush off any algae that may remain on pool surfaces. Look for colonies behind step ladders and around underwater lighting.
- Backwash the filter 24 hours later to remove dead algae from the top of the filter media.
- Use one of Lo-Chlor's curative algaecides in conjunction with Starver
- Any remaining haziness in the water should be removed by using one of Lo-Chlor's water clarifiers. There after maintain chlorine at around 3ppm to prevent a recurrence.
- If the pool is particularly susceptible to algae, consider regular use of one of Lo-Chlor's Long Life algaecides and also Starver to keep phosphate from the water

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A FEW EXAMPLES OF PROBLEMS WITH WATER CLARITY

SYMPTOM: Rust red Water.

PROBABLE CAUSE:

Steel or ferrous metal fittings in the circulation system e.g. pipes are being corroded by low pH. A shock dose of chlorine will then oxidise the ferrous particles creating rust. This can often happen after re-opening a pool.

To Remedy:

- It is necessary to act very quickly to prevent consequential damage such as staining of the liner, if fitted.
- Contact your pool installer or pool dealer to see if it is safe to drain down and replace the water all in one go, or whether this should be done by progressive dilution.
- Remove any rust staining from the pool surfaces with a Lo-Chlor Stain Remover.
- Replace the ferrous metal fittings using pvc or copper.
- Ensure the fresh water is properly balanced i.e. that pH and total alkalinity are within recommended parameters.

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A FEW EXAMPLES OF PROBLEMS WITH POOL SURFACES

SYMPTOM: Loss of grouting in mosaic/tiled pools, or sharp edges around tiles.

There are two possible factors at work here:

FIRST POSSIBLE CAUSE:

- In soft water areas, the grouting is being etched by the pool water. This is because there is insufficient calcium in the water. There is a tendency for water to form an equilibrium by searching for calcium - in this case from the grouting or plaster.

To Remedy:

- Re-grout the pool and increase calcium levels in the water by adding calcium chloride flakes so as to achieve a minimum calcium hardness level of 250ppm.
- Alternatively, use calcium hypochlorite for shock dosing or for regular sanitisation - calcium will be automatically added to the water in using this sanitiser.

SECOND POSSIBLE CAUSE:

- High levels of sulphate in the water.
  - o You need to test for sulphates to confirm this.
  - o The sulphate level should not exceed 350ppm.
  - o High sulphates may be caused by
    - a) High sulphates in the mains water
    - b) The frequent use of dry acid (sodium bisulphate)
    - c) Use of aluminum sulphate as a water clarifier.

To Remedy:

- If you suspect factors (b) or (c)
  - o Dilute with fresh water and switch to alternative methods of lowering the pH (e.g. using trichlor as the main pool sanitiser), or clarifying the water with a sulphate-free treatment
- There is not much you can do about (a).

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A FEW EXAMPLES OF PROBLEMS WITH POOL SURFACES

SYMPTOM: Pool surfaces feel rough and scaly.

LIKELY CAUSE:

- The balance between pH, total alkalinity and calcium hardness is incorrect, and the water is technically 'scale forming'.

To Remedy:

- Test for pH, total alkalinity and calcium hardness and bring them within recommended parameters.
  - Carry out a water balance calculation

SYMPTOM: Pool surfaces feel slippery.

LIKELY CAUSE:

- This is probably algae forming a colony on the pool surface due to insufficient chlorination at some stage, or to a 'dead spot' in the water circulation.

To Remedy:

- Sweep the affected areas vigorously to remove as much algae as possible, then shock dose with an unstabilised chlorine (follow the procedure set out for killing algae).
  - Prevent a recurrence by using a Long-Life algaecide such as Lo-Chlor Pool Algaecide

SYMPTOM: Tide mark (Scum Line) on pool wall at water line.

LIKELY CAUSE:

- What you are seeing is a buildup of greasy deposits such as cosmetics, sun cream or body fats.

To Remedy:

- Clean with a tile and liner cleaner ensuring that it does not contain detergent compounds that could react with chlorine and cause bather discomfort.
  - We recommend Lo-Chlor Tile & Vinyl Cleaner
- Regularly use Lo-Chlor Ultra Kleer Plus 4-1 to prevent a buildup of body fats in the water causing the scum line

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A FEW EXAMPLES OF PROBLEMS WITH FILTRATION

INEFFECTIVE FILTRATION IN SAND FILTERS
INEFFECTIVE FILTRATION IN CARTRIDGE FILTERS

SYMPTOM: Ineffective filtration in sand filters.

POSSIBLE CAUSES:

- Sand has escaped from the filter leaving insufficient filter media to take out suspended particles.
- The filter is blocked by accumulated debris.
- The sand particles are coated in calcium.

To Remedy:

It's simply a matter of topping up the sand.

- If the filter is blocked by debris, backwash.
- If the problem is persistent, and the sand particles are becoming coated with calcium (more likely in a hard water area), use Lo-Chlor Filter Cleaner & Degreaser.
- As a last resort, have a complete sand change, which should be carried out approximately every 3-5 years in any event.

SYMPTOM: Ineffective filtration in cartridge filters.

POSSIBLE CAUSES:

- Either the cartridge is in poor condition, allowing particles to pass through it or the demands on it from debris in the water are too great for it to cope.

To Remedy:

- Replacing the cartridge is the obvious remedy.
  - If the problem is persistent, try using a one of Lo-Chlor's water clarifiers.
  - Failing this, the ultimate remedy is to install a sand filter.

Never underestimate the value of your Water Testing Station as it is the key to the success of your shop. Take every advantage of the fact that whilst you are performing a test you have a captive audience who is waiting with bated breath for you to pass on the benefit of your knowledge and experience to them. They will appreciate your taking the trouble to ask them as many questions about the condition of their pool or spa as you chose to as they will realize that you are only taking the trouble to do so for their benefit.

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A FEW RECOMMENDATIONS FOR USING CHEMICALS

- **NEVER MIX CHEMICALS**
- **ALWAYS ADD THE CHEMICAL TO WATER NEVER WATER TO CHEMICAL**
- **ALWAYS KEEP CHEMICALS OUT OF THE REACH OF CHILDREN**

CHLORINE

IDEAL LEVEL 2-3 PPM

- Add chlorine to pool daily. Preferably late afternoon
- Liquid chlorine does not require any dilution. Pour directly into pool
- Dissolve GRANULAR CALCIUM BASED CHLORINE in a bucket of pool water and allow to settle for a few minutes
  - Then pour the dissolved solution into the pool in front of the pool returns (jets)
  - Discard any residue left in the bucket

HYDROCHLORIC ACID

IDEAL LEVEL pH 7.2-7.6 Total Alkalinity 80-120 PPM

To lower pH and Alkalinity

Pour required amount of HYDROCHLORIC ACID into a half-filled bucket of pool water

- PLEASE NOTE: BE CAREFUL TO AVOID FUMES AND CONTACT WITH SKIN
- Pour the mixture into the pool in front of the pool returns (jets)

pH BUFFER

IDEAL LEVEL pH 7.2-7.6 Total Alkalinity 80-120 PPM

To raise pH and Alkalinity

Dissolve pH BUFFER in a half filled bucket of pool water

- Pour the mixture into the pool in front of the pool returns (jets)

STABILISER

IDEAL LEVEL 50-70 PPM

- Add STABILISER to a bucket of pool water and allow to stand for a few minutes
- The mixture will then turn to a paste. Pour the paste slowly into the skimmer box
  - If a filter sock is being used, remove whilst STABILISER is being added
- For fibreglass or pebble pools you may add STABILISER directly to the pool

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A FEW RECOMMENDATIONS FOR USING CHEMICALS

SALT CHLORINATOR

MINIMUM IDEAL LEVEL 3000 PPM
OPTIMUM IDEAL LEVEL 5000 PPM
(MAY VARY DEPENDANT ON BRAND)

- Turn chlorinator OFF or to ZERO PRODUCTION
- Disconnect automatic cleaner
- Add SALT directly to pool
  - Brush undissolved SALT until it has completely disappeared
- Once SALT is fully dissolved, turn chlorinator ON and reconnect automatic cleaner
- Adding Lo-Chlor AQUAGUARD CSM is recommended
  - Every 3 months
  - When adding large amounts of salt

CALCIUM HARDNESS

IDEAL LEVEL 200-250 PPM
PLEASE NOTE BEFORE ADDING CALCIUM TO POOL

- pH MUST BE BELOW 7.6
- TOTAL ALKALINITY MUST BE BELOW 110ppm
  - LOWER BOTH BY ADDING HYDROCHLORIC ACID
- Turn chlorinator OFF or to ZERO PRODUCTION
- To INCREASE HARDNESS add CALCIUM INCREASER
  - It dissolves readily on contact with water
  - Pour slowly into the skimmer box with the filtration system ON
- Ensure filter continues to run for at least 10 -15 minutes after calcium has been added before turning chlorinator back ON or putting the production back UP
- To REDUCE HARDNESS, add Lo-Chlor CALCIUM HARDNESS REDUCER
  - Initial treatment: 1 Litre per 40,000 litres of water.
    - This will remove approximately 100 ppm of calcium hardness
  - Maintenance Dosage: 125mL per 40,000 litres of water every 7 to 14 days

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A FEW RECOMMENDATIONS FOR USING CHEMICALS

PHOSPHATE

IDEAL LEVEL ZERO PPM

- Get pool water tested for phosphate
- If you have a reading of phosphates add (dependent upon phosphate level)
  - o Lo-Chlor STARVER®X

  OR
  - o Lo-Chlor STARVER®X
- Lo-Chlor STARVER®Xis a designed specifically for pools with EXTREMELY HIGH PHOSPHATE LEVELS (ABOVE 2ppm)
  - o Using it to reduce VERY HIGH PHOSPHATE LEVELS (anything above 1ppm) to a manageable level will do it in a FAST, ECONOMICAL manner
  - o A ONE Litre bottle of STARVER®X will reduce phosphate levels by up to 6ppm in a 50,000 litre pool
- Lo-Chlor STARVER®X, is recognised as AUSTRALIA'S PREMIUM PHOSPHATE REMOVER and should be used after phosphate levels have been reduced to a manageable one.
  - o Once levels are more manageable the phosphates can be REDUCED to and MAINTAINED at NEAR ZERO levels with regular additions of STARVER®M
  - o Lo-Chlor STARVER®M should be used ongoing to keep a pool PHOSPHATE FREE
  - o Test regularly for phosphates and advise on dosages required if necessary.

CHEMICAL USAGE


PoolSystems
pool ▪ spa ▪ lifestyle™
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THE CLEAR ALTERNATIVE